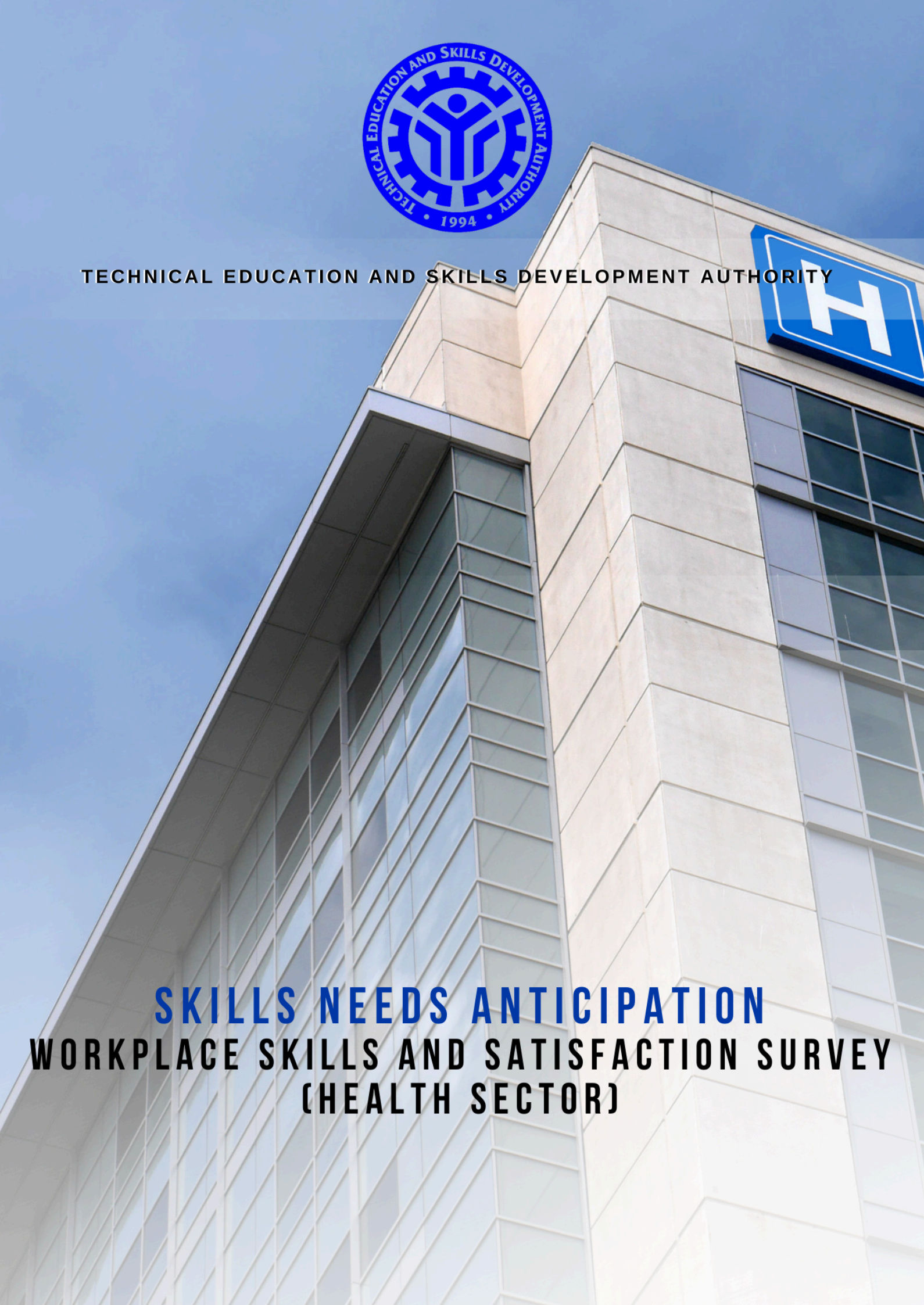

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY

SKILLS NEEDS ANTICIPATION

WORKPLACE SKILLS AND SATISFACTION SURVEY (HEALTH SECTOR)

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List of Abbreviations

4IR	Fourth Industrial Revolution
AHMOPI	Association of Health Maintenance Organizations of the Philippines, Inc.
AO	Administrative Order
AWOL	Absence Without Leave
DOH	Department of Health
DOLE	Department of Labor and Employment
ESS	Employer Skills Survey
HIMAP	Healthcare Information Management Association of the Philippines
HIMS	Health Information Management Services
HMO	Health Maintenance Organization
HR	Human Resource
HRH	Human Resources for Health
ICT	Information and Communication Technologies
ILO	International Labour Organization
IRR	Implementing Rules and Regulations
IT-BPM	Information Technology and Business Process Management
IT-BPO	Information Technology Business Process Outsourcing
LGU	Local Government Unit
LMI	Labor Market Information
NCR	National Capital Region
NTESDP	National Technical Education and Skills Development Plan
PHA	Philippine Hospital Association
PHAPi	Private Hospitals Association of the Philippines
PSA	Philippine Statistics Authority
PSCED	Philippine Standard Classification of Education
PSOC	Philippine Standard Occupational Classification
SETG	Study on the Employability of TVET Graduates

SNA	Skills Needs Anticipation
TechVoc	Technical Vocational
TESDA	Technical Education and Skills Development Authority
TR	Training Regulation
TVET	Technical-Vocational Education and Training
UHC	Universal Health Care
USAID	United States Agency for International Development
WHO	World Health Organization
WSS	Workplace Skills and Satisfaction

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EXECUTIVE SUMMARY

The government together with the private sector had been pushing for the improvement of the Philippine health sector. With the continuous implementation of the Universal Health Care (UHC) Act and the prioritization of strengthening the country's health system in the Philippine Development Plan 2023-2028, the changes in the health system are expected to impact the nature and delivery of health services. Moreover, the disruptions caused by the COVID-19 pandemic to economic activities further highlighted the critical role of having an effective health system as well as sufficient and skilled health workers for the pandemic response.

Under the mentioned circumstances, it is expected that the labor market will be affected, particularly due to new jobs generated and the new set of skills and competencies needed. As such, developing appropriate policies and education and training interventions will require the examination of the current situation and the future direction through skills anticipation. The Skills Needs Anticipation through the Workplace Skills and Satisfaction (SNA-WSS) Survey will complement the aims of the National Human Resources for Health (HRH) Master Plan 2020-2040 and the various Technical-Vocational Education and Training (TVET) initiatives of the Technical Education and Skills Development Authority (TESDA) as guided by the National Technical Education and Skills Development Plan (NTESDP).

Methodology

- A descriptive cross-sectional design was used to characterize the variables involved in the study. Following this, probability sampling was employed to capture various representatives of the population. Particularly, stratified random sampling was used to identify the sample size per subsector, and circular systematic sampling to select the actual respondents who will participate in the study.
- The SNA Manual developed by TESDA with the technical assistance of the International Labour Organization (ILO) served as a basis in the development of the survey questionnaire.
- The questionnaire is subdivided into 12 sections: (1) Profile of the company, (2) Basic organizational background, (3) Critical human resources, (4) Skills in your business, (5) Emerging skills associated with industry developments, (6) Green jobs and the health sector, (7) Learning and development, (8) Work and employment practice, (9) Business strategy, (10) Work processes and technology, (11) Organizational performance, and (12) Workforce matters.
- Respondents were sampled from the 657 health facilities and supporting service companies of the various associations/organizations and government agencies namely the Department of Health - Primary Care Worker Team, Private Hospitals Association of the Philippines (PHAPi), Philippine Hospital Association (PHA), Association of Health Maintenance Organizations of the Philippines, Inc. (AHMOPI), and Healthcare Information Management Association of the Philippines (HIMAP).

- The following subsectors were considered as the strata based on the different levels of care and support: (1) Primary Care Facilities, (2) Health Care Facilities, and (3) Supporting Services. The Health Care Facilities were subdivided into four classifications following DOH Administrative Order No. 2012-0012: (1) Health Care Facilities - General Level 1, (2) Health Care Facilities - General Level 2, (3) Health Care Facilities - General Level 3, and (4) Health Care Facilities - Specialty. Supporting Services, on the other hand, were also subdivided as follows: (1) Supporting Services - Finance (Health Maintenance Organization), (2) Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers), and (3) Supporting Services - Health Information Management Services (Healthcare IT Providers). In total, eight subsectors were involved in the survey.
- Further, in computing the sample size for the eight subsectors, the type of ownership was considered including (1) Private, (2) Government, and (3) DOH Hospitals. Additionally, the three regions with the most number of health facilities per type of ownership were included to reduce the sample size since resources are limited (i.e. limited time and enumerators).
- A substitution replacement was applied to the sampled units, using the developed guidelines in cases where the enumerators had difficulty contacting or obtaining cooperation. However, when all or almost all information of the sampled respondent is missing or cannot be found through various methods or the respondent declined participation, substitution is not applicable and treated as a nonresponse error.
- The survey yielded a final sample size of 382 facilities.
- The survey was either self-administered via an online survey or researcher/enumerator-administered via a Zoom interview. In both cases, the Jotform version of the questionnaire was utilized. Additionally, to prevent incomplete or invalid responses, participants who opt for the self-administered survey were contacted as necessary.
- For the proper implementation and standardization of the survey, the survey guide and JotForm guide were developed and disseminated to the participating facilities/supporting service companies. The documents contain necessary reminders to help respondents navigate through the survey platform and the questionnaire.
- The survey was conducted from October to November 2021.
- The survey collected data on 52 participating facilities. No responses were received from 2 out of the 8 subsectors namely Health Care Facility - Specialty and Supporting Services - Health Information Management Services (Healthcare IT Providers). Five of the 52 facilities were surveyed via a Zoom interview.
- The validated responses were used to generate tabulations and correlate various indices.

Highlights of the Result of Study

1. Profile of the Health Sector
    - Most of the employees are classified as health management and support personnel. However, it should be noted that the majority of the jobs in this occupational type covered the subsectors of the supporting service that had a 100% response rate.
    - All the occupational types are represented across all subsectors, except in Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers) that do not have any employees referred to as Personal Service and Personal Care Workers.
    - In terms of employment status, employees are dispersed in terms of employment status, with the highest percentage (38.41%) of employees working full-time permanently while the lowest percentage (14.90%) are working part-time. The data is consistent for the most part when distributed per subsector.
    - Regarding the sex distribution of the employees, the lowest percentage is in the Health Care Facility - General Level 2 subsector at 37.28%. Although despite having the lowest percentage, most of the subsectors have close to or more than half of their employees as females. The results are consistent with various reports showing the good representation of women in the health sector.
    - In terms of the highest educational attainment, the majority (70.89%) of the employees are college-level graduates followed by college undergraduate employees at 6.73%. This pattern can also be seen in half of the subsectors that participated in the study namely Health Care Facility-General Level 2 Hospitals, Finance (HMO), and HIMS (Clinical and Documentation Service Providers). Only Primary Care Services and HIMS (Clinical and Documentation Service Providers) do not have employees that are either techvoc graduate or undergraduate.
    - The percentage of employees is decreasing as the age group increases — a pattern that is consistent with the distribution of employees across all subsectors. The largest percentage of the employees belong to the age group of 18 to 34 years old which covers the millennial and Gen Z population. For employers, understanding the composition of their workforce may be beneficial in determining employee motivations and understanding work attitudes and behavior.
    - Considering the nature and scope of the subsector (inclusion of government-owned facilities), 12 out of 52 health facilities/supporting service companies are part of a larger multinational organization; with the primary care facility subsector as the only subsector not engaged with multinational organizations. The main offices of multinational facilities/companies are either located in the Philippines or in the United States of America.
    - For the majority of the subsectors, whether private or government-owned facilities, the highest percentage of employees are

compensated above minimum wage to less than PhP 26,000 monthly gross, although only representing almost half (46.22%) of the distribution.

- Although the distribution between those earning above minimum wage to less than PhP 26,000 and PhP 26,000 to less than Php 50,000 only deviated by 2.21%, one of the government hospitals interviewed for this study expressed that government hospitals have indeed, higher salaries for staff compared to private hospitals.
- In most subsectors, there were only less than 10% of employees promoted to managerial and supervisory positions. All of the subsectors' facilities have promoted employees, except for Health Care Facility - General Level 1 with three facilities (13.64%) who responded that no employees had been promoted to managers and supervisors in 2021.
- Health facilities/supporting service companies have varying policies covering the specified documents. Notably, the percentage of the training plan (90.38%) exceeds other documents, followed by the training budget and staff development policy/plan, both of which are implemented in 88.46% of the facilities.
- When asked to rate various business approaches, the highest percentage of privately-owned facilities (46.43%) agree that compared to other facilities in the health sector, the competitive success of their products/services is dependent on price in the vast majority of cases. Meanwhile, the highest percentage of the Government-Owned facilities (41.67%) agree that there is a 'more-than-average' amount of customization in their products and services. The responses reflect two critical components in the healthcare industry: (1) affordability, and (2) excellent service.
- When it comes to the core equipment condition, the majority of the facilities across the subsectors have up-to-date core equipment. When compared to those in other countries, however, the distribution varies. Relative to the varied distribution, the majority of the subsectors are moving towards the acquisition of the latest machines and equipment as part of the expansion.
- Only supporting service companies and one-third of primary care facilities have up-to-date core equipment when compared to other countries. Additionally, Health Care Facility - General 1 is the only subsector in which a percentage of facilities are more than 5 years behind in technology even when compared to those available in the country.
- In terms of the outcomes rating from 2020 to 2021, outcomes differ depending on the type of ownership. For instance, other government-owned facilities have determined that none of the three outcomes (profitability, total sales/revenue, and market share) apply to them. For private facilities and DOH hospitals, the highest percentage of facilities experienced decreased profitability while maintaining a constant market share. On the other hand, the increase in total

sales/revenue was only experienced by other government-owned facilities.

- In terms of expansion, the majority of the facilities in most subsectors intend to expand on other areas of development specifically on the following areas: (1) infrastructure development and equipment acquisition; (2) quality of services; (3) provision of additional services; (4) program/course accreditation and learning and development support; (5) and geographical expansion.

2. Recruitment in the Health Sector
    - For the recruitment conducted in 2021, the majority (78.49%) of the vacancies in the facilities require college graduates, followed by college undergraduate qualification at 5.74%. This is true for all the subsectors, specifically for Finance (HMO) which requires most of the employees to be college graduates.
    - In terms of technical-vocational education, only 1.12% of the facilities have vacancies to be filled by a TechVoc undergraduate and 3.73% by a TechVoc graduate.
    - The low representation of junior and senior high school graduates may be attributed to the country's old educational curriculum.
    - By policy, 86.54% of the health facilities/supporting service companies require a college degree for more than half of the existing job positions; 65.38% of the participating facilities indicated that in more than half of the job positions, continuous learning or development activities are required.
    - However, for 23.08% of the respondents a Technical Vocational Certificate or National Certificate is not required for their existing positions. In fact, for the Supporting Services - HIMS (Clinical and Documentation Service Providers) subsector, no facility has positions requiring a National Certificate.

3. Attrition in the Health Sector
    - Majority of the subsectors' facilities have skills/jobs which are hard to fill (i.e. jobs that have been unfilled in the last six months). In the case of the Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers) subsector, all of their facilities have hard-to-fill positions.
    - The most common hard-to-fill skills that are applicable to most subsectors are in the Health and Teaching and Other Professionals category. Some examples include pharmacists, Primary Care physicians, and Graphic Artists.
    - Other most common hard-to-fill occupations include 2D Echocardiography Technician, Medical Doctor, Accounts Officer, Biomedical/Medical Equipment Technician, Call Taker, Data Controller, Dentist, Dialysis Nurse, Staff Nurse, Emergency Medical - Advance, and Medical Coding and Billing.

- Besides the jobs listed in the survey, Senior Clinical Specialist is also cited as one of the hard-to-fill jobs by a HIMS (Clinical and Documentation Service Providers) facility.
- When linked to the educational requirements for new entrants, most of the hard-to-fill jobs require college-level education. Yet, some of the jobs such as call taker and clinical assistant may also not necessarily require a bachelor's degree to do the job.
- Among the subsectors, only the Primary Care Facility reports no fast turnover while most of the other subsectors have less than half of its facilities reporting to experience a high attrition rate (i.e. the facility is experiencing difficulty in retaining employees for more than six months). When data is presented per occupational type, the majority of those with fast turnover is health associate professionals while professional services managers and supervisor constitute the lowest percentage.
- Particularly, call center personnel, IT technical support personnel, and HR recruitment personnel were identified by a facility as difficult to retain.
- For privately owned facilities or companies, the geographical location of the firm and poaching are the main reasons for fast turnover, while lack of career prospects got the highest percentage for government-owned health facilities.
- Interestingly, the lack of access to training received the highest percentage at 33.33% for DOH hospitals despite the training programs that are directly managed by the agency.
- Other cited reasons include COVID-19-related concerns, employment opportunities, and family matters.
- Most employees leave their jobs due to resignation (77.10%) which is true for all subsectors except in Primary Care Facilities where all of the employee separations are caused by end of the contract.
- Employees resign due to reasons related to career growth/employment and financial aspect. For instance, all subsectors generally share the desire to pursue greener pastures for career growth, move jobs or change careers for a higher salary or compensation as reasons. Besides these, many of the respondents cited COVID-19-related concerns such as fear to contract the virus or spread it to loved ones. In the United States, this was referred to as the Great Resignation; although the Philippines is still considered a labor surplus economy.
- Less than 10% of the current employees would be difficult to replace within three months of resignation for the majority of the supporting services companies; for at least half of the facilities in Health Care Facility - General Level 2 and Level 3, they will experience trouble replacing more than 50% of their current employees.
- Across the subsectors, the most common positions that may difficult to be filled upon employee resignation are doctors, nurses (e.g. dialysis, specialized care, clinic/company), and computer and IT-related jobs (e.g. programmers, encoders, developers). These jobs are

categorized as Health and Teaching and Other Professionals, and Health Management and Support Personnel.

4. Performance of Employees
    - The majority (59.70%) of the participating facilities identified their employees as able to perform the job but not beyond and this is true for all of the subsectors. However, some (34.26%) of the employees have the potential to perform more demanding duties than they currently have as mostly represented by the Supporting Services - Finance (HMO) and Health Care Facility General Level 2 subsectors.
    - As for the employees with the potential to perform more demanding duties, all of the facilities in three subsectors, namely Primary Care Facility, Health Care Facility - General Level 3, and Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers), have undertaken actions or interventions.
    - Consequently, the majority to all of the facilities from these three subsectors have policies covering business plans, training plans, training budgets, staff development policies/plans, and the development of high-potential staff.
    - In terms of statements such as supporting non-job-related training, employees having their say in their training needs, provision of training that is only required by the job, and training that covers future skills needs, most subsectors still agree, although some facilities answered “neutral” or “disagree”.
    - The results show that there are only a few (6.03%) underperforming employees. When the reasons for underperformance are disaggregated by the type of ownership, privately-owned facilities commonly attributed the lack of socio-emotional skills (71.43%) while for half of the government-owned facilities, employees are unable to perform their job due to several reasons such as lack of basic healthcare-related skills, language, and digital skills.
    - As such, it may be presumed that to at least perform the given duties, the mentioned skills (e.g. socio-emotional skills, language) will be needed on top of possessing the technical skills.
    - The respondents were asked to rate their employees’ behavior in terms of going above and beyond the call of duty without being asked, taking up the duties of a colleague without being asked, regularly putting in more hours than contractually expected, and making helpful suggestions for improving the operation within the organization. Based on the survey results, the highest percentage of facilities have 10% to 50% of their employees exhibiting the behaviors. This is true for all of the mentioned behaviors, except for employees regularly putting in more hours than contractually expected into their jobs as this is exhibited by more than half of the employees.

5. Current and Future Skills Demand
    - Despite the disruptions brought by the COVID-19 pandemic, the employee size for 51.92% of the participating facilities increased, 32.69% decreased, and the remaining 15.39% remained constant.
    - Per subsector, it is interesting to note that all the facilities under the Supporting Services - HIMS (Clinical and Documentation Service Providers) experienced an increase in employee size, while many Health Care Facility - General Level 2 suffered a decrease, and Primary Care Facilities equally decreased, stayed the same, and increase (33.33%).
    - On another note, the majority (69.23%) of the participating employees are expecting to increase the number of their employees in 2022, 23.08% will remain constant, and the remaining 7.69% is expecting a decrease.
    - Only Health Care Facility - General Level 1 and Level 3 have an expected decrease in the number of employees, meaning no additional employees will be needed in 2022. Most of the remaining subsectors are expected to significantly increase their employee size, with all the facilities of the Supporting Services - HIMS (Clinical and Documentation Service Providers) expecting an increase.
    - The 16% of the listed skills/jobs were identified by most of the facilities as not applicable. Among these, the majority are Health Associate Professionals. This occupational type include those that already have existing Training Regulations namely Prostethic Technician and Orthotic Technician.
    - When it comes to skills supply, half of those that are projected to have no change for more than 60% of the facilities are in Health Management and Support Personnel: administrative officer, administrative assistant, purchasing staff, medical coding and billing, social welfare managers, human resource officers, and data encoders.
    - Staff nurse is projected to have the highest shortage at 55.10%, followed by a professional nurse (54%), and a medical technologist (36.73%). The results are consistent with related studies and reports indicating the shortage of nurses expected in the coming years.
    - In cases where there is a surplus in the skills/job, it only accounts for 2% to 4% of all responding facilities.
    - Jobs that have the highest shortage in skills supply (staff nurse, professional nurse, and medical technologist) can all be addressed by TVET according to some 37% to 54% of the participating facilities. However, it may also be observed that the jobs that are most addressable by TVET programs like seamstress, warehouseman/warehouse aide, and ambulance driver are usually projected by facilities to either stay the same or inapplicable.
    - Interestingly, even the skills needs/requirements of those jobs that require a higher degree (e.g. Master's or Doctorate) such as medical chiefs and specialty doctors (e.g. surgeon, gynecologist) are still perceived by some facilities as addressable by TVET programs. The results of this survey are consistent with TESDA's recent Study on the

Employability of TVET Graduates (SETG) which revealed the changing profile of TVET graduates.

- Still, the majority of the facilities who participated in the survey maintained that high-value services such as the mentioned medical chiefs (e.g. chief of the hospital) do not have skills needs or requirements that can be addressed by TVET institutions since these jobs require higher learning.

6. Emerging Skills Associated with Industry Developments in the Health Sector
    - Among the emerging skills needed in the next five years that are associated with the Fourth Industrial Revolution (4IR) and the New Normal, only nanotechnology was deemed not applicable by the majority of healthcare facilities and support services companies.
    - For most of the skills which are applicable, more skills will be demanded including electronic medical records management, health information system navigation and management, and telehealth/telemedicine.
    - Some emerging skills identified previously during the industry consultations were reiterated in this study including the use of cloud environments and other online/digital communication tools, computer literacy, psychological first aid, basic counseling, telenutrition/teleconsultation, robotics, innovation, and adaptability.
    - The facilities were also able to identify various other emerging skills including soft skills (adaptability, flexibility, complex problem solving, negotiation, etc.), digital/IT-related skills (cloud technology, computer skills, telerecruitment, remote work, etc.), and science-related (biochemistry, vaccine mix, and match, medical research, etc.).
    - Majority of the facilities for most subsectors are ready for the emerging skills except for Health Care Facility - General Level 1 and Level 2. Regardless of the type of ownership, the majority of the health facilities/supporting service companies are prepared for the emerging skills.
    - Regardless of the type of ownership, the majority of the facilities that are aware of and ready for the emerging skills associated with industry developments have already taken action. Notably, all DOH hospitals stated that they have established plans to address the requirements, started some initiatives/programs related to the training and development of the human resources, and acquired equipment and materials relevant to the requirements.
    - For 7.69% of the facilities that have not made any preparations yet. For those who did prepare their human resources, most (91.67%) re-tool/upskill existing employees to acquire the required competencies.

7. Green Jobs in the Health Sector
    - The extent to which various aspects of green jobs are implemented varies by facility. The majority of those who have created or changed some jobs have done so to help in minimizing waste and pollution.

Whereas, 44.44% of the facilities have not taken any action yet to help with decarbonization but intend to do so.

- Energy conservation, sewerage plant, and waste management including segregation, recycling, and disposal of wastes and other materials, are common provisions implemented by facilities that have stated that they have plans or have begun to modify or create green jobs.
- In terms of DOH requirements, the Health Care Facility - General Level 2 facility stated that they are in the early stages of developing a plan to rebuild existing infrastructures in areas that conform to the provisions of green hospitals.
- Only 4 out of the 6 subsectors have facilities that made use of the tax incentives/import duty exemption programs, with the Health Care Facility - General Level 2 utilizing it the most.
- Also 4 out of 6 subsectors sought or received assistance from government agencies, with DENR being the most common among the agencies mentioned.
- Among the subsectors, only 11.11% to 33.33% of the facilities are aware of the emerging skills resulting from green jobs. The common emerging skill identified is waste management (e.g. hospital and hazardous wastes). Other emerging jobs in place to aid in the greening of the industry includes pollution control officer, safety officer, solar photovoltaic installers, wind turbine specialists, and hydropower technicians.
- The majority of the facilities/companies have business needs in terms of knowledge across the various "green" industry developments, with the exception of hospital waste management (proper segregation, recycling, reuse, and disposal) and safe pharmaceutical management and disposal, which have business needs in skills and competencies, respectively.
- Reprocessing programs have the highest percentage (40%) among "green" industry developments that facilities identified as not having any business needs.
- Moreover, one of the respondents also added biohazard in the other green industry development, citing knowledge as an area for business needs.

8. Policies/Programs for the Employees in the Health Sector
    - Not all the facilities have a career or structured succession planning policies/practices in place for the current and future development of employees. One of the participating facility (11.11%) under the Supporting Services - Finance (HMO) responded none.
    - The highest percentage of those facilities that do have career/structured succession planning policies/practices are in Health Care Facility - General Level 3 and Supporting Services - HIMS (Clinical and Documentation Service Providers) where for at least half of the facilities, more than 50% of the employees receive support.

- For the employees who are unable to perform their jobs, the regular action taken in privately-owned facilities is appraisal or performance reviews. For DOH hospitals, it is the conduct of mentoring and adding staff to complement the work, whereas for government-owned facilities it is through the conduct of mentoring and intensifying supervision of staff.
- Whereas, for facilities that have high-performing employees (i.e. those who have the potential to perform more demanding duties than they currently have), most have already taken actions to utilize their employees. The actions taken can be summarized into three recurring categories: (1) learning and development programs; (2) job reassignments; and (3) promotion and other incentives.
- The majority, if not all, of the facilities provide the majority of their full-time employees pay-related and non-pay benefits regardless of the ownership type.
- Oportunities for job rotation at other locations (including overseas) got the least percentage among all the specified benefits.
- It shall be noted that the benefits available to employees may be affected by the nature of ownership. For instance, some may not be applicable to government-owned facilities like share options.

9. Performance of TVET Graduates and/or TVET Certified Employees
    - In general, 50% of the health facilities/ supporting service companies do not have TVET graduate employees, while 46.15% do not have TVET certified employees.
    - Out of the six subsectors, only Primary Care Facility do not have TVET Graduate and TVET Certified employees. However, majority of the facilities in the two other subsectors namely Health Care Facility - General Level 1, and Supporting Services - HIMS (Clinical and Documentation Service Providers), also do not have TVET graduates at the time of the survey.
    - Among the participating facilities that have employees who are TVET graduates and certified, 88% and 92.85% respectively, have given a satisfactory rating.

Recommendations

1. Review of the trainee entry requirements vis-a-vis industry requirements and in reference to the guidelines of the relevant government agencies to ensure the recognition and employability of the workers — depending on the workforce characteristics whether existing workers, new entrants, or career shifters. Thus, the need to establish a national framework for the upskilling and reskilling of the health workers including those with higher educational qualification (baccalaureate degrees and above).

Areas of Concern	Recommendation
Entry requirements	● Review the trainee entry requirements of the TVET programs vis-a-vis the industry requirement to ensure the employability of the graduates.
Perceived lack of practical and technical skills of some graduates needed to be employable	· Implementation of microcredential programs (nano-degrees, badges, or stackable micro-degrees referring to short courses recognized by the industry · Focus on developing higher level programs based on existing DOH staffing patterns and industry demand to ensure learning progression and career pathways. · Establish a framework for the upskilling and reskilling of the health workers with higher educational qualification (baccalaureate degrees and above)
Occupations that require baccalaureate degrees	● TESDA may endorse to the Commission on Higher Education the occupations/qualifications for necessary interventions (e.g. curriculum review of health-related courses)
Occupations under TVET	Shall be evaluated to recommend appropriate programs to be developed

2. As skills utilization in the workplace is drawn from the presumption that skilled talent is available, the academe, private sector, and educational institutions like TESDA, may extend assistance to the industry for the conduct of learning and development programs (i.e upskilling and reskilling programs) through scholarship provisions. A strong collaboration with the established industry associations for the conduct of these upskilling and reskilling program, including the establishment of a Industry TVET Board, will be critical for the operationalization of developing skilled talent.

3. Develop new Competency Standards or Training Regulations to fit the technical requirements of the Health Sector in consideration of critical factors namely qualification guidelines on naming convention, pathways and career progression,

and the Department of Health's staffing requirements.

Occupational Type	For Training Regulations Development		
	Priority 1	**Priority 2**	**Remarks**
Health and Teaching Professionals	Respiratory-Therapy Services		TESDA Board Resolution No. 2010-20
	Practical Nursing		TESDA Board Resolution No. 2007-011
Health Associate Professionals		Medical X-ray Equipment Operation	TESDA Board Resolution No. 2007-011

Occupational Type	For Competency Standards Development	
	Priority 1	**Priority 2**
Health Associate Professionals	Safety Officer	Mechanical Ventilator Technician
	Emergency Medical Technician - Paramedic	Ward Assistant
	2D Echocardiography Technician	Laboratory Aide
		Health/Sanitary Inspector
		Clinic Assistant
		Ambulance Quality Assurance
Personal Service and Personal Care Workers		Birth Assistant
Health Management and Support Personnel	Swabber	Call Taker
	MIS Technical Support	Barangay Nutrition Action Officer
	IT Supervisor	
	IT Assistant Supervisor	

a. List of Emerging Requirements

Common in four subsectors	○ Data Science and Analytics ○ Data Management and Governance ○ Artificial Intelligence and Machine Learning

	○ Social Science Research ○ Digital Marketing and Strategy ○ Clinical Research ○ Psychological First Aid
Common in five subsectors	○ Environmental and Occupational Health and Hygiene ○ Information Security ○ Remote Patient Monitoring ○ Health Surveillance and Monitoring ○ Complex Information Processing and Interpretation ○ Technology Use for Disease Prevention and Control
Common in six subsectors	○ Health Information System Navigation and Management ○ Electronic Medical Records Management ○ Telemedicine/Telehealth

4. Expand the needed health-related infrastructure including modern technologies and equipment particularly as the majority of the subsectors are reporting its move towards acquiring latest machines and equipment. Moreover, training, assessment and certification infrastructure shall also be strengthened such as the review and updating of the existing TVET programs in view of new industry developments, review of implementation, capacity-building for trainers and competency assessors to name some, to ensure the readiness of the program graduates in the health sector.

5. Review the identified specialized and advanced technical skills, socio-emotional skills, soft skills, as well as digital skills in view of the embedded competencies in the existing TRs, implementation and training delivery, and new program development. With the global pandemic shifting many of the processes online, strengthening the health care worker's digital skills is necessary to ensure the readiness of the workforce.

6. Popularize and promote green occupations, and prepare the workforce with needed green competencies in compliance with the Republic Act No. 10771 or the Philippine Green Jobs Act of 2016. With the new DOH direction towards greening the sector, in view of their published Green Manual, it is critical to ensure that green competencies are embedded in the Training Regulations and Competency Standards, conduct intensive human resource training and capability building, and meeting the emerging requirements.

7. Push for the salary standardization, as a form of financial incentive, to address the shortage in the talent supply and as a means to explore ways on increasing employee engagement for the workers to consider longer commitments.

8. Pursue the dialogue between TESDA, the industry, and the relevant government agencies regarding the acceptability and recognition of TVET graduate and

TVET-certified employees. To facilitate this, the establishment of an Industry TVET Board is recommended to foster collaboration which will cover the identification of skills requirements, review and development of TVET programs, and implementation of the programs aligned with the industry needs.

a. Considering this, the following are the specific recommendations to the Department of Health and the Industry:

    i. Review of the occupations and establish a clearer picture of where TVET can come in to supplement the needs of the workforce in the health industry
    ii. Support the implementation of the programs determined to be addressable by TVET
    iii. Establish a clear reference and framework of the progression pattern in collaboration with the DOH, educational agencies, and recognized by the industry associations

9. For the industry and relevant government agencies like the DOH, it is recommended to strengthen and further the accessibility of quality health care as almost half of the privately-owned facilities agree that the competitive success of their service is dependent on price in the vast majority of cases. This may reflect that costs/affordability is a critical factor for an individual to access healthcare services.

CHAPTER 1
INTRODUCTION

Based on the ranking of the International Labour Organization (ILO), human health and social work are among the sectors identified to have low risk regarding the impact of the crisis on the economic output of various sectors (International Labour Organization, 2020).

Yet, despite the COVID-19 pandemic keeping the high demand for healthcare workers, the situation has undeniably highlighted the existing challenges in the health sector and its labor force. Despite the low economic risk, health workers face the highest risk in terms of contracting the COVID-19 virus, and the issues surrounding safety, wages, benefits, and well-being were tackled. The pandemic also revealed how the adoption of digital technologies may immeasurably change the provision of health services, which evolved as a result of the Fourth Industrial Revolution (4IR) and the new normal. Telemedicine and telecounseling became the new norm.

Thus, with the impact of the COVID-19 pandemic, the updated Philippine Development Plan (PDP) 2017-2022 was geared towards the prioritization of the health and resiliency of Filipinos, being the foundation of the *Ambisyon Natin 2040* Vision (National Economic and Development Authority, 2021). Whereas, the launched PDP 2023-2028 highlighted four pillars as part of the strategy to boost health namely 1) Social determinants of health improved; 2) Healthy choices and behavior enabled; 3) Access, quality, and efficiency of health care improved; and 4) Health systems strengthened (National Economic and Development Authority, 2023).

One of the specific outcomes under the third pillar is improving governance for human capital development, which includes the harmonization of the trifocalized systems of education for lifelong learning; key legislations particularly in promoting the upskilling and reskilling of the labor force was considered essential to achieve these outcomes (National Economic and Development Authority, 2023).

Further, in terms of employment opportunities, the National Technical Education and Skills Development Plan (NTESDP) 2018-2022 reported that employment in the Health and Social Work has an annual growth rate of 3.2%, rising steadily from 372,000 in 2005 to 502,000 in 2016 (Technical Education and Skills Development Authority, 2018). Additionally, the health industry is expected to be a major economic contributor to employment generation, especially given the global and national health crisis.

Besides the pandemic, the climate change crisis has spawned extreme disasters and rising temperature conditions. Hence, as more people are falling victim to the aforementioned effects of the climate change crisis, the demand for workers in the health sector continues to rise further (Technical Education and Skills Development Authority, 2021).

Now with the foreseen demand for healthcare workers and the impact of digitalization, Baur, Yew, and Xin (2021) revealed that Asia is moving towards a more “consumer-centric digital health ecosystems...at unprecedented speed and scale”. As Asia is home to about half of the global internet users, with the Philippines topping in internet usage (Chua, 2021), the future of healthcare is a personalized system enabled by human-machine interaction.

Unfortunately, despite the aforementioned projection, as well as the climate change crisis, the health industry still faces challenges in terms of the number of healthcare workers. For instance, due to higher compensation abroad or in other sectors such as uniformed services and Information Technology Business Process Outsourcing (IT-BPO), as well as the high health risks caused by COVID-19, hospitals are experiencing a shortage of nurses. Mental health professionals are also lacking and even personnel providing support services such as biomedical equipment technicians are facing the same challenges.

Other than problems in quantity, the health industry also faced the following challenges, as shared during the scoping for the industry (Technical Education and Skills Development Authority, 2021):

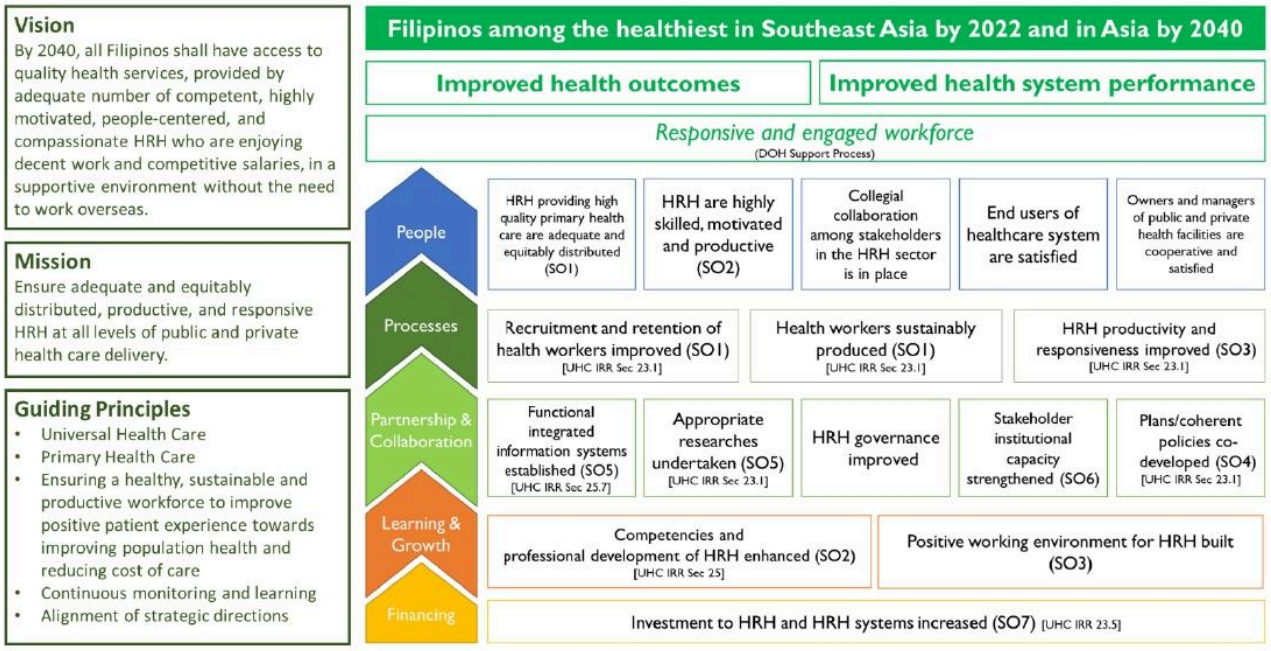
- Issues regarding the quality of personnel
- Existence of hard-to-fill occupations
- Lack of Information and Communication Technologies (ICT) skills/ basic and advanced technological know-how
- Shortage of workers with the required licenses, education, and training
- Lack of certifications
- Skills mismatches

Thus, developing appropriate policies and measures in light of these developments would require an examination of the current situation and the future direction of the labor market vis-à-vis skills needs, jobs, and learning needs.

For 2021, TESDA used its experiences in the Skills Needs Anticipation (SNA) study through the Workplace Skills and Satisfaction (WSS) Survey piloted in 2019 and 2020 as a benchmark for the conduct of the survey for the Health and Logistics Sector. Both sectors are among the identified priority sectors in the NTESDP 2018-2022, as well as in the TESDA Operation Abot Lahat.

The results of the survey for the Health sector will complement the aims of the National Human Resources for Health (HRH) Master Plan 2020-2040 in reassessing the health workforce and determining the appropriate interventions in education and training (Department of Health, 2020). The Masterplan was developed by the Department of Health (DOH) with support from the United States Agency for International Development (USAID) and the World Health Organization (WHO).

Figure 1
HRH Masterplan 2020-2040 Results Framework



Source. HRH Philippine Masterplan 2020-2040

1.1. Objectives of the Study

The result of the SNA-WSS Survey aims to provide information to Technical-Vocational Education and Training (TVET) stakeholders about the employers' desired skills and competencies of its workers in the next five (5) years and beyond, job-skills mismatch, and the satisfaction of employers with TESDA graduates in response to meeting the requirements of the health industry.

Consequently, the results shall serve as the basis for the identification of actions that can be undertaken to address the requirements of the health sector, including the review and development of policies to improve and enhance the system. The specific objectives of the study are:

1. Identify emerging future skills;
2. Determine the satisfaction of employers on the competencies and performance of TVET graduates in the workplace;
3. Provide quantitative measures on skills (e.g. skills gaps, skills shortages, skills utilization in the workplace); and
4. Assess factors that are likely to impact skills use.

1.2. Scope and Limitations of the Study

Initially, this study aims to cover the health and wellness sector including the operation of wellness services such as hotel spas, therapeutic centers, and traditional and alternative healing. However, due to the lack of representation and industry commitment at the time of the survey, the study proceeded on focusing on the health industry alone, alongside some of the supporting services.

To cover the different levels of care in the health sector, the survey population was obtained from the databases provided by the following partner associations/organizations and government agencies:

- Department of Health - Primary Care Worker Team;
- Private Hospitals Association of the Philippines (PHAPi);
- Philippine Hospital Association (PHA);
- Association of Health Maintenance Organizations of the Philippines, Inc. (AHMOPI); and
- Healthcare Information Management Association of the Philippines (HIMAP)

As recommended during the WSS scoping meeting, the survey respondents will be obtained based on the type of health facilities reflecting different levels of care and supporting services.

The three main categories/subsectors for the level of care/support to be included in the study are:

1. Primary Care Facilities;
2. Health Care Facilities; and
3. Supporting Services

The health care facilities and supporting services are further categorized based on the scope and nature of services as discussed in the succeeding subsections, but in summary, eight subsectors were included in the survey:

1. Primary Care Facilities
2. Health Care Facilities - General Level 1
3. Health Care Facilities - General Level 2
4. Health Care Facilities - General Level 3
5. Health Care Facilities - Specialty
6. Supporting Services - Finance (Health Maintenance Organization)
7. Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)
8. Supporting Services - Health Information Management Services (Healthcare IT Providers)

Moreover, the categories are further subdivided according to the type of ownership:

1. Private - “owned, established and operated with funds through donation, principal, investment or other means by any individual, corporation, association or organization” (Department of Health Administrative Order 2012-0012, 2012)
2. Government - “created by law” that may be under the national government, Local Government Unit (LGU), or other national government agencies (Department of Health Administrative Order 2012-0012, 2012)

However, for this study, DOH Hospitals will be separated from government hospitals. Executive Order No. 102 “Redirecting the Functions and Operation of the Department of Health” states that DOH shall “serve as the national technical authority on health” (Department of Health Executive Order No. 102, 1999). Additionally, Administrative Order No. 181 s. 2001, as cited in Bontile (2013), specifies the fiscal autonomy “with full income retention” and national government subsidy of the DOH hospitals. Thus, being directly supervised and managed by DOH, the DOH hospitals shall be a particular research interest.

Further, based on the provided databases, only the top three regions with the most number of health facilities per type of ownership were included in the list of respondents due to limited resources such as time and the number of enumerators. However, due to the nature of the supporting companies, whose operations are not limited to a single area or region, this category was excluded from the regional classification. For reference, below is the list showing the regions considered per category (Table 1).

Table 1

Distribution of the Sample per Category, Type of Ownership, and Region

Category	Type of Ownership	Region
Primary Care Facilities	Private	National Capital Region (NCR), III, IV-A
	Government	II, III, VI
Health Care Facilities/Hospitals	Private	NCR, III, IV-A
	Government	III, IV-A, VI
	DOH Hospitals	NCR, VII, IX
Supporting Services	Private	

To better describe the main categories of level of care/support, its scope, and limitations, a detailed description is provided in the succeeding subsections.

1.2.1 Primary Care Facility

Section 4.26.b of the Implementing Rules and Regulations (IRR) of Republic Act 11223, otherwise known as the UHC Act, defines primary care facility as a DOH-licensed or registered institution principally delivering primary care services. This includes Rural Health Units (RHU), Barangay Health Units (BHU), municipal and provincial health offices, and clinics that give the first level of care to patients before being referred to a specialist (Implementing Rules and Regulations of the Universal Health Care Act, 2019).

Only provisional certificates are being granted to primary care workers until December 2021. Thus, the respondents for the primary care facilities were taken from the list of facilities with Primary Care Workers (doctors, nurses, midwives) with DOH-issued provisional certificates.

According to the Joint Administrative Order No. 2020-01 "Guidelines on the Certification of Primary Care Workers for Universal Health Care", a Certification in Primary Care (CPC) shall serve as proof and requirement before a primary care facility can perform primary care service (Department of Health Joint Administrative Order No. 2020-01, 2020). The order covers all registered and PRC-licensed health professionals who are practicing in primary care facilities, affiliated with either private or government health facilities.

1.2.2 Health Care Facility

For this study, a health care facility refers to a health care institution that provides secondary and tertiary care, including the DOH's four specialty hospitals.

Table 2

Classification of Health Care Facility

Classification	Characteristic
General: Level 1 Hospital	Consulting specialists in, but not limited to Medicine, Pediatrics, OB-Gyne, Surgery; Emergency and outpatient services, isolation facilities, and surgical/maternity facilities.
General: Level 2 Hospital	All level 1 characteristic plus departmentalized clinical services, respiratory unit, general ICU, high-risk pregnancy unit, NICU, and dental clinic.
General: Level 3 Hospital	All level 1 and 2 characteristics plus teaching/training with at least two accredited residency programs for physicians in any medical/surgical specialty and/or subspecialty; physical medicine and rehabilitation unit, ambulatory surgical clinic, and dialysis clinic.
Specialty	A hospital that specializes in a particular disease or condition or one type of patient.

Note. Based on the DOH AO No. 2012-0012 entitled "Rules and Regulations Governing the New Classification of Hospitals and Other Health Facilities in the Philippines"

Provided time constraints and for further efficiency of the process, the subcategories under (1) Single Specialty or Multi-Specialty/Speciality Hospitals; and (2) the classification of other health facilities based on the DOH AO 2012-0012 were not considered in determining the sample.

Based on the type of ownership, members of PHAPi and PHA will serve as the universe of study for the private sector. PHA members shall also comprise the

universe of government hospitals. An important note to consider is that several hospitals are members of both PHA and PHAPi, thus, member facilities were only counted once.

As for the DOH hospitals, 64 out of the 66 DOH hospitals were considered, a majority of which (58%) are General Level 3 hospitals (DOH, 2020). The two hospitals will not be considered as one is categorized as an infirmary while the other is custodial psychiatric care.

Additionally, the four specialty hospitals operating in NCR as Government-Owned and-Controlled Corporations (GOCC) were included (DOH, 2020). Further, the renationalized, extension, and newly-created hospitals under the jurisdiction of DOH are excluded and shall serve as limitations of the study.

1.2.3 Supporting Services

To take into account the other organizations present during the scoping meeting who also expressed their commitment to the study, the supporting services have been added as a category. Although not specifically a health facility, companies under this category provide support that is cross-cutting from the primary to tertiary care facilities.

Although there are various support services in the health industry, including hospital maintenance, pharmaceutical service, and laundry services, only the following subcategories representing finance and Health Information Management Services (HIMS) will be considered:

1. Finance - Health Maintenance Organization (from members of the AHMOPI)
2. HIMS - Clinical and Documentation Service Providers (from members of the HIMAP)
3. HIMS - Healthcare IT Providers (from members of the HIMAP)

The other support services identified (e.g. hospital and equipment maintenance) will not be part of the sampling; However, these were still considered in the study, particularly on the identification of current and emerging skills.

Further, since there is an unresolved issue regarding the membership and appropriate categories of the Pacific Cross Philippines and the Pacific Cross Health Care, Inc., specifically as AHMOPI and HIMAP members, the company was not considered in the study.

As for the characteristics of the respondents, it shall be guided by the following parameters:

- Assume at least a senior position in the health facility/supporting service company, particularly any of the following:
    - Human Resource (HR) head or HR for personnel services;
    - HR for Professional Education Training and Research Office (PETRO) for General Level 3 and specialty hospitals or equivalent;

- Operations supervisor; or
- Owner in the case of small institutions (e.g. clinic).

However, collaborative efforts of multiple health facility/supporting service company employees are permitted.

CHAPTER 2
REVIEW OF RELATED LITERATURE

This chapter reviewed some of the research conducted and manuals published regarding SNA, particularly an Employer Skills Survey (ESS). The first subsection will provide insight into the importance of conducting an ESS or establishment survey,

the areas of interest in this type of study, and the critical information to be included in the survey.

What follows is a brief discussion on the results of the conducted SNA-WSS Survey for the Information Technology and Business Process Management (IT-BPM) and Construction Industries conducted by TESDA with the consultancy from ILO, PSRTI, and the Department of Labor and Employment-Institute for Labor Studies (DOLE-ILS). A part of the discussion is some of the key recommendations from the two studies particularly on improving the conduct of the future SNA-WSS.

Lastly, to give the readers a better understanding and appreciation of the results of this study, background regarding the health industry is provided. It includes information regarding economic growth, employment opportunities, emerging skills, and the expected reforms in health service delivery, with the enactment of the UHC Act and the development of the HRH Master Plan.

2.1 Background on Designing an Employer or Establishment Skills Survey

A research paper published in 2016 in the Inter-American Development Bank (IDB) reviewed pieces of evidence from the United Kingdom, other countries, and regions "that have long experience in developing ESS" (Hogarth, 2016). ESS is regarded as just one part of a larger, integrated labor market information system.

Although the research was originally intended to help countries in Latin America and the Caribbean, especially regarding the design of an effective and suitable survey, the results and insights from the paper are also useful for consideration in countries with no systematic approach yet to ESS.

According to Hogarth (2016), one of the important roles being played by ESS is its ability to demonstrate the skills demanded and evident shortages in the industry. CEDEFOP (2010 and 2015) as cited in Hogarth (2016) noted the gap in the demand and supply of skills in Europe, thereby increasing the concern for policymakers. This is particularly typical for Science, Technology, Engineering, and Math (STEM) subjects.

In terms of research interest, ESS aims to look at the skills demand, skills supply, employer or establishment's propensity to invest in training, employment status, wage levels, and educational attainment of workers. As implied, employers are the target respondents for this type of survey as they have a crucial role to play in determining job content and requirements, skills needs, and necessary qualifications and training, depending on industry demand.

Based on the conducted studies in Europe, the following are the core indicators recommended to be obtained from the survey (Hogarth, 2016):

- Characteristics of the workplace (e.g. total number of current employees including full time, part-time, permanent, part of a larger organization)
- Skills demand (e.g. number of employees by occupation, qualification level, wage level, vacancies)

- Skills supply (e.g. training to existing employees including training plan or budget, informal training activities; training to entry-level positions, external training market like the use of local training providers, and training costs)
- Skills imbalances (e.g. number of vacancies, hard-to-fill occupations, number of staff who are not fully competent and reasons, impact on future organizational performance)
- Product market position and organizational performance

In another related study, TESDA, with the consultancy from ILO, considered other countries' best practices in SNA, and conducted workplace skills and satisfaction surveys to develop the SNA Framework for Philippine TVET (Technical Education and Skills Development Authority, 2021). The survey is just one of the methodologies applied for the SNA, with the expected outcome of identifying the skills requirements of the sector. The recommended content of the questionnaire based on this manual is consistent with the core indicators found in similar studies in Europe.

Figure 2

Skills Needs Anticipation Framework

Methodology	Tool	Result
Survey	Workplace Skills and Satisfaction Survey Tool	Skills Requirement of the Sector
Industry Consultation	Guide Industry Questionnaire	
Secondary Data	Philippine Development Plan	
	Industry Roadmap	
	JobsFit	
	Studies related to the sector	

Note. Based on the TESDA SNA Manual

2.2 Results of the 2019 and 2020 TESDA SNA-WSS Survey

TESDA piloted the SNA-WSS Survey for the IT-BPM and Construction Industries. Based on the experiences of these two studies, the following were some of the recommendations to enhance the conduct of the study:

- Strengthen the partnerships and data sharing agreements with involved industry associations
- Explore other data collection techniques
- Include qualitative methodology and information on the skills requirements
- Improve skills assessment by including the effect of the COVID-19 pandemic

These recommendations were considered in the development of the questionnaire and the data collection strategies for the Health Sector.

2.3 Health Sector: An Overview

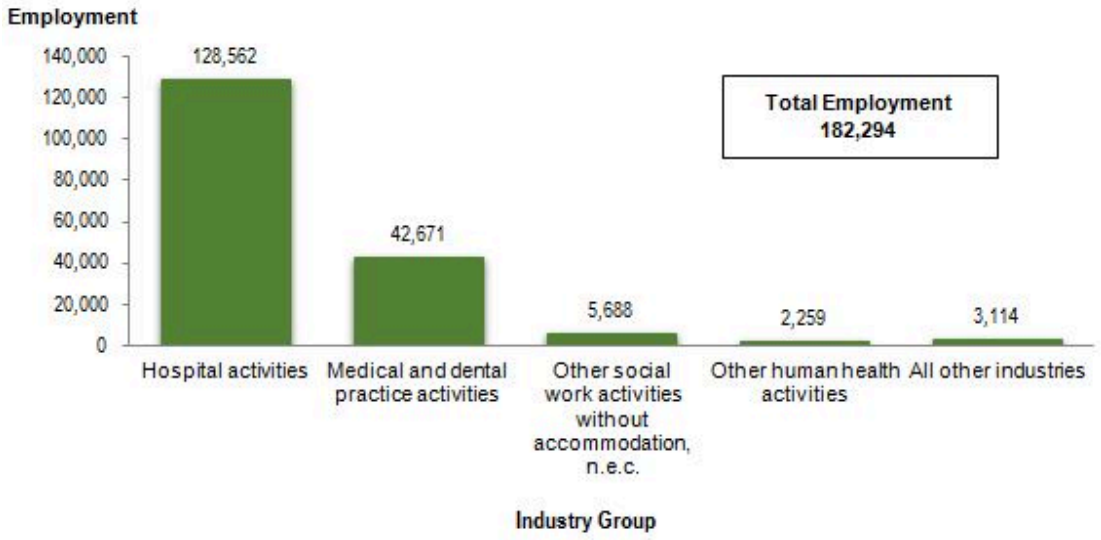
In terms of employment provision and income contribution, one of the main contributors to the Philippine economy is the health and wellness industry. It is included in the top 10 Key Employment Generators across all regions in the country, which is at par with the priority industries in the NTESDP 2018-2022, the Philippine Development Plan 2023-2028, *Ambisyon Natin* 2040, and the *Trabaho, Negosyo, at Kabuhayan* (TNK) Blueprint for Decent Employment and Entrepreneurship 2018-2022 of the Department of Trade and Industry (DTI).

According to the JobsFit 2022 Labor Market Information Report (Department of Labor and Employment-Bureau of Local Employment, 2019), the health and wellness industry covers medical facilities like primary, secondary, and tertiary hospitals, ambulatory clinics, hotel spas, therapeutic centers, and traditional and alternative healing and medical care services.

In terms of the number of establishments, the 2017 Annual Survey of Philippine Business and Industry (ASPBI) on Human Health and Social Work Activities reported that there is a total of 6,663 establishments in the industry in 2017, which is a (-18.4%) growth rate compared to the 8,170 establishments in 2016. Fortunately, the decrease in the number of establishments did not mean a decrease in employment opportunities (Philippine Statistics Authority, 2019).

In fact, employment showed a 1.9% growth rate (182,292 in 2017 vs 178,905 in 2016). Hospital activities reported the highest employment rate with an average of 116 workers per establishment, higher than the recorded average of the whole industry at 27 workers per establishment (Philippine Statistics Authority, 2019).

Figure 3
Distribution of Employment of All Human Health and Social Work Establishments by Industry Group: the Philippines, 2017



Source. 2017 Annual Survey of Philippine Business and Industry of the Philippine Statistics Authority

Meanwhile, the NTESDP 2018-2022 noted how employment in the sector increased from 372,000 in 2005 to 502,000 in 2016 (3.2% annual growth rate). “Along with Other Community, Social, and Personal Services, the subsector is projected to have 565,000 additional workers” (TESDA, 2018).

Moreover, DOH approved the hiring of 8,553 additional personnel as of June 2020, given the continuous demand for health workers, particularly in hospitals/health facilities to help manage the COVID-19 situation. The occupations include Physicians, Nurses, Medical Technologists, Respiratory Therapists, Radiologic Technologists, Medical Equipment Technicians, Nursing Attendants, Ambulance Drivers, and Administrative Assistants (Technical Education and Skills Development Authority, 2020). The health personnel was deployed to 286 health facilities “such as hospitals, quarantine facilities managed by Bureau of Quarantine, temporary treatment and monitoring facilities, diagnostic facilities, and primary health care facilities” for emergency hiring (Duterte, 2020).

The temporary redeployment of nurses to DOH and LGU hospitals handling COVID-19 cases is ongoing to help with activities such as contact tracing and specimen collection/swab testing, especially in light of the implementation of the UHC Act.

The importance of strengthening the local health systems and services became much more evident due to the pandemic. A responsive local government structure was the main objective for the decentralization of some health-related functions to the LGU.

Reforms are expected in health service delivery as Section 17.3.a of the IRR of the UHC Act highlighted the establishment of a primary care provider network as part of

the health care provider network (Implementing Rules and Regulations of the Universal Health Care Act, 2019). Under this system, Filipinos will be connected to a primary care provider network, which will provide primary care services (i.e first level of care) before coordinating patients in the appropriate higher level of care such as hospitals.

Moreover, Section 19 mandates the Department of Interior and Local Government (DILG) and DOH to “facilitate the integration of local health systems into province-wide and city-wide health systems” while still allowing the concerned LGUs to retain their functions in their health facilities and personnel under the Local Government Code of 1991 (Republic Act No. 11223, 2019).

Besides the COVID-19 pandemic and the continuous reforms and changes in the healthcare industry, other major accelerators are driving the industry's growth.

The NTESDP 2018-2022 identified three other major accelerators to the health and wellness industry namely: (a) new technologies that are more effective but more expensive to deliver; (b) an aging population with a higher incidence of morbidity; and (c) changing lifestyles in a changing environment (sedentary work, obesity, fast food, and junk food consumption).

Following this, related activities that contribute to economic growth include the manufacturing and retail trade of pharmaceutical products. “The sector has a spill-over effect to other sectors, which include: travel and tourism (wellness tourism); food manufacturing; agriculture (health eating, nutrition & weight loss); manufacturing (beauty & anti-aging); construction (hospitals, medical and wellness centers); and services (alternative medicine, wellness, and fitness programs)” (Technical Education and Skills Development Authority - National Capital Region, 2021).

Relative to the various industry developments, the health industry’s impact on other high-growth sectors, and the projected employment opportunities, the workforce is expected to be equipped with the necessary skills and competencies to get the job done. For the most part, many of the new skills requirements are related to digital health innovations. As cited in the NCR Skills Priorities 2021-2023 report, Makati Medical Center published the health and wellness practices expected to evolve and gain traction in the coming years including:

- Telehealth (Virtual care, remote medicine);
- Health Vendors’ interoperability (i.e. ability of different software applications and information systems used by healthcare vendors to communicate, resulting in an efficient data exchange that can be used by both healthcare professionals and patients);
- Preventive Medicine;
- Smart hospitals;
- Remote training (e.g. workout apps, online classes);
- Meal delivery services; and
- Stress tracking

Now considering the extensive nature and characteristics of the industry and how it affects several other valuable sectors, it is critical to cover as much information as possible in the conduct of the study. The quality of available data and information is key to the development of sound policy decisions and effective programs. Thus, selecting “a method that works” is essential (Centers for Disease Control and Prevention, 2015).

The Centers for Disease Control and Prevention (2015) provided various survey format options which include paper and pencil questionnaires (in-person), postal/email questionnaires, web-based tools, face-to-face interviews, and focus group discussions. All of which were given their specific pros and cons. For the use of a web-based tool, below are the pros and cons:

Table 3
Survey Format Option: Pros and Cons of Web-based Tools

Pros	Cons
● Order of questions can be preprogrammed ● Only “acceptable” answers are allowed (validation) ● Can give respondent links that give additional explanation ● Data are automatically entered into a database and can be automatically analyzed OR exported to other software programs ● Can easily track user response rate OR choose anonymously ● Progress bar to inform respondents of the percentage completed ● Require the question to be answered	● Need reliable access to the Internet ● The respondent must be “online” ● The system can go down or be unreliable ● Respondents must be able to use a computer, a mouse, and/or keyboard or have access to accommodations to assist individuals with these limitations

Source. Centers for Disease Control and Prevention (2015)

CHAPTER 3
METHODOLOGY

3.1 Research Methodology

The main objective of the study is to determine the current skills supply and demand in the workplace, emerging skills requirements and competencies, and the existing job-skills mismatches, which can help in the projection of future skills needs. Additionally, in response to the HRH Philippine Masterplan 2020-2040, the study can act as a supplement to the possible policies and strategies to be implemented as indicated in the Masterplan.

Thus, to better assess the situation of the health workforce vis-a-vis industry demand in light of the current critical health issues the country is facing, a descriptive cross-sectional design was used.

According to Ihudiebube-Splendor and Chikeme (2020), this research design provides a “snapshot of the frequency and characteristics of a condition in a population at a particular point in time”. It will allow skills measurement of TVET graduates while describing its relationship among phenomena (e.g. employer’s satisfaction). Following this, probability sampling was employed to capture various representatives of the population.

Given the characteristics of the sampling frame, the said research methodology was proven to be appropriate.

3.2 Questionnaire

The research instrument, developed through the assistance of the ILO and used for the first two conducted SNA-WSS Survey, served as the basis for this survey questionnaire.

However, modifications were made based on the nature and characteristics of the Health Sector and the conducted industry scoping to better cover the context of the industry. The developed questionnaire also underwent validation with the DOH and the industry associations involved in the study to ensure accuracy and acceptability to the target respondents.

The questionnaire was divided into 12 sections, as listed below, to achieve the survey objectives. The descriptions from the technical report on the SNA-WSS Survey for the IT-BPM (Philippine Statistical Research and Training Institute, 2020) were adapted, with minimal modifications.

1. **Profile of the Company**
   This gathers information such as the position of the respondent, the name of the health facility/company, the location, and the subsector to which the health facility/company belongs.

2. **Basic Organizational Background**
   This section asks for information on the distribution of employees by occupational type and employment status, highest educational attainment, age group, and gross monthly salary (PhP). This also asks for the percentage of female employees and gathers information on which health facilities/supporting service companies are part of multinational organizations and the location of their main offices.

3. **Critical Human Resources**
   This particular section asks about the status of employee size from 2020 to 2021, the expected change in employee size for the succeeding years, the presence of unfilled positions in the last six (6) months, whether or not the health facility/supporting service company has fast turnover and the occupational types that are difficult to retain, in addition to the reasons for fast turnover. Likewise, it inquires about the approximate percentage of employees who would be difficult to replace within three months if they resigned, as well as the top three jobs that would be difficult to replace in the event of resignation, the percentage of employees who left due to resignation, contract termination, or retirement, and the top three reasons for resignation.

   Moreover, this section gathers information on the percentage of vacancies in the health facility/supporting service company relative to education requirements, the number of employees promoted to managerial and supervisory positions, the presence of structured programs for high-potential employees, the percentage of employees with outstanding performance, and, the percentage of employees supported by career or structured planning policies or practices.

4. **Skills in the Business**
   For this section, respondents are asked on the percentage of employees according to their performance (able to perform the job, unable to perform the job, and have the potential to perform with more demanding duties), reasons behind poor performance and corresponding actions applied, whether actions were done for those with more potential and whenever applicable, the reason why no action was done.

   Correspondingly, the respondents were also asked about the percentage of all positions in the health facility/supporting company that by policy require a college degree, two (2) to three (3) weeks of induction training, continuous learning or developmental activities, at least three (3) years industry-relevant experience, and technical vocational certificate or National Certificate. The number of additional employees needed for the succeeding years was also asked as well as the jobs or skills that either may have a shortage, no change, surplus, or will be

hard to fill in the next five (5) years and whether those occupations/skills needs/requirements may be addressed by a TVET Program.

5. **Emerging Skills Associated with Industry Developments**
   This section contains questions on the emerging skills about the fourth industrial revolution and the new normal, and how likely those skills will impact skills demand in the next 1-5 years. This section also inquires about the readiness for the emerging skills, actions undertaken by health facilities/supporting service companies who are ready, and preparations done for the human resource relative to the emerging skills.

6. **Green Jobs and the Health Sector**
   Questions under this section include the extent of implementation of each health facility/supporting service company on various aspects of green jobs and provisions for any aspects of green jobs. The section also inquires whether the health facility/supporting service company has made use of the tax incentives or import duties exemption programs and has received support or is seeking support from any government agency, the name of the agency, the list of emerging skills identified relative to green job, and the relevance of the green industry developments to the current and near-future business needs in terms of knowledge, skills, and attitude.

7. **Learning and Development**
   This section seeks information such as the percentage of payroll expenditure allotted for training. It also seeks the health facility/supporting service company's rating of various training-related statements using a 5-point scale where 5 means "strongly agree" and 1 means "strongly disagree".

8. **Work and Employment Practice**
   For this section, questions are about the health facility/supporting service company's policies covering various documents (i.e. business, training, and staff development plans, training budget, and development for high potential staff), the percentage of full-time permanent and contractual employees entitled to various rewards or opportunities, and the extent of information sharing in the health facility/supporting service company concerning financial information, business plans, operational challenges, and market analysis.

9. **Business Strategy**
   Under this section, the health facilities/supporting service companies are asked to rate various statements regarding the approach to business and the extent of implementation of actions for different areas of business development. Questions on plans of expansion in other areas of business development were likewise included.

10. **Work Processes and Technology**
    This section primarily focuses on gathering information on how up-to-date the health facility/supporting service company's core equipment that is being used in

the production of goods and services compared to the best commonly available technology in the country and overseas.

11. Organizational Performance

This particular section asks about the status of outcomes such as profitability, total sales or revenue, and market share for the period 2020 to 2021. Moreover, it seeks information on the percentage of employees exhibiting various behaviors at work.

12. Workforce Matters

The last section of the questionnaire gathers information on the percentage of employees in the facility that are TVET graduates. Likewise, the health facilities/supporting service companies are asked to give satisfaction ratings on the work and performance of TVET graduates and TVET-certified employees.

The questionnaire was converted into an online survey, utilizing JotForm, an online and code-free application used to create custom online forms. Additionally, the online survey was used regardless of the survey method (researcher-administered or self-administered).

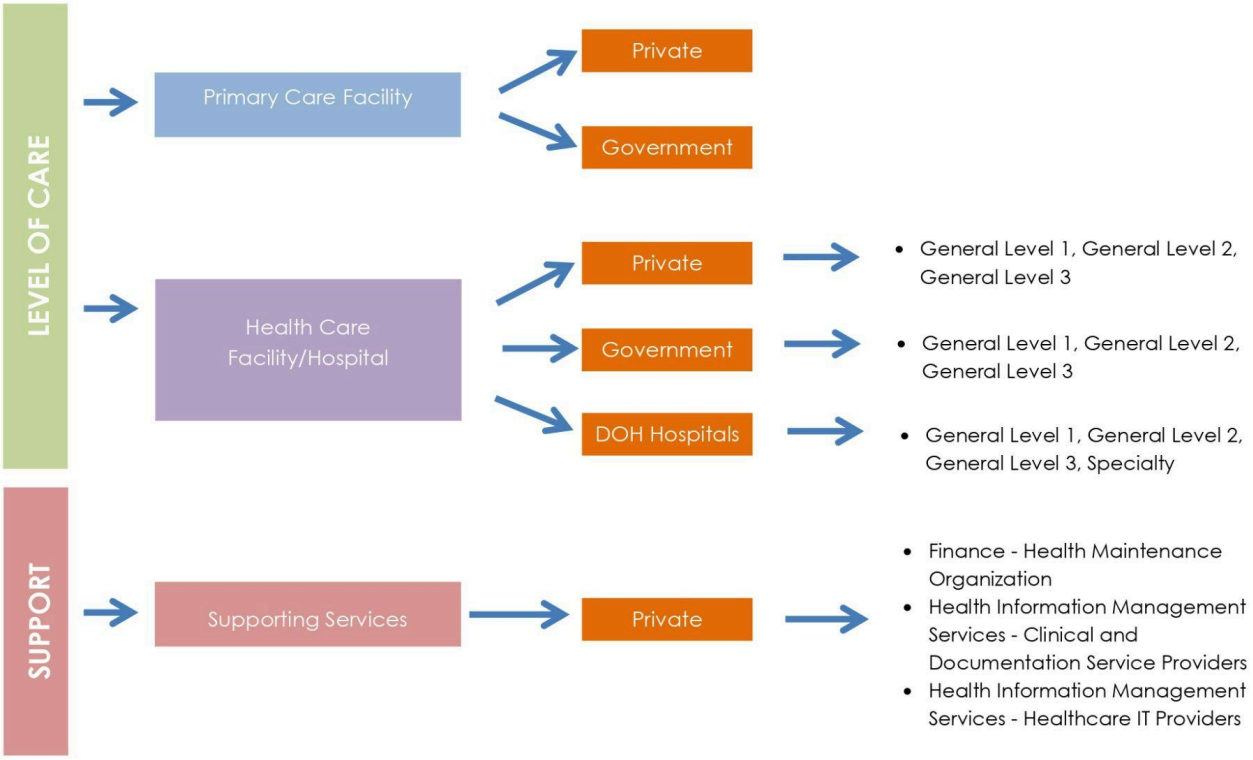
3.3 Sampling and Sampling Techniques

The various health industry associations together with the DOH - Primary Care Worker Team provided the databases which served as the sampling frame. The member list was further refined by removing all the duplicates and classifying each health facility and supporting service companies in only one subsector to be counted just once.

If facilities or companies are operating in the same category under the same region (e.g. 3 branches of Alabang Medical Clinic operating under General Level 1 Hospital, all in NCR), the study will only consider respondents from the main facilities/offices or the first one to be established, as applicable. If the facility/office refused to participate, a replacement was sourced from the other branches in random order.

As mentioned in Chapter 1 (Table 1), only the top three regions with the most number of health facilities per type of ownership were included. Shown below is the framework used for determining the sample size (Figure 4).

Figure 4
Framework for Determining the Sample



After accounting for the said considerations, a total of 657 facilities served as the universe of the study.

Table 4 presents the distribution of the health facility/supporting service company by subsector.

Table 4
Distribution of the Health Care Facilities and Supporting Service Companies by Subsector

Subsector	Number of Health Facility/Companies
Primary Care Facility	69
Health Care Facility - General Level 1	322
Health Care Facility - General Level 2	146
Health Care Facility - General Level 3	62

Health Care Facility - Specialty	4
Supporting Services - Finance (Health Maintenance Organization)	11
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	31
Supporting Services - Health Information Management Services (Healthcare IT Providers)	12
Total	657

Relative to the presented framework in Figure 4, stratified random sampling was used to identify the sample size per subsector, and circular systematic sampling to select the actual respondents who will participate in the study. Although health facilities and supporting service companies were selected as the sample for the survey, the unit of analysis is the “facility”, which refers to both the healthcare facilities (i.e hospitals) and supporting service companies (i.e HMOs and Health Information Management System - HIMS companies). Thus, the respondent shall only talk about the operations for that particular subsector’s facility except for questions that specifically ask the respondents to provide general respondes for the entire subsector or the health sector.

Although the endorsement and assistance of the associations were sought, contacting or obtaining cooperation from the respondents proved to be challenging. Thus, a substitution replacement was applied to the sampled units, using the developed guidelines.

When the enumerators had difficulty locating and/or identifying the sampled health facilities and supporting service companies such that no responses were received via emails or phone calls, a substitution replacement was applied. For the substitution and in consideration of the three (3) days heuristic guidelines, a three-day attempt for a week may mean any of the following:

1. Combination of email and calls
    - 2 days of email and 1 day of the call
    - 1-day email and 2 days of call
2. Pure calls
    - 3 days of calls

For follow-up calls, a 2-3 attempts rule was followed, made with at least 15-minute intervals or at different times of the day, before considering it as a one (1) day follow-up call. However, emails and calls made per day may not necessarily be done on consecutive days.

In the cases where all or almost all information of the sampled respondent is missing or cannot be found through various methods (i.e asking the association, desktop research), substitution is not applicable and it is treated as a nonresponse error. Respondents who also refused to participate in the survey due to various reasons

such as hectic schedules, vaccination drives, and other operation-related reasons are considered nonresponse errors. Substitution cannot be applied so as not to result in a survey bias.

Thus, accounting for time and available resources, this study considered the nonresponse error as well as a 10% margin of error and 95% confidence level in calculating the sample size. As a result, the computation yielded a final sample size of 382 where 335 of which are health facilities and 47 are supporting service companies.

Table 5
Distribution of Final Sample Size by Subsector

Subsector	Number of Health Facility/ Companies
Primary Care Facility	46
Health Care Facility - General Level 1	180
Health Care Facility - General Level 2	71
Health Care Facility - General Level 3	34
Health Care Facility - Specialty	4
Supporting Services - Finance (Health Maintenance Organization)	9
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	28
Supporting Services - Health Information Management Services (Healthcare IT Providers)	10
Total	382

In terms of the type of ownership, Table 6 shows that the majority of the facilities are privately owned (61.26%), followed by other government facilities (32.98%) and DOH hospitals (5.76%). However, it should be noted that one factor to consider is that all facilities in the supporting services subsectors are privately owned.

Table 6
Distribution of Final Sample Size by Type of Ownership

Type of Ownership	Number of Health Facility/ Companies
Privately Owned	234
Government Owned (DOH Hospitals)	22
Government Owned (Other Government Facilities)	126

Total	382

3.4 Preparation for the Survey

The interviewer/enumerator manual used in the SNA-WSS Survey for the IT-BPM sector was adopted with some modifications following the changes in the 2021 questionnaire and data collection method.

Additionally, since most of the respondents will be accessing an online platform to answer the survey, a respondent guide was also developed to provide general instructions and reminders before and during the survey proper. Likewise, instructions are also provided for some specific questions that might require additional clarifications or reminders. Another reference material developed for the respondents is the JotForm guide. This guide contains directions on how to navigate the platform as well as some reminders and recommendations, particularly regarding common errors.

Further, before the conduct of the survey, a mail merge session was organized by the project team to capacitate the enumerators in efficiently creating and sending out letters and emails to the respondents. A database, which also served as the response monitoring sheet for the survey, was prepared to link mail merge functions to email.

3.5 Data Collection Strategies and Processes

Since an online survey yields low response rates based on the past experiences of the TESDA Planning Office and face-to-face interviews are not an option given the health restrictions, the conduct of the WSS was dependent on the commitment of the various associations involved in the study.

The assistance of the Department of Health - Primary Care Workers Team and all the industry associations participating in the study was a critical data collection strategy. An endorsement, either in the form of a letter or an email to their members, was requested. In the case of HIMAP, the invitation was coursed through the association.

Furthermore, the questionnaire was either researcher-administered via a recorded Zoom interview or self-administered via an online application. In both cases, Jotform was utilized. For the health facilities and supporting service companies that served as Zoom interview participants, the online survey link was also provided to give them ample time to prepare the documents/information needed, particularly for the basic organizational background section.

Although an interview is preferred for all respondents to ensure that any clarifications regarding the questionnaire will be answered, resources such as time and the number of hired enumerators, serve as limitations of the study. However, to prevent the survey response from being incomplete or invalid, respondents for self-administered questionnaires were contacted as necessary.

The survey team conducted the data collection from October to November 2021 and followed the data gathering process as outlined below:

1. The survey team informed the involved industry associations that the team will start contacting their member facilities.
2. An email invitation was sent to the sampled respondents containing guidelines for those who wish to participate in the survey including the mode of data collection, subsector, online survey link and form password, and important reminders from the survey guide. The initial email contains the following attachments, for the respondent's reference:
    - Invitation letter signed by the TESDA Director General;
    - Endorsement letter from the associations (if applicable);
    - Survey guide; and
    - Consent form
3. The survey team made a series of follow-up emails and calls depending on the responses to the email invitation.
4. Once the facility agrees to participate, a subsequent email is sent containing the JotForm guide and key reminders before and after answering the link. Whereas, in the case of Zoom interviews, the schedule and meeting details are emailed as well.
5. If the respondents declined the invitation, reasons were noted to form part of the recommendations.

The assistance of the industry associations and the DOH - Primary Care Worker Team was consistently sought throughout the data collection process as contacting the primary care facilities proved to be challenging.

3.6 Editing, Encoding, and Analysis

The accomplished questionnaires were checked for errors or inconsistencies using the developed clarification guide. Once clarified and verified with the respondent, the database was cleaned as appropriate.

Moreover, some of the related responses were coded and combined to generate and correlate various indices. This study considered indices with correlation values of 0.4 and above or those that are at least moderately correlated with one another.

The generated tabulations and the highlights are reported in the succeeding chapter.

CHAPTER 4
RESULTS AND DISCUSSION

This chapter contains the survey findings in the form of summary statistics and tabulations, which are organized by section following the format of the questionnaire.

Several issues arose during the data collection, affecting the survey's response rate. Although most of the contact details provided by the involved associations are complete and accurate, the survey was done during the height of the COVID-19 vaccinations which may have caused the survey to yield low response rates; this even with the generated replacements.

A total of 52 out of the 382 computed sample size participated in the study, yielding an overall response rate of 13.61%. Five out of these 52 health facilities/supporting service companies were surveyed via Zoom interview.

It should be noted, however, that although eight subsectors were initially covered in the study, no responses have been received from the Health Care Facility - Specialty Hospital, and Supporting Services - Health Information Management Services (Healthcare IT Providers). Therefore all succeeding tables from Table 7 will not include these two subsectors.

Further, as shown in Table 8, other government-owned facilities have the highest response rate at 17.46% (22 out of 126 facilities) while out of the computed 22 facilities (Table 6), only two DOH facilities participated in the study yielding a 9.09% response rate.

Table 7

Distribution of Participating Health Care Facilities and Supporting Service Companies and the Response Rate by Subsector

Subsector	Number of Health Facilities/Companies	Response Rate (%)
Primary Care Facility	3	6.52
Health Care Facility - General Level 1	22	12.22
Health Care Facility - General Level 2	9	12.68
Health Care Facility - General Level 3	6	17.65
Health Care Facility - Specialty	0	0.00
Supporting Services - Finance (Health Maintenance Organization)	9	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	3	10.71
Supporting Services - Health Information Management Services (Healthcare IT Providers)	0	0.00

Table 8

Distribution of Participating Health Care Facilities and Supporting Service Companies and the Response Rate by Type of Ownership

Type of Ownership	Number of Health Facilities/ Companies	Response Rate (%)
Privately Owned	28	11.97
Government Owned DOH Hospitals	2	9.09
Government Owned (Other Government Facilities)	22	17.46

4.1 Basic Organizational Background

The occupational types presented in Table 9 followed the classification of occupations in the International Standard Classification of Occupations (ISCO-08) and the 2012 Philippine Standard Occupational Classification (PSOC) with some modifications done to cover the target subsectors. The employees across all the facilities were classified into five occupational types:

1) **Professional Services Manager and Supervisors** – involved in the planning, directing, coordination, and evaluation of health service facilities and supporting services.

   Examples of occupations falling in the category:
   Medical Center Chief, Chief of Hospital, Nurse Manager, Unit Supervisor/Team Lead

2) **Health and Teaching Professionals** – involved in the study, advise, and provision of preventive, curative, and promotional health services. Also included are the professionals involved in teaching and training, and the development of educational materials.

   Examples of occupations falling in the category:
   Medical Doctor, Primary Health Care Physician, Dentist, Pharmacist, Professional Nurse, Medical Technologist, Nutrition Action Officer, Nurse Educator, Graphic Artist

3) **Health Associate Professionals** - perform technical and practical tasks to support diagnosis and treatment of illness, disease, injuries, impairments, and the implementation of health services.

   Examples of occupations falling in the category:
   Hospital Attendant Staff Nurse, Clinic Assistant, Radiologic Technologist/Radiology Technician, Emergency Medical Technician - Paramedic, Biomedical/Medical Equipment Technician, Ambulance Driver

4) **Personal Service and Personal Care Workers** - provide direct personal care and perform simple and routine tasks for the provision of health services and support service including housekeeping and catering.

   Examples of occupations falling in the category:
   Pharmacist Aide, Dental Aide/Dental Laboratory Aide, Caregiver/Home Health Care Nurse, Hospital Housekeeper, Supply Chain Officer, Logistics Manager, Cook

5) **Health Management and Support Personnel** - include a wide range of other types of health systems and supporting service personnel such as those involved in administrative tasks, maintenance, accounts, marketing, and information management.

   Examples of occupations falling in the category:
   Medical Coding and Billing, Computer Maintenance Technologist, Barangay Nutrition Action Officer, Medical Records Technician, Data Encoder, Contact Tracer

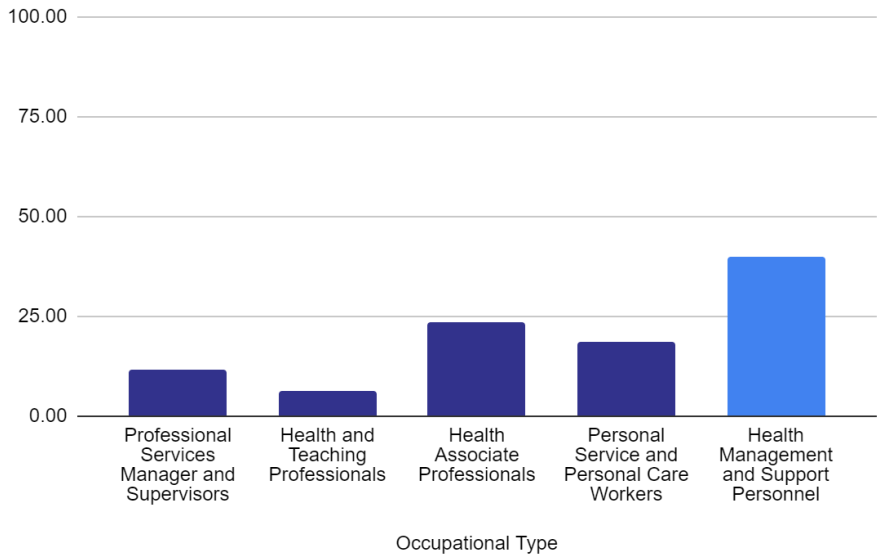
Most of the employees are classified as health management and support personnel. However, it is important to note that majority of the jobs in this occupational type covered the supporting services subsectors and as shown in Table 7, the Supporting Services - Finance (Health Maintenance Organization) had a 100% response rate. This affected the distribution of employees reflected in Table 9 and Figure 5.

Table 9
Distribution of Employees by Occupational Type

Occupational Type	%
Professional Services Manager and Supervisors	11.67
Health and Teaching and Other Professionals	6.32
Health Associate Professionals	23.46
Personal Service and Personal Care Workers	18.60
Health Management and Support Personnel	39.95
Total	100.00

Figure 5

Distribution of Employees by Occupational Type



Further, the results of the distribution of employees by occupational type is consistent across all subsectors as shown in Table 10. All the subsectors had the least number of employees classified as health and teaching and other professionals. In fact, the supporting services - Finance (HMO) had a less than 1% share of employees in this type. Additionally, all the occupational types are represented across all subsectors, except in Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers) that do not have any employees referred as Personal Service and Personal Care Workers.

TESDA develops policies and programs aiming to improve the technical and vocational skills of the country's middle-level workforce, including the Health sector. Although some of the training programs of the Agency attends to the supervisory/managerial-level skills needs, the Agency may consider the proportion of the health associate professionals, personal service and personal care workers, and health management and support personnel in the Health sector as the size of the labor market who may primarily benefit from the programs and policies to be developed.

Table 10

Distribution of Employees by Subsector and Occupational Type

Subsector	Occupational Type					
	Professional Service Managers and Supervisors (%)	Health and Teaching and Other Profes-	Health Associate Professionals (%)	Personal Service and Personal Care Workers	Health Management and Support Personnel (%)	Total (%)

		sionals (%)		(%)		
Primary Care Facility	10.28	8.13	24.71	8.13	48.76	100.00
Health Care Facility - General Level 1	13.09	6.16	27.08	24.05	29.61	100.00
Health Care Facility - General Level 2	11.45	10.01	20.85	26.77	30.91	100.00
Health Care Facility - General Level 3	8.05	10.33	26.74	22.39	32.49	100.00
Supporting Services - Finance (Health Maintenance Organization)	12.10	0.02	10.14	0.99	76.75	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	11.11	1.00	37.30	0.00	50.59	100.00

For the purposes of this study and in accordance with the recommendations of the involved agencies and associations, full-time permanent employees are differently classified from contractual employees due to the nature of government-owned facilities. In total, there are four employment status classified in the study described as:

- Full-time permanent employees: Regular/plantilla employees working full-time generally pertaining to a 40-hour work week;
- Contractual employees: Full-time Job Order/Contract of Service employees, generally pertaining to a 40-hour work week;
- Part-time employees: Carries fewer work hours per week than a full-time employee, generally pertaining to a less than 30-hour work week; and
- Outsourced employee: Employee hired to perform tasks, handle operations or provide services that are either usually executed or had previously been done by the company's own employees; usually part of an outside company known as service provider.

Table 11 shows that employees are dispersed in terms of employment status, with the highest percentage (38.41%) of employees working full-time permanent while the lowest percentage (14.90%) are working part-time. The data is consistent for the most part when distributed per subsector (Table 12). In section 4.3 of this study, one HMO facility also linked an employee's performance to his/her employment status, pointing out the limitations and implications of having a part-time employee.

Table 11
Distribution of the Employees by Employment Status

Employment Status	%
Full-Time Permanent	38.41
Contractual	27.38
Part-Time	14.90
Outsourced	19.31
Total	100.00

Under the primary care facility subsector, the percentages of full-time permanent and contractual employees are equal at 37.50% while part-time employees and outsourced employees are also evenly distributed at 12.50%. Moreover, contrary to the distribution in Table 11, the percentage of part-time employees in the subsector of Health Care Facility - General Level 2 is relatively higher at 22.73% compared to the percentage of contractual and outsourced employees which are both at 18.18%.

All of the identified employment status are represented across all subsectors except in Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers) where there are no part-time employees according to the participating facilities. However, based on the validation meeting, the HIMAP clarified that there is still part-time workers in the industry. Some of their member companies hire interns or sponsor worker's training programs related to tasks then hire them eventually as ful-time employees.

Table 12
Distribution of the Employees by Subsector and Employment Status

Subsector	Employment Status				
	Full-Time Permanent (%)	Contractual (%)	Part-time (%)	Outsourced (%)	Total (%)
Primary Care Facility	37.50	37.50	12.50	12.50	100.00
Health Care Facility - General Level 1	37.79	29.01	15.78	17.42	100.00
Health Care Facility - General Level 2	40.91	18.18	22.73	18.18	100.00
Health Care Facility - General Level 3	30.00	25.00	20.00	25.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	40.59	32.40	4.50	22.50	100.00

Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	60.00	20.00	0.00	20.00	100.00

Table 13 shows the employee sex distribution with evidence of female employees in all participating subsectors. The Primary Care Facility even identified the majority of its employees as female (Figure 6). The lowest percentage is in the Health Care Facility - General Level 2 subsector at 37.28%. Although despite having the lowest percentage, most of the subsectors have close to or more than half of their employees as females. The results are consistent with various reports including the analysis of the WHO (2019) showing the good representation of women in the labor market in 104 countries. It is mentioned that 70% of the workers in the health and social sector are women and “representation in the most highly paid health occupations has been improving steadily since 2000” (World Health Organization, 2019).

This global data is at par with the results of the 2018 Gender Statistics on Labor and Employment of the Philippine Statistics Authority (PSA). According to the report, around 67% of the employed persons under the Human Health and Social Work Activities in 2017 are women (Philippine Statistics Authority, 2018).

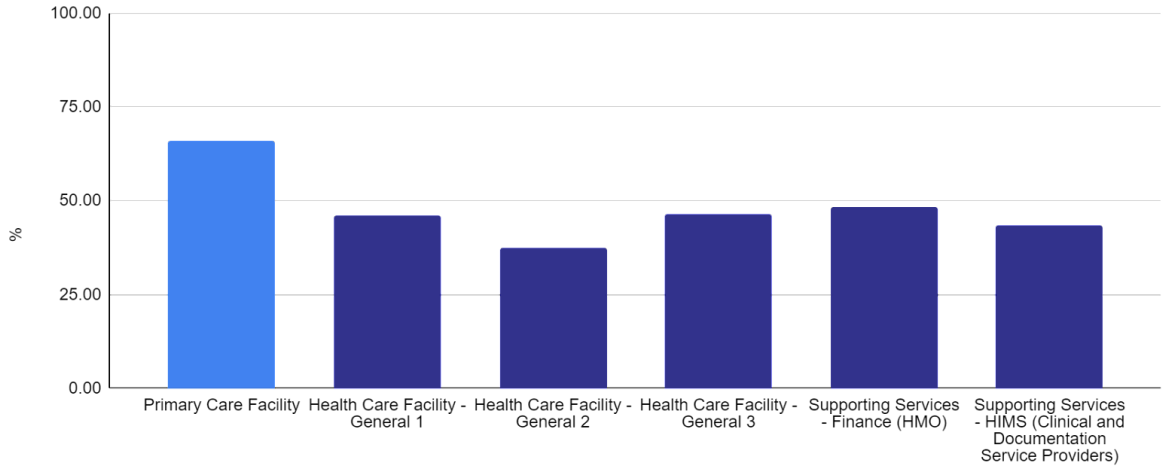
Table 13

Percentage of Female Employees by Subsector

Subsector	%
Primary Care Facility	65.81
Health Care Facility - General Level 1	45.90
Health Care Facility - General Level 2	37.28
Health Care Facility - General Level 3	46.42
Supporting Services - Finance (Health Maintenance Organization)	48.19
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	43.44

Figure 6

Percentage of Female Employees by Subsector



In terms of the highest educational attainment, Table 14 presents that the majority (70.89%) of the employees are college level graduates followed by college undergraduate employees at 6.73%. In Table 15, this pattern can also be seen in half of the subsectors that participated in the study namely Health Care Facility-General Level 2 Hospitals, Finance (HMO), and HIMS (Clinical and Documentation Service Providers).

Interviews with the supporting service companies revealed that as of the moment, most of the available opportunities are for college graduates, further explaining the current employee distribution. For instance, a respondent of HIMS (Clinical and Documentation Service Providers) mentioned that college degree and PRC license are considered as requirements while Master's degree is preferred. The results are also consistent with the results of the conducted SNA-WSS Survey for the IT-BPM industry under the health information management subsector.

TVET graduates, on the other hand is only at 3.89%. There are even more Master's degree and doctoral degree holder than TVET graduates in the existing employees. In Table 15, it can be seen that across the six subsectors, Primary Care Services and HIMS - Clinical and Documentation Service Providers do not have employees that are SHS graduates, TechVoc undergrad, and TechVoc graduates.

Table 14

Distribution of the Employees by Highest Educational Attainment

Highest Educational Attainment	%
High School Graduate (HS Grad)	6.04
Junior High School Graduate (JHS Grad)	0.30
Senior High School Undergraduate (SHS Undergrad)	0.16

Senior High School Graduate (SHS Grad)	0.83
TechVoc Course Undergraduate (TechVoc Undergrad)	0.88
TechVoc Course Graduate (TechVoc Grad)	3.89
College Level Undergraduate (College Undergrad)	6.73
College Level Graduate (College Grad)	70.89
Master's Degree	5.40
Doctoral Degree	4.89
Total	100.00

Table 15

Distribution of the Employees by Highest Educational Attainment and Subsector

Highest Educational Attainment	Subsector (%)					
	Primary Care Facility	Health Care Facility/Hospital			Supporting Services	
		General Level 1	General Level 2	General Level 3	Finance (Health Maintenance Organization)	Health Information Management Services (Clinical and Document Service Providers)
High School Graduate (HS Grad)	0.00	9.17	8.48	2.33	1.86	0.00
Junior High School Graduate (JHS Grad)	1.43	0.04	0.00	1.67	0.00	0.00
Senior High School Undergraduate (SHS Undergrad)	0.00	0.00	0.35	0.83	0.00	0.00
Senior High School Graduate (SHS Grad)	0.00	0.40	3.14	0.83	0.04	0.00
TechVoc Course Undergraduate (TechVoc Undergrad)	0.00	0.82	2.03	0.96	0.35	0.00
TechVoc Course Graduate (TechVoc Grad)	0.00	3.09	10.49	4.64	1.04	0.00

College Level Undergraduate (College Undergrad)	4.57	5.86	11.25	4.76	3.08	19.91
College Level Graduate (College Grad)	84.23	66.86	53.53	74.25	89.79	77.88
Master's Degree	4.77	7.09	3.58	7.37	2.76	2.21
Doctoral Degree	5.00	6.67	7.16	2.37	1.07	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00

Among the prime working age (described by the ILO as aged 25 to 54 years old), Figure 7 shows that the largest percentage of the employees belong to the age group of 18 to 34 years old. This age group covers the millennial and Gen Z population. The result is consistent with the data of the National Health Workforce Support System (NHWSS) of the DOH where the predominant age group is late 20s to early 30s. Moreover, the following is the age distribution of health professionals with Valid PRC-license as of 2022:

- Age 25 - 29 years old: 15.55%;
- Age 35 - 39 years old: 18.51%; and
- Age 30 - 34 years old: 29.28%.

For employers, understanding the composition of their workforce may be beneficial in determining the motivations of their employees, understanding work attitude and behavior, and knowing the appropriate action to improve work performance.

A 2019 paper by the Philippine Institute for Development Studies (PIDS) entitled “Who Are the Health Workers and Where Are They? Revealed Preferences in Location Decision among Health Care Professionals in the Philippines”, the health sector was still characterized as an ageing workforce. Fast forward to today, the sector is characterized to be a relatively young population that may be attributed to the current trend in hiring fresh graduates directly from school. It is evident that the percentage of employees are decreasing as the age group increases, a pattern that is consistent with the distribution of employees across all subsectors (Table 16).

But because they are also young, they are more likely to leave the country, thus the sector experiencing talent shortages and high turnover rates. From an interview with a participating health facility, the respondent noted that younger ones tend to consider their employment as temporary. In particular, young nurses, for example, would usually have the intention to work overseas as compared to older healthcare workers. Another interview participant shared that the hospital is utilized as a “training ground” by fresh graduates and those who still lack experience.

Figure 7

Distribution of the Employees by Age Group

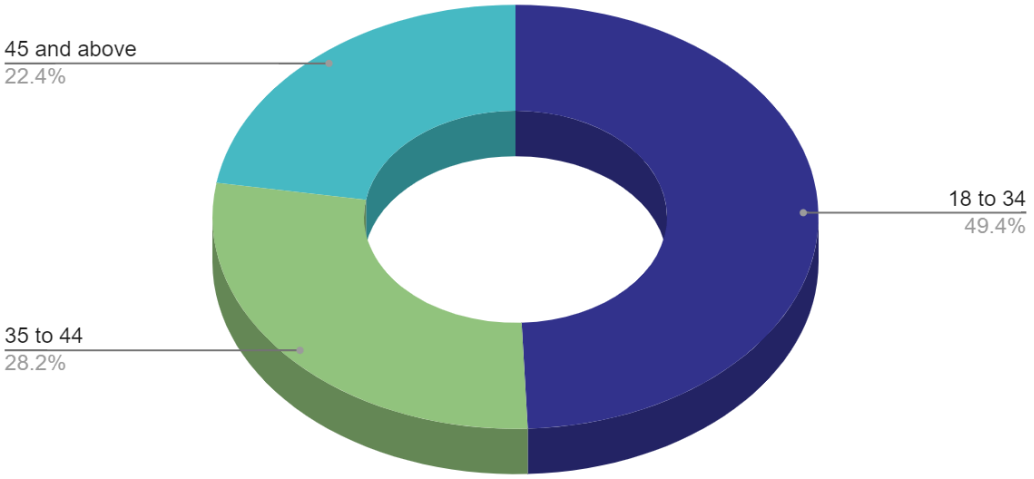


Table 16

Distribution of the Employees by Subsector and Age Group

Subsector	Age Group (years)			
	18 to 34 (%)	35 to 44 (%)	45 and above (%)	Total (%)
Primary Care Facility	47.48	31.69	20.84	100.00
Health Care Facility - General Level 1	43.20	29.32	27.48	100.00
Health Care Facility - General Level 2	52.94	28.01	19.05	100.00
Health Care Facility - General Level 3	55.39	25.61	19.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	53.63	25.87	20.50	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	62.95	33.31	3.75	100.00

Due to the nature and scope of the subsector (i.e. RHUs, BHUs, municipal and provincial health offices, and clinics), only the primary care facility subsector is not engaged with multinational facilities or companies as shown in Table 17. Further, all of the three supporting service companies under HIMS (Clinical and Documentation Service Providers) subsector

are part of multinational organizations. In total, 12 out of 52 health facilities/supporting service companies are part of a larger multinational organization.

Table 17
Percentage of the Multinational Health Facilities and Supporting Service Companies per Subsector

Subsector	%
Primary Care Facility	0.00
Health Care Facility - General Level 1	18.18
Health Care Facility - General Level 2	22.22
Health Care Facility - General Level 3	16.67
Supporting Services - Finance (Health Maintenance Organization)	22.22
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	100.00

Meanwhile, Table 18 presents that majority of the subsectors that are part of multinational organizations have their main locations situated in the Philippines (83.33%) while the remaining few (16.67%) are in the United States of America.

Table 18
Distribution of the Multinational Facilities/Companies by Location of Main Office

Location	%
Philippines	83.33
United States of America	16.67
Total	100.00

In terms of gross monthly salary, the highest percentage of employees are compensated above minimum wage to less than PhP 26,000, although only representing almost half (46.22%) of the distribution as seen on Table 20. The lowest percentage of employees, on the other hand, receive the highest gross salary of PhP 70,000 or more on a monthly basis.

Looking at this distribution per subsector and based on the type of ownership (Table 19), it is evident that the results indicated in Figure 8 is true for majority of the subsectors whether in private or government-owned facilities. However, it is notable that for the Health Care Facility - General Level 3 subsector, the majority (62.80%) of the employees in the privately-owned facilities are earning above minimum wage to less than PhP 26,000 whereas for government-owned employees, the highest percentage (39.56%) have a gross monthly

salary of PhP 26,000 to less than PhP 50,000.

Although the distribution between those earning above minimum wage to less than PhP 26,000 and PhP 26,000 to less than Php 50,000 only deviated by 2.21%, one of the government hospitals interviewed for this study expressed that government hospitals have indeed, higher salaries for staff compared to private hospitals.

Figure 8

Distribution of the Employees by Gross Monthly Salary

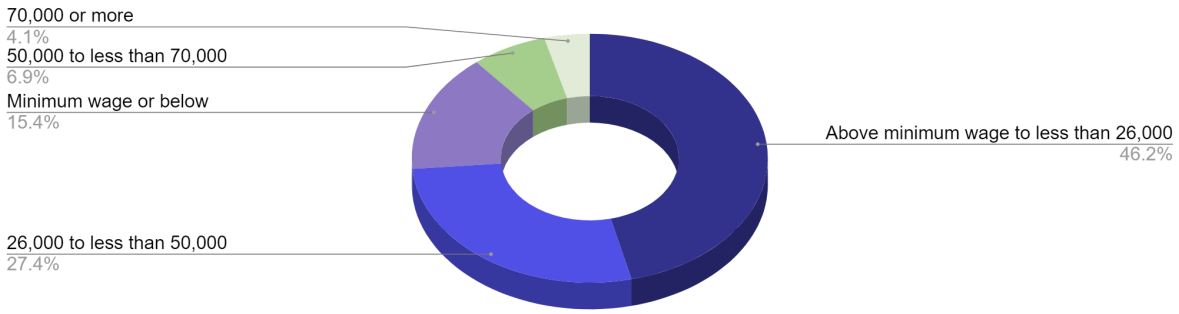


Table 19

Distribution of the Employees by Subsector, by Gross Monthly Salary, and by Type of Ownership

Subsector	Gross Monthly Salary (PhP)					
	Min. Wage or below (%)	Above Min. Wage to 26K (%)	26K to 50K (%)	50K to 70K (%)	70K or more (%)	Total (%)
Privately Owned						
Primary Care Facility	0.00	0.00	0.00	0.00	0.00	0.00
Health Care Facility - General Level 1	26.40	52.28	20.40	0.91	0.00	100.00
Health Care Facility - General Level 2	36.53	52.37	7.13	3.52	0.45	100.00
Health Care Facility - General Level 3	3.50	62.80	22.30	6.16	5.25	100.00
Supporting Services - Finance (Health Maintenance Organization)	5.25	53.38	29.74	6.37	5.27	100.00
Supporting Services - Health Information Management	3.94	50.03	31.05	8.27	6.70	100.00

Services (Clinical and Documentation Service Providers)						
	Government Owned					
Primary Care Facility	11.57	33.10	47.23	2.67	5.43	100.00
Health Care Facility - General Level 1	17.69	37.53	32.23	8.53	4.02	100.00
Health Care Facility - General Level 2	16.41	50.86	19.47	10.26	3.01	100.00
Health Care Facility - General Level 3	0.00	37.35	39.56	13.75	9.35	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	0.00	0.00	0.00	0.00	0.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	0.00	0.00	0.00

4.2 Critical Human Resources

Table 20 shows that 32.69% of the participating health facilities and supporting service companies experienced a decrease in employee size from 2020-2021. This is attributed to responses from all subsectors except Supporting Services - HIMS (Clinical and Documentation Service Providers) (Table 21).

Meanwhile, 15.39% of all participating facilities had no change or stayed the same in terms of employee size for the same period, with the Primary Care Facility having the largest percentage of 33.33% specific on the distribution by subsector. Further, it is evident that this percentage in the said sector is equally distributed across all statuses of employee size.

Although a couple of the facilities experienced either no change or a decrease in the number of employees, the majority still reported an increase in employee size. Besides in Supporting Services - HIMS (Clinical and Documentation Service Providers), relatively high percentages is accounted in Health Care Facilities - General Level 1 and General Level 3 subsectors.

The experienced increase in employee size may be attributed to the COVID-19 pandemic keeping the high demand for healthcare workers and the efforts of the government through DOH to hire additional staff.

Table 20

Distribution of the Health Facilities/Supporting Service Companies by Status of Employee Size, 2020 to 2021

Status of Employee Size	%
Decreased	32.69
Stayed the same	15.39
Increased	51.92
Total	100.00

Table 21

Distribution of the Health Facilities/Supporting Service Companies by Subsector and Status of Employee Size, 2020 to 2021

Subsector	Status of Employee Size			
	Decreased (%)	Stayed the Same (%)	Increased (%)	Total (%)
Primary Care Facility	33.33	33.33	33.33	100.00
Health Care Facility - General Level 1	22.73	18.18	59.09	100.00
Health Care Facility - General Level 2	55.56	11.11	33.33	100.00
Health Care Facility - General Level 3	33.33	16.67	50.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	44.44	11.11	44.44	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	100.00	100.00

When asked about the expected change in employee size, Table 22 reveals that 69.23% of the participating health facilities and supporting service companies are expecting an increase in 2022. The majority, if not all, of the facilities/companies in all the subsectors, except in Primary Care Facility, projected an increase of employees (Table 23). In fact for HIMS (Clinical and Documentation Service Providers) subsector, all of the three participating companies are expecting an increase. Besides industry development, the demand for

healthcare workers may be linked to the pandemic. One of the participating hospitals explained that additional workers are expected due to continuous hiring.

Meanwhile, few (7.69%) of the facilities/companies expect their employees to decrease which is only comprised of the Health Care Facility-General Level 1 and General Level 3 hospitals. On another note, some (23.08%) are expecting the employees to stay the same and one of the interviewed Supporting Services - Finance (HMO) company explained that they will freeze hiring to focus on replacements instead. As such, attention must also be given to the vacancies caused by separated employees to prepare the labor supply.

Table 22

Distribution of the Health Facilities/Supporting Service Companies by Expected Change in the Number of Employees for the year 2022

Expected Change in the Number of Employees	%
Decrease	7.69
Stay the Same	23.08
Increase	69.23
Total	100.00

Table 23

Distribution of the Health Facilities/Supporting Service Companies by Subsector and Expected Change in the Number of Employees for the year 2022

Subsector	Expected Change in the Number of Employees			
	Decrease (%)	Stay the Same (%)	Increase (%)	Total (%)
Primary Care Facility	0.00	66.67	33.33	100.00
Health Care Facility - General Level 1	9.09	18.18	72.73	100.00
Health Care Facility - General Level 2	0.00	33.33	66.67	100.00
Health Care Facility - General Level 3	33.33	0.00	66.67	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	33.33	66.67	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	100.00	100.00

The respondents were asked to estimate the additional employees that their facilities will be needing in 2022 (Table 24). Among the six subsectors, four specified that relative to their current employees, an estimated 10%-50% will be added. Out of the four subsectors, both supporting services subsectors indicated more than half of their facilities will be needing an additional 10%-50%.

Moreover, consistent with the results in Table 23, Health Care Facility - General Level 3 and HIMS (Clinical and Documentation Service Providers) responded that they need additional manpower from at least 10% to more than 50% to some facilities.

Yet, inconsistencies/discrepancies may be noted between Tables 22, 23, and 24, which presented the expected change in the number of employees from 2021 to 2022 and the estimated additional employees in 2022. For example, as shown in Table 23, 66.67% of the facilities in Primary Care will not have any changes in the number of employees. Still, at least 10% to 50% additional employees is estimated.

Table 24

Distribution of Facilities by Percentage of Estimated Additional Employees in 2022, by Subsector

Subsector	Percentage of Facilities (%)				
	None	< 10	10-50	> 50	Total
Primary Care Facility	0.00	33.33	66.67	0.00	*100.00*
Health Care Facility - General Level 1	4.55	36.36	50.00	9.09	*100.00*
Health Care Facility - General Level 2	11.11	44.44	33.33	11.11	*100.00*
Health Care Facility - General Level 3	0.00	33.33	66.67	0.00	*100.00*
Supporting Services - Finance (Health Maintenance Organization)	11.11	66.67	22.22	0.00	*100.00*
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	66.67	33.33	*100.00*

Hard to fill occupations refer to occupations/positions that remain unfilled in the last six months and as shown in Table 25, the situation is applicable to all subsectors. It is also interesting to note that all three participating facilities from the HIMS (Clinical and

Documentation Service Providers) have hard-to-fill occupations. When the specific occupations/positions for the subsector are evaluated in Table 26, it is observed that most require college-level education which is consistent with the said educational requirements for new entrants.

Still, some of these occupations such as call taker and clinical assistant may not necessarily need a bachelor's degree to do the job, which may also be a factor for being unfilled. Further, the other facilities noted that positions which are difficult to fill are mostly those that need any of the following: (1) licenses or certifications, (2) higher-level education, and (3) talented employees or higher-level skills (e.g. project lead, manager).

Table 25

Percentage of Health Facilities/Supporting Service Companies with Hard-to-Fill Occupations per Subsector

Subsector	%
Primary Care Facility	33.33
Health Care Facility - General Level 1	77.27
Health Care Facility - General Level 2	88.89
Health Care Facility - General Level 3	66.67
Supporting Services - Finance (Health Maintenance Organization)	77.78
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	100.00

Table 26 lists the projected hard-to-fill skills of the facilities for the next five years. Among the five occupational types, most of the occupations that are applicable to all, if not most subsectors, are in the Health and Teaching and Other Professionals category. Some of the examples include Pharmacist, Primary Care Physician, and Graphic Artists. With the UHC Act and the shift to a "primary care-oriented and integrated system", the projected need to meet the current demand for Primary Care Physicians alone is 60,000 (Department of Health, 2020).

Other most common hard to fill occupations include 2D Echocardiography Technician, Medical Doctor, Accounts Officer, Biomedical/Medical Equipment Technician, Call Taker, Data Controller, Dentist, Dialysis Nurse, Staff Nurse, Emergency Medical - Advance, and Medical Coding and Billing.

On the other hand, when linked to the occupational types, all of the occupations under the Personal Service and Personal Care Workers are considered as easy to fill, whereas occupations classified as hard-to-fill are mostly concentrated in the Health Associate Professionals and Health Management and Support Personnel. The common hard-to-fill occupations identified by at least 10 of the participating facilities are listed in Table 27.

In particular, it is interesting to note that although industry experts are mentioning (during the scoping and the related industry consultations) that there is an increased need for Mental Health professionals and paraprofessionals in the country, Mental Health Counselors are not considered as hard to fill by any of the participating facilities. However, other factors may be considered such as the availability of the positions, acceptability/recognition of the facilities, and the industry demand. Barangay Health Workers, for example, are volunteer workers by nature, and industry experts (during the various consultations) noted the lack of plantilla positions. All these factors may have affected the results.

The PAP also shared that there is still less recognition from the health sector when it comes to mental health. However, as further shared in the validation, research have shown that youth, in particular, have no one/nowhere else to go, not mentioning how expensive seeking help with professionals is. Not all mental health-related concerns would also necessitate a Psychologist or mental health professionals. Some are reported to explore areas outside the formal sector such as within the communities as well, which may also anticipate the demand for paraprofessionals.

Moreover, some of the identified hard-to-fill occupations were also included in the conducted industry consultations for the health sector in 2021 (e.g. Nutrition Action Officer). However, the cited constraints for filling-up the job is the need for higher education (e.g. registered Nutritionist Dietitian). The same goes for Emergency Medical Technician - Advanced. Additionally, besides the listed jobs, Senior Clinical Specialist is also cited as one of the hard-to-fill jobs by an HIMS (Clinical and Documentation Service Providers) facility. According to the interview with the HIMS facility, senior positions who acts as cluster lead, project lead, or manager are typically very difficult to fill compared to entry-level healthcare-related positions.

Table 26

Hard-to-fill Skills under each Subsector for the next 5 years

Areas of Skills/Jobs	***Subsector***					
	Primary Care Facility	***Health Care Facility - General Level 1***	***Health Care Facility - General Level 2***	***Health Care Facility - General Level 3***	***Supporting Services - Finance (Health Maintenance Organization)***	***Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)***
2D Echocardiography Technician						
Accounts Officer						
Actuarial Assistant						
Administrative Aide						

Areas of Skills/Jobs	*Subsector*					
	Primary Care Facility	*Health Care Facility - General Level 1*	*Health Care Facility - General Level 2*	*Health Care Facility - General Level 3*	*Supporting Services - Finance (Health Maintenance Organization)*	*Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)*
Administrative Assistant						
Administrative Officer						
Aged Care/Nursing Home Director						
Ambulance Care Assistant						
Ambulance Driver						
Ambulance Quality Assurance						
Assistant Clinical Director						
Attorney						
Audiometrician						
Biomedical/ Medical Equipment Technician						
Birth Assistant						
Business Intelligence & Product Management Officer						
Call Taker						
Caregiver/Home Health Care Nurse						
Chief of Hospital						
Chief of Medical Professional Staff						
Clinical Assistant						
Clinical Director						
Clinical Instructor						

Areas of Skills/Jobs	*Subsector*					
	Primary Care Facility	*Health Care Facility - General Level 1*	*Health Care Facility - General Level 2*	*Health Care Facility - General Level 3*	*Supporting Services - Finance (Health Maintenance Organization)*	*Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)*
Computer Maintenance Technologist						
Contact Tracer						
Cook						
Customer Service Representative/Help desk						
Data Controller						
Data Encoder						
Dental Aide/Dental Laboratory Aide						
Dental Equipment Laboratory Technician						
Dentist						
Dermatologist						
Dialysis Nurse						
Dietetic Technician						
Emergency Medical Technician - Advance						
Emergency Medical Technician - Paramedic						
Engineer						
Engineering Assistant						
Financial and Management Officer						
Food Preparation Assistant						
Graphic Artists						

Areas of Skills/Jobs	*Subsector*					
	Primary Care Facility	*Health Care Facility - General Level 1*	*Health Care Facility - General Level 2*	*Health Care Facility - General Level 3*	*Supporting Services - Finance (Health Maintenance Organization)*	*Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)*
Gynecologist						
Health Education and Promotion Officer						
Health Information Management and Bioinformatics						
Health Physicist						
Health/Sanitary Inspector						
Home Health Aides						
Hospital Attendant						
Hospital Housekeeper						
Human Resource Officer						
In-Patient Coordinator						
IT Assistant Supervisor						
IT Personnel						
IT Supervisor						
Laboratory Aide						
Laundry Worker						
Logistics Manager						
Marketing Assistant						
Mechanical Ventilator Technician						
Medical Center Chief						
Medical Claims Associate						

Areas of Skills/Jobs	*Subsector*					
	Primary Care Facility	*Health Care Facility - General Level 1*	*Health Care Facility - General Level 2*	*Health Care Facility - General Level 3*	*Supporting Services - Finance (Health Maintenance Organization)*	*Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)*
Medical Claims Representative						
Medical Coding and Billing						
Medical Doctor						
Medical Laboratory Technician						
Medical Liaison						
Medical Officer						
Medical Provider and Membership Relations Officer						
Medical Records Technician						
Medical Secretary						
Medical Specialist						
Medical Technologist						
Medical X-ray Technician						
MIS Technical Support						
Nurse Educator						
Nurse Manager						
Nursing Attendant/ Assistant						
Nutrition Action Officer						
Nutrition Program Coordinator						
Nutritionist Inventory Supervisor						
Nutritionist-Dietitian						

Areas of Skills/Jobs	*Subsector*					
	Primary Care Facility	*Health Care Facility - General Level 1*	*Health Care Facility - General Level 2*	*Health Care Facility - General Level 3*	*Supporting Services - Finance (Health Maintenance Organization)*	*Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)*
Occupational Therapist						
Online Course Developers						
Optician						
Optometrist						
Patient Support Service Officer/Patient Service Associate						
Pediatrician						
Pharmacist						
Pharmacist Aide						
Pharmacy Technician/ Pharmacy Assistant						
Physical Therapist						
Physical Therapy Technician						
Preventive Health (HIMS)						
Primary Care Physician						
Professional Nurse						
Programmer						
Psychologist						
Psychometrician						
Public Health Nurse						
Purchasing Staff						
Radiologic Technologist/ Radiology Technician						

Areas of Skills/Jobs	*Subsector*					
	Primary Care Facility	*Health Care Facility - General Level 1*	*Health Care Facility - General Level 2*	*Health Care Facility - General Level 3*	*Supporting Services - Finance (Health Maintenance Organization)*	*Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)*
Remote Healthcare Management						
Respiratory Therapist						
Safety Officer						
Seamstress						
Social Welfare Assistant						
Social Welfare Managers						
Social Welfare Officer						
Specialized Nurse						
Speech Therapist						
Staff Nurse						
Supervising/ Professional Midwife						
Supply Chain Officers						
Surgeon						
Swabber						
Talent Acquisition and Development Officer						
Therapy Assistant						
Traditional Midwife						
Training Assistant						
Training Specialist						
UM/UR						
Unit Supervisor/Team Lead						
Ward Assistant						

Areas of Skills/Jobs	*Subsector*					
	Primary Care Facility	*Health Care Facility - General Level 1*	*Health Care Facility - General Level 2*	*Health Care Facility - General Level 3*	*Supporting Services - Finance (Health Maintenance Organization)*	*Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)*
Warehouseman/ Warehouse Aide						
Workforce Analyst						

Note. Colored cells mean the specific skills/jobs are hard-to-fill in the subsector.

Skills/Jobs which do not apply to all of the facilities were not considered in this table. This includes Assistant Midwife, Barangay Health Worker, Barangay Nutrition Action Officer, Barangay Nutrition Scholar, Dental Assistant, Dental Laboratory Technician, Dental Technologist, Dermatology Assistant, Dispatch Officer, Guidance Counselor, Medical Controller, Mental Health Counselor, Orthotic Technician, Prosthetic Technician, Sanitation and Disinfection Officer, Wheelchair Technician

Table 27

Common Occupations Identified as Hard-to-Fill by Occupational Type

Professional Services Managers, Supervisors	**4 subsectors**	○ Nurse Manager ○ Chief of Hospital ○ Medical Center Chief ○ Chief of Medical Professional Staff
	5 subsectors	○ Unit Supervisor/Team Lead
Health and Teaching Professionals	**5 subsectors**	○ Medical Technologist ○ Specialized Nurse ○ Dialysis Nurse ○ Gynecologist ○ Pediatrician ○ Surgeon ○ Nutritionist-Dietitian ○ Psychologist ○ Supervising/Professional Midwife ○ Nurse Educator
	6 subsectors	○ Professional Nurse ○ Medical Officer ○ Medical Specialist ○ Medical Doctor ○ Primary Care Physician ○ Pharmacist ○ Public Health Nurse

Health Associate Professionals	**4 subsectors**	○ Radiologic Technologist/Radiology Technician
	5 subsectors	○ **2D Echocardiography Technician** ○ **Nursing Attendant/Assistant**
	6 subsectors	○ Staff Nurse
Health Management and Support Personnel	**3 subsectors**	○ Social Welfare Officer
	4 subsectors	○ IT Personnel ○ IT Supervisor
	5 subsectors	○ **Programmer** ○ **Medical Coding and Billing** ○ Human Resource Officer ○ **Ambulance Driver**

It must be noted that the findings presented in Figure 9 and Table 28 only considered separated employees in 2021. Figure 9 shows that the majority (77.10%) of the employees left the facilities or companies due to resignation. In Table 28 it can be seen that this is true to majority to most of the subsectors' facilities except in the Primary Care Facility subsector, which has total percentage of employee separation due to end of contract.

However, as shared by a facility during the interview, those employees marked as Absence Without Leave (AWOL) were also considered as resigned employees. As such, provided that the survey only included three reasons for leaving (resignation, end of contract, and retirement), others such as AWOL employees might have also been captured.

Further, besides the usual reasons for resignation, many of the respondents cited COVID-19 related concerns (Table 35). The COVID-19 pandemic had become a major factor in increasing the number of resignations not just in the Philippines. For instance, the U.S. labor market had experienced what was referred to as the "Great Resignation" due to the experienced high quit-rate (Parker and Horowitz, 2022).

However despite the results of portrayed in Figure 9, Cecilia (2022) believed that despite the high number of separated employees, the Philippines is a labor surplus economy that will make employees think twice about resigning; Assistant Secretary Rubia-Tutay of the DOLE also stressed that out of 3.39M Filipinos, only 2.5% of the total unemployed from July to October 2021 resigned from work.

Figure 9

Distribution of Separated Employees from the Health Facilities/Supporting Service Companies by Reason for Leaving

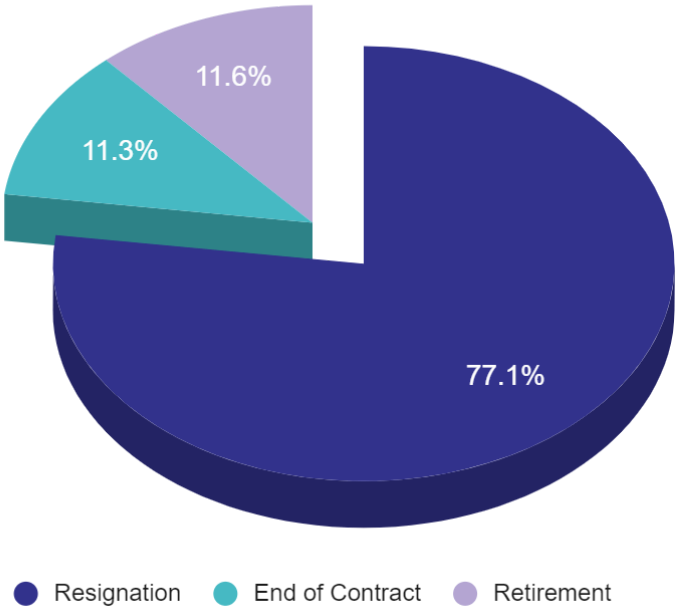


Table 28

Distribution of Separated Employees from the Health Facilities/Supporting Service Companies, by Subsector and Reason for Leaving

Subsector	Reason for Leaving			
	Resignation (%)	End of Contract (%)	Retirement (%)	Total (%)
Primary Care Facility	0.00	100.00	0.00	100.00
Health Care Facility - General Level 1	67.39	14.60	18.01	100.00
Health Care Facility - General Level 2	82.84	1.93	15.24	100.00
Health Care Facility - General Level 3	88.88	7.03	4.09	100.00
Supporting Services - Finance (Health Maintenance Organization)	90.09	5.64	4.27	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	93.10	6.90	0.00	100.00

Among the subsectors, only the Primary Care Facility reports no fast turnover as seen in Table 29. Unfortunately, the specific reasons were not explored as no facility agreed for an interview. Meanwhile, majority or 83.33% of the health facilities from Health Care Facility - General Level 3 are experiencing a fast turnover, meaning these health facilities have difficulty in retaining its employees for more than six months.

The health facilities and supporting service companies with reported fast turnover specified the occupational types that are difficult to retain as summarized in Tables 30 and 31, as well as the reasons for the difficulty in retaining the employees (Table 32).

Table 29

Percentage of Health Facilities/Supporting Service Companies with Fast Turnover per Subsector

Subsector	%
Primary Care Facility	0.00
Health Care Facility - General Level 1	22.73
Health Care Facility - General Level 2	44.44
Health Care Facility - General Level 3	83.33
Supporting Services - Finance (Health Maintenance Organization)	44.44
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	33.33

In Table 30, the majority of the employees with fast turnover are health associate professionals, that is true under all the subsectors except for supporting services subsectors, as presented in Table 31.

On the other hand, employees who are professional services managers and supervisor constitute the lowest percentage of 21.05% as represented by the Health Care Facility - General Level 1 subsector as well as both of the supporting services subsectors (Table 31). In terms of jobs, one supporting service company identified call center personnel, IT technical support personnel, and HR recruitment personnel as difficult to retain.

When turnover rates are analyzed vis-a-vis the occupational types, those that fall under TVET (health associate professionals, personal service and personal care workers, and health management and support personnel) got the highest percentage share. As such, these are possible areas where TESDA and the industry can come in.

For instance, when the reasons for turnover and resignation are evaluated, the industry may explore ways on how to engage the employees for them to consider longer commitments. In the previous slides, we've seen that this problem on long term commitment may also be

linked with the workforce's age. Thus, it may also be a consideration when coming up with programs and targetting the worker groups.

For the educational institutions like TESDA part of the upskilling is to focus on developing higher level programs based on existing staff patterns of DOH and the industry demand to ensure progression of learning and career pathways.

Table 30

Percentage of Health Facilities/Supporting Service with Fast Turnover by Occupational Type

Occupational Type	%
Professional Services Manager and Supervisors	21.05
Health and Teaching and Other Professionals	26.32
Health Associate Professionals	84.21
Personal Service and Personal Care Workers	36.84
Health Management and Support Personnel	47.37

Note. Multiple responses were allowed.

Table 31

Distribution of the Health Facilities/Supporting Service by Subsector and Occupational Types with Fast Turnover

Subsector	Occupational Type					
	Profes-sional Service Managers and Supervisors (%)	Health and Teaching and Other Profes-sionals (%)	Health Associate Profes-sionals	Personal Service and Personal Care Workers	Health Management and Support Personnel	Total (%)
Health Care Facility - General Level 1	23.08	0.00	38.46	23.08	15.38	100.00
Health Care Facility - General Level 2	0.00	20.00	40.00	20.00	20.00	100.00
Health Care Facility - General Level 3	0.00	30.00	40.00	20.00	10.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	16.67	0.00	33.33	0.00	50.00	100.00
Supporting Services - Health Information Management Services	16.67	0.00	33.33	0.00	50.00	100.00

(Clinical and
Documentation Service
Providers)

Note. Multiple responses were allowed. Primary Care Facilities are excluded from the list as they are not applicable to the question.

The health facilities and supporting service companies, categorized according to the type of ownership, identified several reasons for fast turnover as summarized in Table 32. All of the respondents under privately owned facilities or companies identified the geographical location of the firm and poaching as the main reasons.

Interestingly, the lack of access to training received the highest percentage at 33.33% for DOH hospitals despite the training programs that are directly managed by the agency. The 25% of the health facilities also cited having little to no interest in long term commitments. Meanwhile, other government owned health facilities specified the lack of career prospect as its major reason for the difficulty in retaining employees (40%).

Apart from the listed reasons, other facilities mentioned career/employment opportunities from another company/abroad, family, and fear of COVID-19 pandemic as reasons for fast turnover.

Table 32

Distribution of Health Facilities/Supporting Service Companies with Fast Turnover per Reason for the Difficulty in Retaining Employees, and Type of Ownership

Reason	Type of Ownership			
	Privately Owned (%)	Government-Owned		
		DOH Hospitals (%)	Others (%)	Total (%)
Low wage offered compared to other companies	84.62	7.69	7.69	*100.00*
Geographical location of the firm	100.00	0.00	0.00	*100.00*
Unattractive conditions of employment (e.g. risky job, etc.)	57.14	14.29	28.57	*100.00*
Lack of career prospect	40.00	20.00	40.00	*100.00*
Long working hours	77.78	11.11	11.11	*100.00*
Unsocial hours (night shift)	83.33	16.67	0.00	*100.00*
Not enough people who are interested in this type of work	75.00	0.00	25.00	*100.00*
Staff are not interested in long term	75.00	25.00	0.00	*100.00*

commitment				
Poaching	100.00	0.00	0.00	*100.00*
Lack of access to training	66.67	33.33	0.00	*100.00*
Lack of soft skills (e.g written and verbal communication skills)	66.67	0.00	33.33	*100.00*
Problematic workplace attitude	50.00	16.67	33.33	*100.00*

Note. Multiple responses were allowed.

Current employees across the subsectors are distributed according to the percentage of those who will be difficult to replace within three months from resignation as summarized in Table 33. It can be seen that the Primary Care Facility followed by the Health Care Facility - General Level 1 subsectors would relatively deal less with the difficulty of replacing employees.

Meanwhile, less than 10% of the current employees would be difficult to replace for the majority of the supporting services companies; for at least half of the facilities in Health Care Facility - General Level 2 and Level 3, they will experience trouble replacing more than 50% of their current employees. One possible reason for this is because these facilities (i.e General Level 2 and 3) have highly technical occupations and in need of more specialty health workers.

For the primary care facilities, the ability to easily look for replacements may be due to its nature and coverage. For instance, in the case of standalone clinics, health practitioners are usually family members while some are appointed/designated in the case of the LGUs.

Table 33

Distribution of Current Employees who would be Difficult to Replace Within Three Months from Resignation

Subsector	Percentage of Facilities (%)				
	None	< 10	10-50	> 50	Total %
Primary Care Facility	66.67	0.00	33.33	0.00	100.00
Health Care Facility - General Level 1	36.36	31.82	18.18	13.64	100.00
Health Care Facility - General Level 2	0.00	33.33	11.11	55.56	100.00
Health Care Facility - General Level 3	0.00	16.67	33.33	50.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	77.78	0.00	22.22	100.00

Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	66.67	33.33	0.00	100.00

Relative to the health facilities and supporting service companies that have a percentage of their employees who will be difficult to replace in case of resignation, specific occupations are listed in Table 34. When mapped to the occupational types, the most common jobs can be categorized as Health and Teaching and Other Professionals, and Health Management and Support Personnel. The following are the jobs commonly difficult to replace across the different subsectors:

- Doctors;
- Nurses (e.g Dialysis Nurse, Specialized Care Nurse, Clinic/Company Nurse);
- Pharmacist (Licensed, Clinical Pharmacist);
- Computer and IT-related jobs (e.g programmers, encoders, medical coder, developers);
- Allied health (e.g medical and radiologic technologists); and
- Finance-related (e.g accountants, CPA)

During the validation, the AHMOPI noted that for occupations falling under the Supporting Services - Finance (HMO) subsector, the major responsibility of an HMO is to payout services rendered / contractual obligations to service providers. To date, there is around 8M-10M plan holders, 30 SEC licensed/registered HMO, about 1,800 accredited healthcare providers, and 26,000-30,000 accredited physicians in the country.

Moreover, for the most common jobs that are difficult to replace, these jobs may be linked to the shortage of workers, salary, and lack of qualified personnel. As an example, the Doctors to Population in the Philippines in 2021 is 3.7 for every 10,000 — far from the World Health Organization's recommendation of 10:10,000 (Bonquin, 2022). As such, making it one of the jobs difficult to replace in case of resignation.

In terms of nurses, a 2019 explanatory note bill on the Comprehensive Nursing Law of 2019 (Senate Bill No. 325, 2019) and even a 2022 editorial piece (Inquirer, 2022) stated that the ratio of nurses remain to be 1:50, far from the ideal 1:12 of DOH. In a 2022 report, in PGH alone, the ratio in wards is 1:20 patients (Tamayo et.al, 2022).

Table 34

Identified Jobs that will be Difficult to Replace in Case of Resignation

Subsector	Jobs that are difficult to replace
Primary Care Facility	- Doctor - Nurse/Public health Nurse - Medical Technologist - Municipal Health Officer

	- Cardiovascular Technologist
Health Care Facility - General Level 1	- Dialysis Nurse - Dialysis Technician - Nurse - Medical Officers - Respiratory Therapists - Accountants - Doctor - Chief of Hospital - Administrative Officer IV - Pharmacist - Dentist - Chief Nurse - Human Resources Officer - Administrative Officer IV - Nutritionist - Administrative Officer V - Medical Specialist - Cardiovascular Technologist - Registered Medical/ Radiologic Technologist - Midwife - Information Technology Personnel - Engineering Staff
Health Care Facility - General Level 2	- Pharmacist - Nurse - Medical Technologist - Licensed Nurses - Chief Accountant - Staff Nurses - Staff Medical Social Worker - Staff Pharmacist / Clinical Pharmacist - Nurse Assistant - Doctors - Administrative aide - Radiologic Technologist - Medical Officer - Medical Specialist - Cardio-Respiratory Therapist - Nursing Services - Information Technology - Engineering Staff

Health Care Facility - General Level 3	- Medical Specialists - Specialized Care Nurses - Psychologist - Staff Nurses - Specialty Clinic Nurses - Financial Planning - Nurses - Allied Health (Rad. Tech, Med. Tech, Pulmo, Occupational Therapist, Physical Therapist, Pharmacist) - Echo Technicians - Vascular Technicians
Supporting Services - Finance (Health Maintenance Organization)	- Actuarial - IT - Finance/CPA - Member Relations Assistant - Developers - Nurses - Statistician - Clinic Nurses - Medical Technologists - Customer Care Manager - Clinic / Company Nurses - Medical Director - HR - Call Center - Accounting Manager - Admin Staff - Medical Liaison Officer (RN) - Auditor - Accounting Clerk - Claims Analyst - Programmers - Internal Audit Staff
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	- Coder - AR Executive - Clinical Documentation Specialist - Trainer Medical Coder - Quality Assurance Medical Coder - USRN Trainer - Manager - Project Lead - Licensed Pharmacists

Reasons for employee resignations are listed in Table 35. The majority of the reasons, such as the desire to pursue greener pastures for career growth, move jobs or change careers for

a higher salary or compensation, are shared by all subsectors. For instance, one interview participant mentioned that some employees resign to start their own business.

Many of the facilities identified overseas employment, while others move jobs in other facilities within the country. Furthermore, personal and family reasons are common reasons such as relocation, settling down, or pursuing further education.

On another note, COVID-19 has indeed affected the labor supply and demand as on top of the reasons for fast turnover, the pandemic-related concerns had been cited as a reason for resignation. Others are in response to work performance such as failing the probationary period.

Although the salary in some facilities are competitive or relatively higher, some employees only view local employment as a short-term engagement as they seem to be more attracted to overseas employment according to a General Level 1 Hospital. The situation is particularly observed in nurses and as such, lacking healthcare workers in the country. It may be recalled that nurses are among the common occupations that are difficult to replace in cases of resignation (Table 34).

Thus, although there is a high demand for workers in the health sector abroad particularly in Europe and the Middle East, the Philippine Overseas Employment Administration (POEA) suspended the processing and deployment of Filipino healthcare workers after reaching the annual deployment cap of 6,500 (Patinio, 2021). In 2020, the deployment cap was at 5,000 due to the increasing need for healthcare workers amidst the pandemic.

Citing the availability of better opportunities abroad, a nurse, for instance, receives the following monthly salary, on average from the United States, United Kingdom, and Canada, respectively: PhP 198, 835; PhP 109, 827; and PhP 168, 461 (Baclig, 2021).

Table 35

Identified Reasons for Resignation by Subsector

Subsector	Reasons for Resignation
Primary Care Facility	
Health Care Facility - General Level 1	- Health reasons (e.g. fear of contracting covid-19) - Salary/Lack of compensation and benefits - Area of assignment/Moved to another place - Workload - Bigger opportunity/greener pasture (e.g. overseas job, transfer to bigger hospitals) - Domestic/family/personal matters - Professional growth/career advancement - End of contract - To venture on other profession

Health Care Facility - General Level 2	- Opportunity to work abroad/other hospital - Personal reasons (e.g. health, family) - Financial advancement (i.e job opportunity with higher salary) - DOH and RHU job openings - Return to hometown - Changing career - Studies (e.g. further studies, review for board)
Health Care Facility - General Level 3	- Greener pasture (e.g. higher income, opportunities abroad) - Family concern - Career growth - Burn out - Shifting schedule - Transfer of living place - Pandemic related anxiety (i.e. fear of contracting covid-19)
Supporting Services - Finance (Health Maintenance Organization)	- Family/personal (e.g. health) - Career opportunities - Geographical location of the firm (e.g. return to province, relocation) - Not enough people who are interested in this type of work - Pandemic-related concerns (e.g. employees prefers work from home arrangement) - Did not pass the probationary period - Did not hit the required sales quota (for supporting services)
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	- Better offer (i.e. pay) - Family situation - Further studies - Career opportunities to work abroad - Putting up their own business - Personal/life events (i.e. marriage, moving to provinces)

Note. Gray cells indicate that no facility in the subsector provided a response.

Considering the different occupational types, a list of all the critical skills/jobs in the Health sector was developed to determine which occupations are relevant to the facilities and their subsectors over the next five years. Moreover, as applicable, respondents were asked to evaluate the (1) projected trends (i.e. shortage, no change, surplus re skills/jobs supply), (2) nature of occupation whether hard-to-fill or not, and (3) if addressable by TVET programs.

From the projected distribution of the skills supply in Table 36 it can be seen that for the next five years, 16% of the listed skills/jobs were identified by most of the facilities (i.e according to 80% to 99%) as not applicable. Among these, the majority are Health Associate

Professionals. This occupational type include those that already have existing Training Regulations namely Prostethic Technician and Orthotic Technician.

Additionally, 50% of those that are projected to have no change for more than 60% of the facilities are in Health Management and Support Personnel: administrative officer, administrative assistant, purchasing staff, medical coding and billing, social welfare managers, human resource officers, and data encoders.

Furthermore, staff nurses are projected to have the highest shortage at 55.10%, followed by professional nurses (54%), and medical technologists (36.73%). This is consistent with the WHO Report stating that 4.6 million nurses worldwide are expected to be in shortage by 2030, and some 250,000 in the Philippines (World Health Organization, 2020).

In cases where there is a surplus of workers, it only accounts for 2% to 4% of all responding facilities.

Besides those in the list, other cited jobs with corresponding projection of skills supply are: (1) Certified Public Accountant (shortage, hard-to-fill, addressable by TVET), (2) Social Media Manager (no change, hard-to-fill, addressable by TVET), and (3) Financial Analyst (shortage, hard-to-fill, not addressable by TVET).

Table 36

Projected Distribution of the Skills Supply for the next 5 years

Areas of Skills/Jobs	Changes				
	Shortage	No Change	Surplus	N/A	Total
2D Echocardiography Technician	11.11	33.33	0.00	55.56	
Accounts Officer	6.25	54.17	0.00	39.58	
Actuarial Assistant	14.89	10.64	0.00	74.47	
Administrative Aide	8.70	54.35	2.17	34.78	
Administrative Assistant	8.16	75.51	0.00	16.33	
Administrative Officer	4.00	82.00	0.00	14.00	
Aged Care/Nursing Home Director	4.66	18.60	0.00	76.74	
Ambulance Care Assistant	6.98	20.93	0.00	72.09	
Ambulance Driver	8.70	69.56	0.00	21.74	
Ambulance Quality Assurance	6.98	18.60	0.00	74.42	
Assistant Clinical Director	2.27	38.64	0.00	59.09	
Assistant Midwife	2.33	18.60	0.00	79.07	
Attorney	2.17	34.78	2.17	60.88	
Audiometrician	6.98	20.93	0.00	72.09	
Barangay Health Worker	0.00	9.30	0.00	90.70	
Barangay Nutrition Action Officer	2.33	9.30	0.00	88.37	
Barangay Nutrition Scholar	2.33	9.30	0.00	88.37	

Biomedical/Medical Equipment Technician	6.67	33.33	0.00	60.00
Birth Assistant	0.00	16.28	0.00	83.72
Business Intelligence & Product Management Officer	4.35	21.74	2.17	71.74
Call Taker	6.38	31.92	0.00	61.70
Caregiver/Home Health Care Nrse	9.09	13.64	0.00	77.27
Chief of Hospital	4.44	75.56	0.00	20.00
Chief of Medical Professional Staff	4.55	54.55	0.00	40.90
Clinic Assistant	8.89	26.67	0.00	64.44
Clinical Director	4.55	43.18	0.00	52.27
Clinical Instructor	6.67	17.78	0.00	75.55
Computer Maintenance Technologist	12.77	29.79	0.00	57.44
Contact Tracer	4.44	33.33	0.00	62.23
Cook	2.17	69.57	0.00	28.26
Customer Service Representative/ Helpdesk	11.76	43.14	0.00	45.10
Data Controller	6.25	45.83	0.00	47.92
Data Encoder	6.38	61.70	0.00	31.92
Dental Aide/Dental Laboratory Aide	4.44	35.56	0.00	60.00
Dental Assistant	6.67	33.33	0.00	60.00
Dental Equipment Laboratory Technician	0.00	18.60	0.00	81.40
Dental Laboratory Technician	4.65	16.28	0.00	79.07
Dental Technologist	0.00	18.18	0.00	81.82
Dentist	8.33	58.34	0.00	33.33
Dermatologist	10.87	32.61	0.00	56.52
Dermatology Assistant	0.00	11.63	0.00	88.37
Dialysis Nurse	31.11	13.33	0.00	55.56
Dietetic Technician	0.00	13.95	0.00	86.05
Dispatch Officer	0.00	18.60	0.00	81.40
Emergency Medical Technician - Advance	11.11	13.33	0.00	75.56
Emergency Medical Technician - Paramedic	13.33	17.78	0.00	68.89
Engineer	6.38	36.17	0.00	57.45
Engineering Assistant	2.33	23.25	0.00	74.42
Financial and Management Officer	6.12	53.06	0.00	40.82
Food Preparation Assistant	2.17	56.53	2.17	39.13
Graphic Artists	13.33	11.11	0.00	75.56
Guidance Counselor	0.00	16.28	0.00	83.72
Gynecologist	18.76	52.08	2.08	27.08
Health Education and Promotion Officer	6.53	41.30	0.00	52.17

Health Information Management and Bioinformatics	2.22	24.45	2.22	71.11
Health Physicist	6.82	11.36	2.27	79.55
Health/Sanitary Inspector	0.00	44.19	0.00	55.81
Home Health Aides	2.33	6.97	0.00	90.70
Hospital Attendant	15.56	35.56	0.00	48.88
Hospital Housekeeper	10.87	58.70	0.00	30.43
Human Resource Officer	7.84	62.75	1.96	27.45
In-Patient Coordinator	8.16	40.82	2.04	48.98
IT Assistant Supervisor	12.77	17.02	2.13	68.08
IT Personnel	22.00	46.00	4.00	28.00
IT Supervisor	16.00	36.00	2.00	46.00
Laboratory Aide	8.70	56.52	0.00	34.78
Laundry Worker	2.17	69.57	0.00	28.26
Logistics Manager	0.00	34.09	0.00	65.91
Marketing Assistant	0.00	48.94	0.00	51.06
Mechanical Ventilator Technician	2.33	16.27	0.00	81.40
Medical Center Chief	2.27	40.91	0.00	56.82
Medical Claims Associate	7.84	45.10	3.92	43.14
Medical Claims Representative	6.00	58.00	2.00	34.00
Medical Coding and Billing	10.20	63.27	2.04	24.49
Medical Controller	2.27	13.64	0.00	84.09
Medical Doctor	26.00	42.00	2.00	30.00
Medical Laboratory Technician	22.92	37.50	2.08	37.50
Medical Liaison	6.38	42.55	2.13	48.94
Medical Officer	31.91	38.30	4.26	25.53
Medical Provider and Membership Relations Officer	6.25	35.42	0.00	58.33
Medical Records Technician	0.00	48.89	0.00	51.11
Medical Secretary	0.00	44.19	0.00	55.81
Medical Specialist	29.79	42.55	2.13	25.53
Medical Technologist	36.73	48.98	0.00	14.29
Medical X-ray Technician	10.42	52.08	0.00	37.50
Mental Health Counselor	0.00	15.91	0.00	84.09
MIS Technical Support	8.51	29.79	2.13	59.57
Nurse Educator	10.87	26.09	0.00	63.04
Nurse Manager	18.75	56.25	0.00	25.00
Nursing Attendant/Assistant	31.91	51.07	0.00	17.02
Nutrition Action Officer	2.33	20.93	0.00	76.74

Nutrition Program Coordinator	2.33	20.93	0.00	76.74
Nutritionist Inventory Supervisor	0.00	20.93	0.00	79.07
Nutritionist-Dietitian	12.50	68.75	0.00	18.75
Occupational Therapist	13.64	13.64	0.00	72.72
Online Course Developers	8.70	10.87	0.00	80.43
Optician	6.52	28.26	0.00	65.22
Optometrist	6.67	26.67	0.00	66.66
Orthotic Technician	0.00	11.63	0.00	88.37
Patient Support Service Officer/Patient Service Associate	4.44	37.78	2.22	55.56
Pediatrician	16.67	54.17	2.08	27.08
Pharmacist	25.00	60.42	2.08	12.50
Pharmacist Aide	4.35	50.00	0.00	45.65
Pharmacy Technician/Pharmacy Assistant	8.51	44.68	0.00	46.81
Physical Therapist	10.87	32.61	0.00	56.52
Physical Therapy Technician	2.27	27.27	0.00	70.46
Preventive Health (HIMS)	0.00	20.00	0.00	80.00
Primary Care Physician	20.83	47.92	0.00	31.25
Professional Nurse	54.00	24.00	4.00	18.00
Programmer	17.02	27.66	2.13	53.19
Prosthetic Technician	0.00	9.30	0.00	90.70
Psychologist	14.89	27.66	0.00	57.45
Psychometrician	13.04	26.09	0.00	60.87
Public Health Nurse	17.39	19.57	0.00	63.04
Purchasing Staff	4.08	67.35	0.00	28.57
Radiologic Technologist/Radiology Technician	20.41	59.18	0.00	20.41
Remote Healthcare Management	4.45	11.11	2.22	82.22
Respiratory Therapist	13.04	19.57	0.00	67.39
Safety Officer	2.13	57.44	2.13	38.30
Sanitation and Disinfection Officer	2.27	34.09	0.00	63.64
Seamstress	0.00	31.11	0.00	68.89
Social Welfare Assistant	4.55	27.27	0.00	68.18
Social Welfare Managers	4.55	68.18	0.00	27.27
Social Welfare Officer	4.35	63.04	0.00	32.61
Specialized Nurse	35.42	16.66	0.00	47.92
Speech Therapist	4.65	6.98	0.00	88.37
Staff Nurse	55.10	28.57	0.00	16.33
Supervising/Professional Midwife	8.89	57.78	0.00	33.33

Supply Chain Officers	0.00	46.67	0.00	53.33
Surgeon	18.75	54.17	2.08	25.00
Swabber	9.09	52.27	0.00	38.64
Talent Acquisition and Development Officer	6.12	30.62	2.04	61.22
Therapy Assistant	0.00	16.28	0.00	83.72
Traditional Midwife	6.82	27.27	0.00	65.91
Training Assistant	4.08	26.53	2.04	67.35
Training Specialist	5.88	39.22	0.00	54.90
UM/UR	2.17	15.22	0.00	82.61
Unit Supervisor/Team Lead	16.00	60.00	0.00	24.00
Ward Assistant	6.67	35.56	0.00	57.77
Warehouseman/Warehouse Aide	4.35	39.13	0.00	56.52
Wheelchair Technician	2.33	9.30	0.00	88.37
Workforce Analyst	2.13	23.40	0.00	74.47

When Table 36 is cross analyzed with the occupational type, the following are the most common requirements per category:

Table 37

Jobs Identified as Not Applicable to Most of the Participating Facilities, by Occupational Type

Health and Teaching Professionals	○ Speech Therapist ○ Online Course Developers
Health Associate Professionals	○ Dental Equipment Laboratory Technician ○ Dental Technologist ○ Dermatology Assistant ○ Dietetic Technician ○ Orthotic Technician ○ Prosthetic Technician ○ Therapy Assistant ○ Mechanical Ventilator Technician ○ Wheelchair Technician ○ Dispatch Officer
Personal Service and Personal Care Workers	○ Home Health Aides ○ Birth Assistant
Health Management and Support Personnel	○ Barangay Health Worker ○ Barangay Nutrition Scholar ○ Barangay Nutrition Action Officer ○ Mental Health Counselor ○ Medical Controller ○ Guidance Counselor

	○ UM/UR ○ Remote Healthcare Management ○ Preventive Health (HIMS)

Note. The list of requirements are according to 80%-99% of the participating facilities.

Table 38

Jobs Projected to have No Change for the next 5 years

Professional Services Manager, Supervisors	○ Chief of Hospital
Health and Teaching Professionals	○ Nutritionist-Dietitian ○ Pharmacist [a]
Health Associate Professionals	○ Ambulance Driver
Personal Service and Personal Care Workers	○ Laundry Worker ○ Cook
Health Management and Support Personnel	○ Administrative Officer ○ Administrative Assistant ○ Purchasing Staff ○ Medical Coding and Billing [a] ○ Social Welfare Officer ○ Human Resource Officer ○ Data Encoder [a] ○ Social Welfare Managers

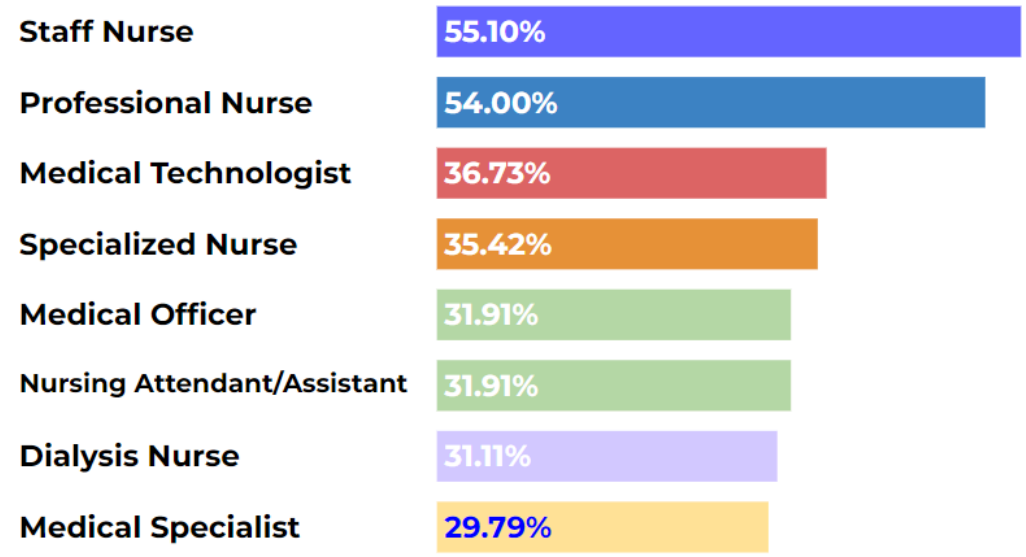
Note. The list of requirements are according to more than 60% of the facilities.

[a] Also identified as jobs that are most difficult to replace in case of resignation.

For the requirements identified as most difficult to replace in case of resignation but also projected to have no change in the next five years, the gap may be a concern relative to ensuring the availability of talent. This is because those with no change may not be considered as a priority for workforce development because of the anticipated supply.

For Medical Coding and Billing, it was highlighted during the results validation that ICD-10 coding is required in the processing of PhilHealth. ICD-10 is a Universal Code provided by the WHO, with a required training to be an ICD-10 certified medical coder and biller. For the case of HMO setting, any and all payment, according to the AHMOPI is under the ICD-10 coding. The representative from AHMOPI also shared that PhilHealth has plans to migrate from ICD-10 to ICD-9 which is planned to be implemented in 2025.

Figure 10
Jobs with Projected Shortage in the next 5 years



For Figure 10, all, except Staff Nurse and Nursing Attendant/Assistant, falls under the Health and Teaching Professionals occupational type. Most of the occupations with projected shortage requires higher level education. Many of these are nursing-related, which is also the second topmost occupation that are difficult to replace in case of resignation.

Additionally, for the Nursing Attendant, TESDA has a corresponding program of Health Care Services NC II. As such, strengthening the implementation of the program may aid in addressing the needed talent supply.

In the consultation with the DOH during the validation meeting relative to the proposed DOH Administrative Order on the Implementing Guidelines for the Bridging Program of Clinical Care Associates (CCA), DOH noted that graduates of TESDA's Health Care Services NC II will still be considered as part of the workforce pool. The CCA will have a Ward Assistant position title that is different from the Nurse Attendants. Moreover, the DOH will still be recalibrating the tasks and functions of CCA with the Commission on Higher Education (CHED).

On another note, Table 39 presents the distribution of the health facilities and supporting service companies on the skills needs/requirements of the relevant occupations that may be addressable by TVET. The identified jobs in Table 36 that has the highest shortage in skills supply (staff nurse, professional nurse, and medical technologist) can all be addressed by TVET according to some 37% to 54% of the participating facilities. However, when the data on Table 36 and 39 are compared it may be observed that the jobs that are most addressable by TVET programs like seamstress, warehouseman/warehouse aide, and ambulance driver are usually projected by facilities to either stay the same or inapplicable.

When linked to Table 26 (hard-to-fill jobs), many of the hard-to-fill occupations especially in the Health and Teaching and Other Professionals occupational type are considered by some

to majority of the facilities (25% to 60%) as addressable by TVET (e.g. nutrition action officer, graphic artists, physical therapist); Whereas, IT-related jobs identified as hard-to-fill (e.g programmers, encoders, medical coders, and developers) all are said to be addressed by TVET programs and have existing Training Regulations to support the workforce development for these requirements.

Further, the facilities consider that all occupations in Table 39 can be addressed by TVET except Dermatologist. Interestingly, even the skills needs/requirements of those jobs that require higher degrees (e.g. Master's or Doctorate) such as medical chiefs and specialty doctors (e.g. surgeon, gynecologist) are still perceived by some facilities as addressable by TVET programs. Still, the majority of the facilities who participated in the survey maintained that high value services such as the mentioned medical chiefs (e.g. chief of hospital) do not have skills needs or requirements that can be addressed by TVET institutions since these jobs require higher learning.

The differences in the responses may be partly due to the lack of understanding to TVET. For instance, during some of the interviews conducted, the participants asked about TVET coverage and how to determine whether the skills needs may sufficiently be addressed by TVET.

Another factor is the changing profile of TVET clients as reflected in the results of TESDA's Study on the Employability of TVET Graduates (SETG). In the 2017 SETG study, the potential TVET clientele was defined as "mainly high school graduates" with a share of 42% from the total number of respondents. Although it is still noticeable that some TVET graduates have post-degrees before taking TVET programs. However, when compared to the recent data, including the 2020 SETG, the highest share (28%) of TVET graduates were bachelor's degree holders before attending TVET program. According to the study, "this might show that many Filipinos, even those with high educational attainment, believe that with TESDA training, more employment opportunities will come along their way" (Technical Education and Skills Development Authority, 2020). As such, even the jobs/skills requirements that usually require a bachelor's degree to do the job may still be considered as addressable by TVET as reflected in Table 39.

Moreover, related tables (Table 26 and Table 36) and Table 39 are presented in a single table found in Annex A.

Table 39
Percentage of Health Facilities/Supporting Service Companies by Skills Needs/Requirements Addressable by TVET programs

Areas of Skills/Jobs	%
Medical Center Chief	15.79
Chief of Hospital	22.58
Chief of Medical Professional Staff	20.83
Clinical Director	5.56
Assistant Clinical Director	6.25

Aged Care/Nursing Home Director	9.09
Nurse Manager	28.13
Social Welfare Managers	23.08
Unit Supervisor/Team Lead	27.27
Medical Doctor	24.14
Medical Officer	26.67
Medical Specialist	25.81
Surgeon	13.79
Primary Care Physician	17.86
Gynecologist	17.24
Dermatologist	0.00
Pediatrician	17.86
Psychologist	12.50
Nutritionist-Dietitian	33.33
Dentist	11.11
Optician	7.14
Psychometrician	6.67
Optometrist	7.69
Audiometrician	18.18
Pharmacist	29.41
Professional Nurse	33.33
Dialysis Nurse	35.29
Specialized Nurse	33.33
Public Health Nurse	33.33
Medical Technologist	32.35
Occupational Therapist	18.18
Physical Therapist	26.67
Speech Therapist	20.00
Respiratory Therapist	15.38
Health Physicist	25.00
Nutrition Action Officer	33.33
Nutrition Program Coordinator	25.00
Supervising/Professional Midwife	41.67
Health Education and Promotion Officer	36.84
Training Specialist	18.18
Training Assistant	12.50
Graphic Artists	60.00
Online Course Developers	44.44
Nurse Educator	27.78

Clinical Instructor	20.00
Hospital Attendant	68.42
Staff Nurse	37.14
Nursing Attendant/Assistant	57.58
Clinical Assistant	50.00
Ward Assistant	58.82
Dental Laboratory Technician	42.86
Dental Assistant	50.00
Dental Technologist	42.86
Pharmacy Technician/Pharmacy Assistant	63.16
Dermatology Assistant	20.00
Laboratory Aide	50.00
Traditional Midwife	41.67
Assistant Midwife	33.33
Nutritionist Inventory Supervisor	37.50
Radiologic Technologist/Radiology Technician	35.48
Medical Laboratory Technician	43.48
Medical X-ray Technician	52.00
Physical Therapy Technician	45.45
Therapy Assistant	33.33
Emergency Medical Technician - Paramedic	58.33
Emergency Medical Technician - Advance	33.33
2D Echocardiography Technician	58.82
Dental Equipment Laboratory Technician	33.33
Orthotic Technician	50.00
Prosthetic Technician	50.00
Wheelchair Technician	66.67
Mechanical Ventilator Technician	75.00
Dietetic Technician	40.00
Ambulance Care Assistant	77.78
Dispatch Officer	42.86
Ambulance Quality Assurance	62.50
Ambulance Driver	82.14
Safety Officer	56.52
Health/Sanitary Inspector	53.85
Sanitation and Disinfection Officer	50.00
Pharmacist Aide	61.11
Caregiver/Home Health Care Nurse	62.50
Home Health Aides	33.33

Birth Assistant	60.00
Dental Aide/Dental Laboratory Aide	61.54
Warehouseman/Warehouse Aide	82.35
Supply Chain Officers	31.25
Logistics Manager	33.33
Cook	67.86
Food Preparation Assistant	69.57
Laundry Worker	70.37
Seamstress	80.00
Hospital Housekeeper	76.92
Medical Secretary	46.67
Medical Records Technician	64.71
Mental Health Counselor	40.00
Guidance Counselor	16.67
Social Welfare Officer	40.00
Social Welfare Assistant	45.45
Barangay Health Worker	33.33
Barangay Nutrition Scholar	50.00
Barangay Nutrition Action Officer	50.00
Contact Tracer	66.67
Swabber	75.00
Medical Controller	33.33
Attorney	6.67
Engineer	17.65
Engineering Assistant	44.44
Financial and Management Officer	15.38
Administrative Officer	32.43
Administrative Assistant	42.86
Administrative Aide	56.00
Patient Support Service Officer/Patient Service Associate	41.18
Data Controller	40.91
Call Taker	62.50
Data Encoder	61.54
Programmer	57.89
IT Supervisor	52.00
IT Assistant Supervisor	61.54
IT Personnel	65.52
Computer Maintenance Technologist	64.71

MIS Technical Support	66.67
Human Resource Officer	43.75
Talent Acquisition and Development Officer	22.22
Customer Service Representative/ Helpdesk	40.00
Purchasing Staff	32.26
Medical Liaison	31.58
Marketing Assistant	13.64
Medical Provider and Membership Relations Officer	15.79
Accounts Officer	29.63
Workforce Analyst	33.33
Business Intelligence & Product Management Officer	25.00
Actuarial Assistant	45.45
Remote Healthcare Management	28.57
Preventive Health (HIMS)	37.50
UM/UR	16.67
Medical Coding and Billing	63.33
Medical Claims Representative	51.85
Medical Claims Associate	50.00
Health Information Management and Bioinformatics	45.45
In-Patient Coordinator	43.48

Note. The denominator used to get the percentage per skill was based on the total number of responses in C11.3

For the recruitment conducted in 2021, majority (78.49%) of the vacancies in the facilities require college graduates, followed by college undergraduate qualification at 5.74% (Table 40). This is true for all the subsectors, with the Finance (HMO) subsector requiring 98.48% of the vacancies to at least have a college degree (Table 41).

Table 40

Distribution of the Vacancies in the Health Facilities/Supporting Service Companies by Required Educational Qualification

Educational Qualification	%
HS Grad	3.22
JHS Grad	0.19
SHS Undergrad	0.19
SHS Grad	0.24
TechVoc Undergrad	1.12
TechVoc Grad	3.73

College Undergrad	5.74
College Grad	78.49
Master's Degree	2.61
Doctoral Degree	4.47
Total	100.00

It is evident in Table 41 how most of the occupations in the supporting service companies need a higher level of education/qualification.

Only a few vacancies require techvoc undergraduates (1.12%) and techvoc graduates (3.73%). But the distribution is lower than in Senior High School undergraduates and graduates, which may be attributed to the country's old education system.

In addition, the Primary Care Facility and HIMS (Clinical and Documentation Service Providers) do not have vacancies that require techvoc undergrad or graduates, which is the same with Table 15 showing the distribution of current employees by the highest educational attainment.

Table 41

Distribution of the Vacancies in the Health Facilities/Supporting Service Companies by Subsector and Required Educational Qualification

Required Educational Qualification	Subsector					
	Primary Care Facility	Health Care Facility/Hospital			Supporting Services	
		General Level 1	General Level 2	General Level 3	Finance (Health Maintenance Organization)	Health Information Management Services (Clinical and Document Service Providers)
HS Grad	0.00	5.97	3.46	0.83	0.00	0.00
JHS Grad	0.00	0.23	0.00	0.83	0.00	0.00
SHS Undergrad	0.00	0.00	0.56	0.83	0.00	0.00
SHS Grad	0.00	0.23	0.00	0.83	0.27	0.00
TechVoc Undergrad	0.00	2.14	0.66	0.83	0.00	0.00
TechVoc Grad	0.00	3.89	8.66	5.00	0.04	0.00

College Undergrad	3.33	9.36	5.23	1.83	0.50	6.67
College Grad	93.33	70.91	66.01	81.83	98.48	90.00
Master's Degree	0.00	2.00	4.31	6.33	0.56	3.33
Doctoral Degree	3.33	5.28	11.11	0.83	0.16	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00

In Table 42, the distribution of the employees who were promoted to managerial and supervisory positions in 2021 were presented showing that for the most of the subsectors, there were only less than 10% promoted employees.

On the other hand, majority (66.67%) of the participating facilities from Primary Care Facility subsector accounted more than 50% of their employees as promoted while majority (66.67%) of the facilities in Supporting Services - HIMS (Clinical and Documentation Service Providers) identified 10-50% of promoted employees.

All of the subsectors' facilities have promoted employees, except for Health Care Facility - General Level 1 with three facilities (13.64%) who responded that no employees had been promoted as managers and supervisors in 2021. When cross checked with the type of ownership in Table 43, this accounts for other government-owned facilities. Moreover, per ownership type, majority to all of the health facilities and supporting services have only less than 10% of promoted employees.

Table 42

Distribution of the Employees Promoted to Managerial and Supervisory Positions per Subsector

Subsector	Percentage of Facilities (%)				
	None	< 10	10-50	> 50	Total %
Primary Care Facility	0.00	33.33	0.00	66.67	100.00
Health Care Facility - General Level 1	13.64	63.64	0.00	22.73	100.00
Health Care Facility - General Level 2	0.00	77.78	11.11	11.11	100.00
Health Care Facility - General Level 3	0.00	66.67	16.67	16.67	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	88.89	11.11	0.00	100.00

Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	33.33	66.67	0.00	100.00

Table 43

Distribution of the Employees Promoted to Managerial and Supervisory Positions per Type of Ownership

Type of Ownership	Percentage of Facilities (%)				
	None	<10	10-50	>50	Total %
Private	0.00	75.00	21.43	3.57	100.00
DOH Hospitals	0.00	100.00	0.00	0.00	100.00
Other Government Owned	31.82	54.55	9.09	4.55	100.00

All of the subsectors have structured programs for managing high potential employees, including all of the three facilities in Supporting Services - HIMS (Clinical and Documentation Service Providers) subsector (Table 44).

In terms of ownership (Table 45), at least half of the facilities have structured programs, with the highest percentage of facilities identified as other government owned facilities at 81.82%.

Various research and articles indicate that managing high potential employees is proven to be beneficial to a company/organization especially to attract, engage, and retain employees. Consequently, this may translate into a more productive workforce and better business performance.

Table 44

Percentage of Facilities with Structured Program for Managing High Potential Employees per Subsector

Subsector	%
Primary Care Facility	33.33
Health Care Facility - General Level 1	83.36
Health Care Facility - General Level 2	66.67
Health Care Facility - General Level 3	83.33
Supporting Services - Finance (Health Maintenance Organization)	66.67
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	100

Table 45

Percentage of Facilities with Structured Program for Managing High Potential Employees per Type of Ownership

Type of Ownership	%
Private	75.00
DOH Hospitals	50.00
Other Government Owned	81.82

For most of the subsectors's facilities, 10-50% of the current employees are exhibiting outstanding performance (Table 46). However, for the Health Care Facility - General Level 3 subsector, the percentage are evenly distributed at 33.33% accounting for less than 10% to more than 50% of the employees. Still, it might be a good indication that all of the facilities are able to classify a percentage of the employees as contributing to the outstanding performance of the health facility/supporting service company.

Table 46

Distribution of Employees Contributing Outstanding Performance to the Facility per Subsector

Subsector	Percentage of Facilities (%)				
	None	<10	10-50	>50	Total %
Primary Care Facility	0.00	0.00	66.67	33.33	100.00
Health Care Facility - General Level 1	0.00	22.73	50.00	27.27	100.00
Health Care Facility - General Level 2	0.00	22.22	55.56	22.22	100.00
Health Care Facility - General Level 3	0.00	33.33	33.33	33.33	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	0.00	77.78	22.22	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	33.33	66.67	0.00	100.00

Table 47 shows that not all subsectors have career/structured succession planning policies/practices in place for current and future development. One of the participating facility

(11.11%) under the Supporting Services - Finance (HMO) responded none. The table also reveals that the percentage of facilities that support such policies is highest in Health Care Facility - General Level 3 and Supporting Services - HIMS (Clinical and Documentation Service Providers) where for at least half of the facilities, more than 50% of the employees receive support.

Table 47

Distribution of Employees Supported by Career/Structured Succession Planning Policy/Practices for Current and Future Development per Subsector

Subsector	Percentage of Facilities (%)				
	None	<10	10-50	>50	Total %
Primary Care Facility	0.00	33.33	33.33	33.33	0.00
Health Care Facility - General Level 1	0.00	27.27	45.46	27.27	100.00
Health Care Facility - General Level 2	0.00	33.33	55.56	11.11	100.00
Health Care Facility - General Level 3	0.00	33.33	16.67	50.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	11.11	22.22	55.56	11.11	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	33.33	66.67	100.00

4.3 Skills in Your Business

The information about the employees' performance evaluation and related questions, as well as the percentage of employees related to specific skills requirements are discussed in this section.

The data presented in Table 48, Figure 11, and Table 49 do not consider the performance of outsourced employees and as shown, the majority of the employees are able to perform the job but not beyond. This is true for all the subsectors with the facilities' distribution ranging from 46% to 67% (Table 49).

On the other hand, an astounding 34.26% of the employees were identified to have the potential to perform with more demanding duties than they currently have, meaning that this is the percentage of employees who may be considered as underutilized. In a brief prepared for the ILO Department of Statistics it was noted that underutilization may also occur for instance, as a result of "skills mismatch whereby workers are overqualified for the jobs they hold" (Gammarano, 2018). This is a particular area of interest because it may signify the labor supply and demand mismatches. Unfortunately, only less than 10% of employees for

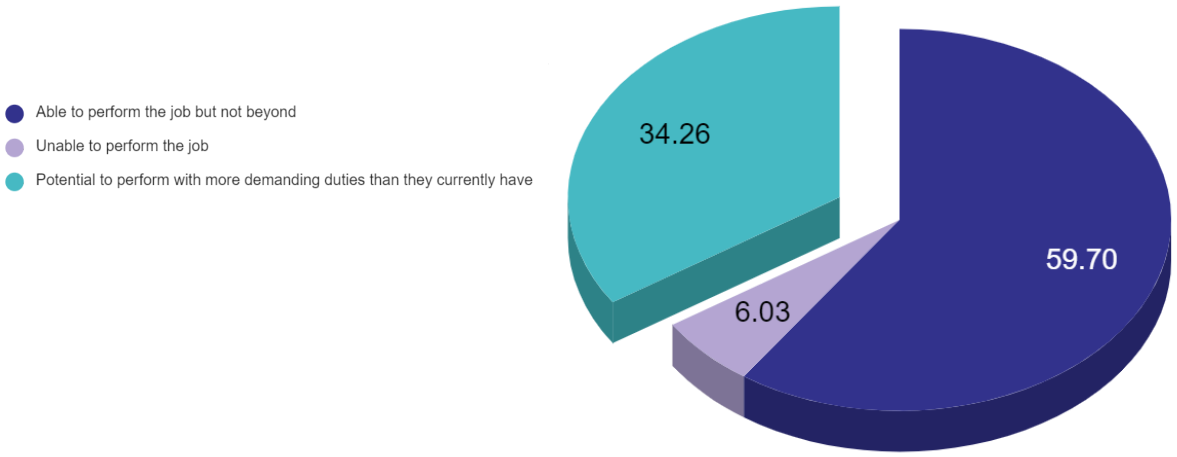
the majority of the facilities' employees were promoted in managerial and supervisory positions (Table 42).

According to a Government Level I hospital, the health facility has college graduates who ended up working as ambulance drivers or institutional workers even pre-pandemic, signifying overqualification. In some cases, workers are happy with their current status and it was their decision to stay in their current occupation even when presented with employment opportunities.

Table 48
Distribution of the Employees by Performance Evaluation

Performance Evaluation	%
Able to perform the job but not beyond	59.70
Unable to perform the job	6.03
Have the potential to perform with more demanding duties than they currently have	34.26

Figure 11
Distribution of the Employees by Performance Evaluation



Note. One of the respondents did not provide numerical responses for this question. As one of the responses is considered null, only 51 facilities were considered in the computation of this table.

Furthermore, when it comes to underperforming employees, the facilities noted that only a few (6.03%) of their employees are unable to perform the job. Only the Primary Care Facility subsector does not indicate any percentage of their employees as unable to perform. Take note, however, that only three facilities participated for the said subsector.

When the performance of the employees as reflected in Tables 48-49 is also linked with the reasons for the employees' underperformance in Table 50, majority of the privately-owned facilities cited the lack of socio-emotional skills while for half of the government-owned facilities, the problem lies with lack of the basic healthcare-related skills, language skills, office and admin skills, digital skills, and the lack of reskilling/upskilling. All these cited reasons may be addressed through learning and development initiatives. As such, appropriate interventions and proper management should be made as "underperformance jeopardizes the achievement of individual and organizational goals and objectives" if the needs are continuously unmet (International Labour Organization, n.d).

Moreover, when the performance evaluation is cross analyzed with the current employment status, generally there is not much difference on the performance of the employees who are working full-time compared to those working on a part-time basis. Although an interview with an HMO company mentioned that they cannot demand more from non-full time employees; as such, having a certain percentage of their workers who are just able to perform but not beyond.

Table 49

Distribution of the Employees by Performance Evaluation per Subsector

Subsector	Performance Evaluation			
	Able to perform the job but not beyond (%)	Unable to perform the job (%)	Have the potential to perform with more demanding duties than they currently have (%)	Total (%)
Primary Care Facility	60.00	0.00	40.00	100.00
Health Care Facility - General Level 1	66.58	3.39	30.04	100.00
Health Care Facility - General Level 2	46.46	10.56	42.99	100.00
Health Care Facility - General Level 3	65.68	12.03	22.30	100.00
Supporting Services - Finance (Health Maintenance Organization)	52.34	2.01	45.66	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	66.67	15.00	18.33	100.00

Note. One of the respondents did not provide numerical responses for this question. As one of the responses is considered null, only 51 facilities were considered in the computation of this table.

As previously mentioned, the respondents from privately-owned facilities commonly attributed the lack of socio-emotional skills (71.43%) as reasons for their employees' underperformance while for the half of the government-owned facilities, employees are unable to perform their job due to several reasons such as lack of basic healthcare-related skills, language, and digital skills (Table 50). It may be presumed that to at least perform the given duties, the mentioned skills (e.g. socio-emotional skills, language) will be needed on top of possessing the technical skills. The specific examples of these non-technical skills are cited.

The table also lists down the technical skills that are critical to perform duties and responsibilities, which may also be specific to the facilities' requirements. For instance, digital skills are needed by half of the underperforming employees especially as the global pandemic shifted many of the processes online. One private hospital mentioned that they are still new to going digital such as undertaking telemedicine and telecounselling. Age may also be a factor to the skills and competencies that an employee possesses. A government-owned hospital explained that older employees are prone to the lack of specialized technical skills; thus, continuous training will be necessary.

Meanwhile, other reasons that were identified refer to personal reasons (e.g. health problem), infrastructure (e.g. internet connection), and even the status of employment. One HMO facility noted that they are not legally allowed to "stretch" the part-time employees, meaning there are certain limitations on what to expect in an employee depending on the status of employment.

Table 50
Percentage of Health Facilities/Supporting Service Companies with Underperforming Employees by Reason and Type of Ownership

Reason	Percentage (%)		
	Privately-Owned	**Government-Owned**	**Total %**
Lack of basic healthcare-related skills (e.g. healthcare environment, patient/stakeholder needs, work procedures, use of medical equipment, etc.)	50.00	50.00	*100.00*
Lack of specialized technical skills for Health Sector: - Database management - Programmers, computer skills like excel - IV Insertion - Blood Extraction (e.g. arterial blood gas), endotracheal intubation - Computer literacy especially in database - ECG reading, ICU nurses, critical care nursing	66.67	33.33	*100.00*

Lack of advanced healthcare-related skills: - 2D Echo, OR skill - Basic Life Support and advance cardiovascular life support - Specialised Service of Health Care Accounts - Hemodialysis - Operating and delivery room nursing skills	60.00	40.00	*100.00*
Lack of soft skills (e.g. communication, collaboration and teamwork etc.): - Inability to speak properly in English or Spanish - Customer Service - EQ - Ability to communicate with patients - Flexibility, Honesty, dedication - Supportive of the collective goal of the unit - Hard worker and respectful - Leadership skills, adaptability, problem solving skills - Cooperation and coordination with other staff	58.33	41.67	*100.00*
Lack of socio-emotional skills (e.g. extraversion, emotional stability, agreeableness, grit, consciousness, decision-making, openness, etc.): - Inability to take constructive feedback - Customer Service - Diligence and commitment - Ability to response to the emotional needs of patients - Respectful - Determination	71.43	28.57	*100.00*
Lack of language skills (including listening, speaking, reading, and writing skills)	50.00	50.00	*100.00*
Lack of management and leadership skills	61.54	38.46	*100.00*
Lack of office and admin skills	50.00	50.00	*100.00*
Lack of digital skills (e.g. telemedicine/telecounselling, navigating online health information systems, etc.)	50.00	50.00	*100.00*
Lack of reskilling/upskilling programs/training/certifying course	50.00	50.00	*100.00*

Note. Multiple responses were allowed. Also, these answers only came from 17 out of 28 private facilities and 8 out of 24 government-owned facilities.

Provided that there are underperforming employees, the health facilities and supporting

service companies are implementing different actions and interventions. The responses of the participating facilities are varied depending on the type of ownership as shown in Table 51. For the majority of the privately-owned companies, reviews of appraisals/performance are always or regularly performed. Meanwhile, DOH facilities identified the conduct of mentoring and adding people to complement the work as regularly implemented; conduct of mentoring and intensifying supervision of staff for the majority of the other government-owned health facilities.

Table 51

Distribution of the Facilities by Frequency of Implementation of Various Actions or Interventions for Underperforming Employees per Type of Ownership

	Percentage of Implementation			
Actions/Interventions	Never (%)	Sometimes or when necessary (%)	Always or regularly (%)	Total %
	Privately Owned			
Increase training activity / spend or increase/expand trainee programs	0.00	56.25	43.75	100.00
Conduct of re-training	0.00	62.50	37.50	100.00
Reallocating work	12.50	68.75	18.75	100.00
Review of appraisals / performance	0.00	18.75	81.25	100.00
Conduct mentoring	0.00	43.75	56.25	100.00
Intensify supervision of staff	0.00	50.00	50.00	100.00
Apply corresponding disciplinary procedures of the company	0.00	37.50	62.50	100.00
Add people to complement the work	25.00	43.75	31.25	100.00
Change work practices	12.50	75.00	12.50	100.00
	DOH Hospitals			
Increase training activity / spend or increase/expand trainee programs	0.00	100.00	0.00	100.00
Conduct of re-training	0.00	100.00	0.00	100.00
Reallocating work	0.00	100.00	0.00	100.00
Review of appraisals / performance	0.00	100.00	0.00	100.00
Conduct mentoring	0.00	0.00	100.00	100.00
Intensify supervision of staff	0.00	100.00	0.00	100.00
Apply corresponding disciplinary procedures of the company	0.00	100.00	0.00	100.00
Add people to complement the work	0.00	0.00	100.00	100.00

Change work practices	0.00	100.00	0.00	100.00
Other Government Owned				
Increase training activity / spend or increase/expand trainee programs	0.00	71.43	28.57	100.00
Conduct of re-training	0.00	57.14	42.86	100.00
Reallocating work	0.00	85.71	14.29	100.00
Review of appraisals / performance	0.00	28.57	71.43	100.00
Conduct mentoring	0.00	14.29	85.71	100.00
Intensify supervision of staff	0.00	14.29	85.71	100.00
Apply corresponding disciplinary procedures of the company	0.00	42.86	57.14	100.00
Add people to complement the work	0.00	71.43	28.57	100.00
Change work practices	0.00	71.43	28.57	100.00

Note. The responses only came from 16 out of 28 private facilities, 1 out of 2 DOH hospitals, and 7 out of 22 other government-owned facilities.

As previously mentioned in the discussion on the distribution of the employees by performance evaluation per subsector (Table 49), 34.26% of the employees have the potential to perform more demanding duties than they currently have. With regards to that, Table 52 shows that all the Primary Care Facilities, Health Care Facilities - General Level 3, and Supporting Services - HIMS (Clinical and Documentation Service Providers) have undertaken actions or interventions for these types of employees. Although not all, majority of the facilities in the remaining subsectors have also made the necessary actions.

Table 52

Percentage of Health Facilities/Supporting Service Companies that have Undertaken Actions or Interventions to Employees with the Potential to Perform More Demanding Duties per Subsector

Subsector	%
Primary Care Facility	100.00
Health Care Facility - General Level 1	94.44
Health Care Facility - General Level 2	88.89
Health Care Facility - General Level 3	100.00
Supporting Services - Finance (Health Maintenance Organization)	88.89
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	100.00

In Table 53, most of the facilities already made interventions regardless of the ownership type with only one government hospital and two private facilities that responded no when asked whether necessary actions have been undertaken. However, out of the two DOH hospitals, one did not answer the question and as such considered as null.

The actions taken by the health facilities and supporting service companies can be summarized into three recurring categories: (1) learning and development programs; (2) job reassignments; and (3) promotion and other incentives. The specifics are found below:

a. Learning and Development Programs
    i. Continuous training and mentoring/coaching
    ii. Attending training programs and immersion to add skillset

b. Job reassignments
    i. Job enrichment through exposing to new opportunities (e.g. offering membership in existing hospital commitees)
    ii. Assigning new tasks/programs/committees (e.g. giving supervisoring work) or expanding scope of work
    iii. Re-arranging positions (e.g. deployment to other departments; job rotation)

c. Promotion and other incentives
    i. Incentives and recognition such as promotion, salary increase, and gift rewards (e.g. extra day off)
    ii. Reaffirmation and motivation to continue to excel

One of the Health Care Facility - General Level 1 facilities indicated that they are asking their underutilized employees to help their colleagues. On the other hand, one HMO facility specified that before a salary increase or promotion is awarded, employees first undergo performance evaluation.

Table 53

Percentage of Facilities that have Undertaken Actions or Interventions to Employees with the Potential to Perform More Demanding Duties per Type of Ownership

Type of Ownership	%
Private	92.59
DOH Hospitals	100.00
Other Government Owned	95.00

Note. The responses only came from 1 out of 2 DOH hospitals as no answer was given by one of the participants.

Table 54 depicts the distribution of positions in each facility per specific policy requirement, with the results indicating that the facilities differ in terms of the percentage of positions that require the stated requirements. Figure 12 shows that all of the existing positions, at a certain extent, requires a college degree, with the majority of the health facilities/supporting service companies indicating this requirement for more than half of the existing job positions.

This backs up the finding in Table 14 which shows that 70.89% of the current employees are college graduates.

Consistently in Table 40, the distribution of the vacancies show that 78.49% of the positions require applicants to be college graduates. However, for facilities that require a Technical Vocational Certificate or National Certificate, only 5.77% require it for more than 50% of their existing job positions.

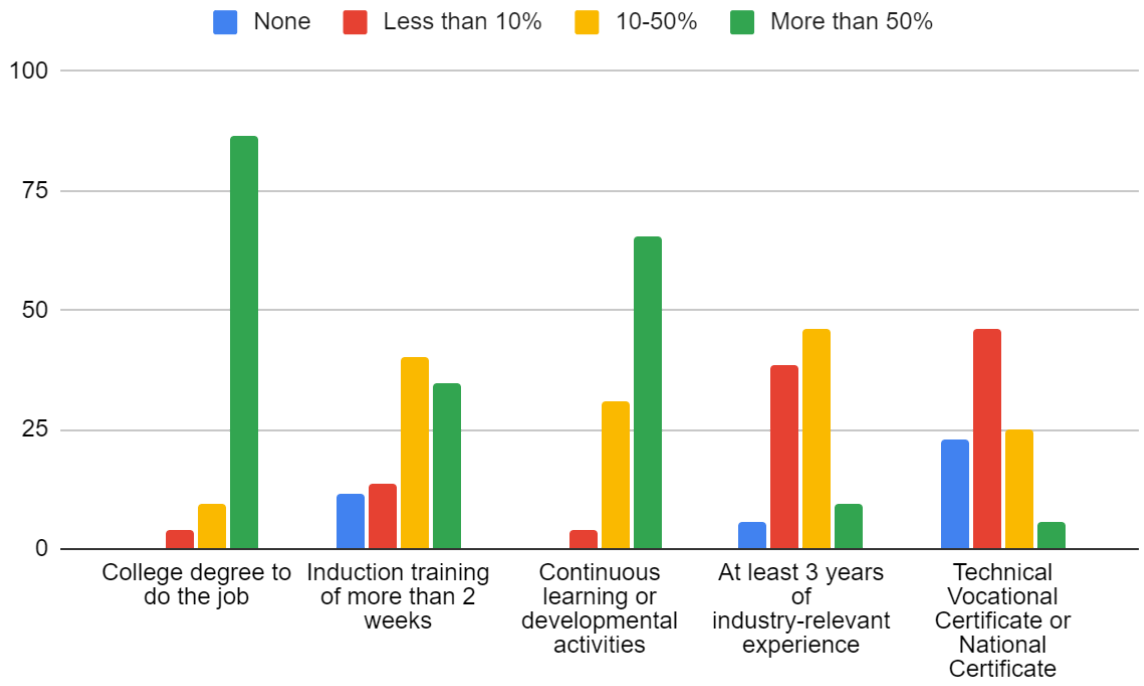
Besides educational attainment, 65.38% of the participating facilities indicated that in more than half of the job positions, continuous learning or development activities are required. As such, the conduct of training and capacity-building activities may be considered as crucial for the Health sector.

Table 54

Distribution of the Health Facilities/Supporting Service Companies per Specific Policy Requirements of the Existing Job Positions

Requirements by Policy	Percentage of Facilities (%)				
	None	<10	10-50	>50	Total %
College degree to do the job	0.00	3.85	9.61	86.54	100.00
Induction training of more than 2 weeks	11.54	13.46	40.38	34.62	100.00
Continuous learning or developmental activities	0.00	3.85	30.77	65.38	100.00
At least 3 years of industry-relevant experience	5.77	38.46	46.15	9.62	100.00
Technical Vocational Certificate or National Certificate	23.08	46.15	25.00	5.77	100.00

Figure 12
Distribution of the Health Facilities/Supporting Service Companies per Specific Policy Requirements of the Existing Job Positions



Furthermore, majority of the subsectors agree that for more than 50% of the positions, applicants must be college graduates, and the same goes for continuous learning or development activities. For instance, all the participating Primary Care Facilities and Supporting Services - HIMS (Clinical and Documentation Service Providers) specified the two policy requirements as needed for at least half of the positions. The data is consistent with the observations on difficult to replace jobs and those with anticipated shortage.

In terms of the requirement for a Technical Vocational Certificate or National Certificate, facilities under the Supporting Services - HIMS (Clinical and Documentation Service Providers) (100%) do not have positions that require this. This is somehow consistent with the industry consultations conducted in 2021 and the interviews for this study indicating that the supporting service companies (which are also in the IT-BPM industry) generally needs higher level qualifications.

If the results will be observed, although majority of the positions, for most of the facilities require a college degree, TechVoc or National Certificate is also seen as a requirement for 10% to 50% of the positions, which may be partly due to the need for continuous, lifelong learning of the workforce.

Meanwhile, all of the participating facilities under the Clinical and Documentation Service Providers subsector agreed that more than 50% of their occupations require more than two weeks of induction training. While the importance being given by the sector to the continuous learning/developmental activities, as reflected in the table below, might also be attributable to the effect of technological advancements in the health sector. The COVID-19 have proven

that the ability to adapt to those changes will have an impact in service delivery. The health sector is a fast evolving, ever-changing industry.

During the validation meeting, it was shared by the DOH that concerning the policy requirement upon hiring, continuous learning/developmental activities and industry-experience are both being considered. The weight of each requirements depends on the position and insofar as government facilities are concerned, the guidelines of the Civil Service Commission is being followed.

Table 55

Distribution of the Health Facility/Supporting Service Company per Specific Policy Requirements of the Existing Job Positions per Subsector

Subsector	Requirements by Policy				
	None	<10	10-50	>50	Total %
College degree to do the job					
Primary Care Facility	0.00	0.00	0.00	100.00	100.00
Health Care Facility - General Level 1	0.00	4.55	13.64	81.82	100.00
Health Care Facility - General Level 2	0.00	11.11	22.22	66.67	100.00
Health Care Facility - General Level 3	0.00	0.00	0.00	100.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	0.00	0.00	100.00	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	100.00	100.00
Induction training of more than 2 weeks					
Primary Care Facility	0.00	66.67	0.00	33.33	100.00
Health Care Facility - General Level 1	9.09	13.64	50.00	27.27	100.00
Health Care Facility - General Level 2	0.00	22.22	55.56	22.22	100.00
Health Care Facility - General Level 3	16.67	0.00	33.33	50.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	33.33	0.00	33.33	33.33	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	100.00	100.00
Continuous learning or developmental activities					
Primary Care Facility	0.00	0.00	0.00	100.00	100.00
Health Care Facility - General Level 1	0.00	4.55	27.27	68.18	100.00
Health Care Facility - General Level 2	0.00	0.00	66.67	33.33	100.00

Health Care Facility - General Level 3	0.00	0.00	16.67	83.33	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	11.11	33.33	55.56	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	100.00	100.00
At least 3 years of industry-relevant experience					
Primary Care Facility	33.33	0.00	33.33	33.33	100.00
Health Care Facility - General Level 1	4.55	40.91	50.00	4.55	100.00
Health Care Facility - General Level 2	0.00	22.22	55.56	22.22	100.00
Health Care Facility - General Level 3	16.67	33.33	50.00	0.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	66.67	22.22	11.11	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	33.33	66.67	0.00	100.00
Technical Vocational Certificate or National Certificate					
Primary Care Facility	0.00	33.33	0.00	66.67	100.00
Health Care Facility - General Level 1	13.64	50.00	31.82	4.55	100.00
Health Care Facility - General Level 2	0.00	44.44	55.56	0.00	100.00
Health Care Facility - General Level 3	16.67	66.67	16.67	0.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	55.56	44.44	0.00	0.00	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	100.00	0.00	0.00	0.00	100.00

Based on Table 56, the majority of the private and other government-owned facilities answered that more than 50% of the positions require college degree. This shows that regardless of the type of ownership, many of the positions in the healthcare industry give primary importance to higher education. Meanwhile, both DOH hospitals that participated agreed completely that many of the positions require continuous learning or developmental activities.

In terms of technical vocational certificate or National Certificate, 40%-100% of the participating facilities across various ownership types only specified less than 10% of the positions are in need of the requirement. Moreover, the positions in government-owned

facilities seems to be more in need of National Certificate compared to the positions in the private sector.

Table 56

Distribution of the Facilities per Specific Policy Requirements of the Existing Job Positions, per Type of Ownership

Subsector	Requirements by Policy				
	None	<10	10-50	>50	Total %
College degree to do the job					
Private	0.00	3.57	7.14	89.29	*100.00*
DOH Hospitals	0.00	0.00	50.00	50.00	*100.00*
Other Government Owned	0.00	4.55	9.09	86.36	*100.00*
Induction training of more than 2 weeks					
Private	14.29	7.14	32.14	46.43	*100.00*
DOH Hospitals	0.00	50.00	50.00	0.00	*100.00*
Other Government Owned	9.09	18.18	50.00	22.73	*100.00*
Continuous learning or developmental activities					
Private	0.00	3.57	39.29	57.14	*100.00*
DOH Hospitals	0.00	0.00	0.00	100.00	*100.00*
Other Government Owned	0.00	4.55	22.73	72.73	*100.00*
At least 3 years of industry-relevant experience					
Private	3.57	42.86	46.43	7.14	*100.00*
DOH Hospitals	0.00	50.00	50.00	0.00	*100.00*
Other Government Owned	9.09	31.82	45.45	13.64	*100.00*
Technical Vocational Certificate or National Certificate					
Private	39.29	46.43	14.29	0.00	*100.00*
DOH Hospitals	0.00	100.00	0.00	0.00	*100.00*
Other Government Owned	4.55	40.91	40.91	13.64	*100.00*

4.4 Industry Development and Emerging Skills

This section contains information on emerging skills related to the industry developments in the Health Sector. Specifically, respondents were asked to assess the impact of various industry developments associated with 4IR, and the New Normal on skills demand in the next 1-5 years. In addition, they were asked about their readiness for these, as well as the actions taken by those who were ready. Finally, questions were raised about the human resource preparations made in relation to the emerging skills.

Table 57 shows how industry developments, such as technological advancement and workplace adjustments to the new normal, will impact the skills demand in the emerging skills over the next 1-5 years. Only nanotechnology was deemed not applicable by the majority of healthcare facilities and support services companies for all of the emerging skills listed in the table. When analyzed per subsector (Annex C), the most common emerging skills anticipated to be more demanded in the next five (5) years are electronic medical records management, health information system navigation and management, and telehealth/telemedicine.

Some emerging skills identified during the health-related industry consultations (i.e. Public Nutrition, Emergency Medical Services, and Mental Health) were further reiterated in this study including the use of cloud environments and other online/digital communication tools, computer literacy, psychological first aid, basic counseling, telenutrition/teleconsultation, robotics, innovation, and adaptability.

Table 57

Distribution of the Impact of Skills Demand in Emerging Skills Associated with the Industry Developments over the Next 1-5 years

Emerging Skills	Impact on Skills Demand				Total %
	More skills demanded (%)	Staying the same (%)	Fewer skills demanded (%)	Not Applicable (%)	
FOURTH INDUSTRIAL REVOLUTION					
Data Science and Analytics	57.69	5.77	5.77	30.77	100.00
Data Management and Governance	63.46	17.31	3.85	15.38	100.00
Artificial Intelligence and Machine Learning	50.00	9.62	7.69	32.69	100.00
Internet of Things (IoT)	57.69	15.38	5.78	21.15	100.00
Nanotechnology	32.69	0.00	0.00	67.31	100.00
Environmental and Occupational Health and Hygiene	61.54	28.85	1.92	7.69	100.00
Information Security	67.31	23.08	3.85	5.76	100.00
Social Science Research	44.23	17.30	3.85	34.62	100.00
Digital Marketing and Strategy	55.77	15.38	5.77	23.08	100.00
Health Information System Navigation and Management	69.23	15.39	7.69	7.69	100.00
Electronic Medical Records Management	73.08	15.38	3.85	7.69	100.00

Pharmacy Benefit	38.46	36.54	7.69	17.31	100.00
Digital Pharmacies / E-Pharmacy Service	44.23	13.46	7.69	34.62	100.00
Clinical Research	51.92	15.38	5.78	26.92	100.00
Remote Patient Monitoring	61.54	11.54	3.85	23.07	100.00
Health Surveillance and Monitoring	63.46	23.08	1.92	11.54	100.00
Complex Information Processing and Interpretation	55.77	17.31	3.85	23.07	100.00
NEW NORMAL					
Telemedicine / Telehealth	69.23	17.31	1.92	11.54	100.00
Psychological First Aid	55.77	26.92	1.92	15.39	100.00
Basic Counselling (listening, interviewing, probing)	46.15	40.38	5.78	7.69	100.00
Mobile Health Application Navigation	53.85	25.00	1.92	19.23	100.00
Customer Service/Customer Relations	50.00	40.38	3.85	5.77	100.00
Technology Use for Disease Prevention and Control	65.38	23.08	1.92	9.62	100.00
Workplace Disinfection and Sanitation	51.92	38.46	3.85	5.77	100.00
Use of Online/Digital Communication Tools (i.e Video Conferencing Platforms)	59.62	28.85	3.85	7.68	100.00
Health Care Waste Management	46.15	38.46	1.93	13.46	100.00

Besides the listed emerging skills, the healthcare facilities and support services companies also mentioned other emerging skills and its impact on skills demand as presented in Table 58. Similar to the emerging skills in Table 57, there will be more skills demanded for the majority of the other emerging skills associated with the industry developments. Adaptability skills, computer skills, and TeleRecruitment for Human Resources are among the skills identified to increase skill demand that are both associated with 4IR and the new normal.

Furthermore, no emerging skills associated to the industry developments have been identified to result in a fewer skills demand.

Table 58

Distribution of the Impact of Skills Demand in Emerging Skills (Others) Associated with the Industry Developments over the Next 1-5 years

Impact on Skills Demand	Other Emerging Skills	
	Fourth Industrial Revolution	New Normal
More Skills Demanded	○ Adaptability skills ○ Biochemistry ○ Cloud Technology ○ Complex Problem Solving ○ Computer Programmer ○ Computer Skills ○ Coordinating with others ○ Cyber Security ○ Data Privacy and Protection ○ Data Privacy Compliance ○ Data Security ○ Genetic Engineering ○ Information System Specialist ○ International Accounting and Taxation ○ Judgment and Decision Making ○ Medical Research ○ Medical Technologist ○ Metaverse ○ Negotiation ○ Organizational skills ○ People Management ○ Psychologist ○ Quality Control ○ Radiologic Technologist ○ Robotics ○ Shared Services ○ System Analysis and Evaluation ○ Teleconsultation ○ TeleRecruitment for	○ Adaptability and Flexibility ○ Communication and Emotional Intelligence ○ Computer Maintenance Technologist ○ Computer Skills/Computer Literacy ○ Critical Thinking ○ Digital Adoption ○ Innovation ○ No-contact Collaborative Exercises ○ Online Assessment ○ Online Learning ○ Remote Patient Assesment ○ Remote Work ○ Strong Work Ethics ○ Tech Savviness ○ Technical Troubleshooting for Hybrid and Virtual Learning ○ Tele-Recruitment for Human Resource ○ Triage ○ Use of Remote Applications for Viewing and Working ○ Use of Virtual Instruction Software, Polling, and Digital Formative Assessment Tools ○ Vaccine Mix and Match

	Human Resource ○ Use of Mobile-based Applications and Transactions	
Staying the same	○ Advancement in Local Clinical Research and Practice ○ Complex Problem Solving ○ Innovations on Equipment ○ Recent Approaches to the Conduct of Medical Procedures	○ Digital Information Management
Fewer Skills Demanded		

The percentage of healthcare facilities/supporting service providers who are ready for the emerging skills is shown in Table 59. Except for General Level 1 and General Level 2 Health Care Facilities, most subsectors have the majority of their facilities/companies ready.

Table 59

Percentage of Health Facilities/Supporting Service Companies that are Aware of and Ready for the Emerging Skills Associated with the Industry Developments, by Subsector

Subsector	%
Primary Care Facility	66.67
Health Care Facility - General Level 1	45.46
Health Care Facility - General Level 2	44.44
Health Care Facility - General Level 3	66.67
Supporting Services - Finance (Health Maintenance Organization)	55.56
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	66.67

Furthermore, regardless of the type of ownership, the majority of the health facilities/supporting service companies are prepared for the emerging skills (Table 60). Notably, all participating DOH hospitals stated that they are prepared and that they have taken action by developing plans and initiating initiatives/programs for human resource development and the acquisition of equipment and materials relevant to the requirements (Table 61). Aside from that, one DOH hospital said that their facility has “strong employee health monitoring” in place.

Further, the majority of private and government-owned facilities who are aware and ready have taken some, if not all, of the relative actions listed in Table 61.

Table 60

Percentage of Health Facilities/Supporting Service Companies that are Aware of and Ready for the Emerging Skills Associated with the Industry Developments, by Type of Ownership

Type of Ownership	%
Private	50.00
DOH Hospitals	100.00
Other Government Owned	50.00

Table 61

Percentage of Facilities that are Aware of and Ready for the Emerging Skills Associated with the Industry Developments by Relative Actions Undertaken and by Type of Ownership

Type of Ownership	Actions Undertaken (%)			
	Established plans to address the requirements.	Started some initiatives/ programs in terms of training and development of the human resource.	Started some initiatives/ programs for the acquisition of equipment and materials relevant for the requirements.	No action has been taken yet.
Private	57.14	78.57	64.29	0.00
DOH Hospitals	100.00	100.00	100.00	0.00
Other Government Owned	81.82	63.64	72.73	0.00

Note. Multiple responses were allowed.

In terms of preparation for the human resources for facilities who are aware and ready for the emerging skill, 7.69% of them have not yet made any preparations. Those who did have mostly re-tool/upskill existing employees and/or hire new employees suited for the required skills or competencies.

In the changing healthcare industry landscape and the world of work, keeping up with the industry developments and the associated emerging skills would be more advantageous in building and sustaining competitive advantage.

Table 62

Percentage of Facilities that are Aware of the Emerging Skills Associated with the Industry Developments by Preparations on Human Resource

Preparations	%
Hire new employee/s who have the required skills	62.50
Re-tool/Upskill existing employee/s to acquire the required competencies	91.67
Others	0.00

Note. Multiple responses were allowed.

4.5 Green Jobs and the Health Sector

Table 63 depicts the distribution of health care facilities/supporting service companies based on the extent to which they have implemented various aspects of green jobs. The highest percentage, as shown, have created/changed some jobs as part of contributing to minimizing waste and pollution. For those who have not taken action and do not intend to do so in the near future, the highest percentage can be accounted for decarbonization and contributing to protecting the ecosystem and biodiversity.

Table 63

Distribution of the Health Facilities/Supporting Service Companies by Extent of Implementation of the Different Aspects of Green Jobs

Aspects of Green Jobs	Extent of Implementation			Total %
	No action so far and no plan in the near future (%)	No action so far but planning to act (%)	Have created/changed some jobs as described (%)	
Contribute to ‘decarbonization’	26.92	55.77	17.31	100.00
Contribute to ‘protecting the ecosystem and biodiversity’	23.08	42.30	34.62	100.00
Contribute to ‘reducing energy, materials and water consumption’	15.38	36.54	48.08	100.00
Contribute to ‘minimizing waste and pollution’	15.38	23.08	61.54	100.00

But then, 8 of the 52 respondents have not taken any action and have no plans to take action in the near future to contribute to all aspects of green jobs listed in Table 63. Those

who have already created/changed jobs or intend to do so enumerated several provisions from various aspects of green jobs, as shown in Table 64.

Furthermore, the common provisions across several subsectors are related to energy conservation, sewerage plant, waste management including the segregation, recycling, and disposal of wastes and other materials.

Meanwhile, health facilities have stated that they are in compliance with the government's (e.g., DOH and DENR) requirements. Health Care Facility - General Level 1, on the other hand, is striving to contribute to "waste and pollution minimization" and has built a Sewerage Treatment Plant in accordance with DENR requirements.

In terms of DOH requirements, the Health Care Facility - General Level 2 facility stated that they are in the early stages of developing a plan to rebuild existing infrastructures in areas that conform to the provisions of green hospitals. In September 2021, the DOH has issued Department Circular No. 2021-0437: Dissemination of the Green and Safe Health Facilities Manual 1st edition. The Green Manual, developed by the Health Facility Development Bureau (HFDB) with the technical assistance from the WHO, aims to respond to the call to develop green and safe hospitals and health facilities. Encouraging the hospital and health facilities to “seek green certifications from Green Building Rating System/s for their new construction or expansion, repair and renovation projects” (Department of Health, 2021) may serve as a critical signal in the demand and expansion of green jobs in the coming years.

During the validation meeting, the DOH pointed out that the green facilities is still in line with the strategic direction of the 8-point agenda of the Health Secretary which would entail human resource complement. The industry will be needing health workers to create green jobs.

Table 64

Examples of Organizational Provisions from any Aspects of Green Jobs, by Subsector

Subsector	Provisions
Primary Care Facility	○ Clean Air and Water Act ○ Energy Saving Measures

Health Care Facility - General Level 1	○ Implementation of Waste Management System (including Segregation, Regular Collection, Recycling, Disposal of wastes and various materials and including hospital setting) ○ Cooperative Waste Coop ○ Safe Waste Inc. ○ The hospital strives to contribute to 'minimizing waste and pollution' in compliance to DENR mandate ○ Putting Sewage Treatment Plant as DENR requirement ○ Planning for solar lights ○ Tree planting activities ○ Clean and green projects ○ Weekly misting (every Friday)
Health Care Facility - General Level 2	○ Strict Implementation of Waste Management System (including Segregation, Recycling of papers and other office supplies) ○ Sewage Treatment Plan (STP) (treats wastewater before disposal) ○ Clean Waste Management ○ Energy Saving System Policy ○ Identify Skills and Develop Training Programs ○ Plans on Reconstructing of Existing Infrastructure in Areas to Conform to the Provisions for Green Hospitals
Health Care Facility - General Level 3	○ Creation of Plastic Waste Committee ○ Changing of Fluorescent Lights to LED ○ Integrating or Institutionalize Waste Management Segregation ○ Zero Waste Management ○ Change of Sewage Treatment Plan (STP) Process from Sequencing Batch Reactor (SBR) to Continuous Aeration
Supporting Services - Finance (Health Maintenance Organization)	○ Waste Segregation and Hazardous Management ○ Minimizing Waste and Reducing Energy ○ Optimizing Natural Light ○ Follow all government regulations for our clinics
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	○ Proper Waste Disposal ○ Recycling of Papers and Other Materials ○ Energy Conservation

Only some of the health facilities/supporting service companies (0% to 37.50%) across the different subsectors have made use of the tax incentives or import duties exemption programs, with Health Care Facility - General Level 2 making the most of it. In contrast, Supporting Services - HIMS (Clinical and Documentation Service Providers) have not made use of incentives/programs.

In a report entitled *"Employment effects of green policies in the Philippines"*, Abrigo et al. (2019) provided policy recommendations including the exploration of alternative financing schemes. Although the reasons behind the low utilization of the government's tax incentives vis-a-vis the promotion of green jobs was not covered in this survey, the suggestion in the report may trigger the creation of new policies that will further drive the green economy. The authors pointed out the need to also "address the causes of why firms do not invest in greener technologies or choose to produce green outputs" as doing so may direct greening incentives to the common pain points of companies/associations/organizations (Abrigo et al., 2019).

The Health Human Resource Development Bureau of DOH had a workshop and writeshop on the HRH master plan where one of the Key Result Area (KRA) 3 identified tax incentive as one of the policy considerations. Tax break or tax incentives is said to be more welcomed by the health workers.

Table 65

Percentage of Health Facilities/Supporting Service Companies that used the Tax Incentives/Import Duties Exemption Programs, by Subsector

Subsector	%
Primary Care Facility	33.33
Health Care Facility - General Level 1	19.05
Health Care Facility - General Level 2	37.50
Health Care Facility - General Level 3	0.00
Supporting Services - Finance (Health Maintenance Organization)	16.67
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00

Similarly, only some of the health facilities/supporting service companies from all subsectors have received support or are seeking support from the government for green jobs as shown in Table 66. Only Health Care Facility - General Level 2 has the majority of its facilities that received or are looking for government assistance. Whereas, all of the respondents from Primary Care Facility and Supporting Services - HIMS (Clinical and Documentation Service Providers) said that they have not received or sought support.

Table 66
Percentage of Facilities with Plans and Acts on Aspects of Green Jobs that Have Received Support or are Seeking Support from any Government Agency by Subsector

Subsector	%
Primary Care Facility	0.00
Health Care Facility - General Level 1	33.33
Health Care Facility - General Level 2	62.50
Health Care Facility - General Level 3	20.00
Supporting Services - Finance (Health Maintenance Organization)	14.29
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00

Among the government agencies whose roles are defined in RA 10771 or the Philippine Green Jobs Act of 2016, the majority of the subsectors that have received or are seeking assistance for green jobs identified DENR and DOLE (Table 67).

Table 67
Government Agencies where the Facilities Receive/Seek Assistance in relation to Green Jobs, by Subsector

Subsector	Government Agencies
Primary Care Facility	
Health Care Facility - General Level 1	- Department of Environment and Natural Resources (DENR) - Department of Energy (DOE) - Climate Change Commission (CCC)
Health Care Facility - General Level 2	- Department of Environment and Natural Resources (DENR) - Department of Education (DepEd) - Department of Labor and Employment (DOLE) - Professional Regulation Commission (PRC) - Technical Education and Skills Development Authority (TESDA) - Department of Interior and Local Government (DILG) - Department of Health (DOH)
Health Care Facility - General Level 3	- Department of Environment and Natural Resources (DENR) - Department of Interior and Local Government (DILG)
Supporting Services - Finance (Health Maintenance Organization)	- Department of Environment and Natural Resources (DENR) - Department of Labor and Employment (DOLE)

	- Professional Regulation Commission (PRC)
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	

Note: Multiple responses are allowed. Gray cells indicate that no facilities from the subsector have received/sought support from any government agency, as indicated by the 0% in Table 64.

As evident in Table 68, the percentage of health facilities/supporting service companies that are aware of the emerging skills resulting from green jobs only ranges from 11.11% to 33.33%. The same with the identified common provisions in Table 64, waste management, including hospital and hazardous wastes, is the common emerging skill (Table 69). The low industry awareness on the emerging green skills/jobs also have an effect on the ability of the facilities to appropriately identify the green requirements and occupation needed.

Moreover, the health industry has partnered with the academe and other educational government agencies for future skills supply, as well as host training programs with international nurses, and retain talented healthcare workers while adding new healthcare-related positions. Furthermore, the healthcare industry has gone into initiatives in becoming more environmentally-aware and energy-efficient (such as the greening of hospital buildings), especially during the climate change crisis (Health Care Without Harm, n.d).

Health Care Facility - General Level 1 and Health Care Facility - General Level 3 were able to specify green jobs such as Designated Pollution Control Officer, Alternate Pollution Control Officer, Sewage Treatment Plant Operator, Medical Health Waste Officer, Safety Officer, Solar Photovoltaic Installers, Wind Turbine Specialist, and Hydropower Technicians are the emerging jobs in place to aid in the greening of the industry (Table 69).

Table 68

Percentage of Health Facilities/Supporting Service Companies that are Aware of Emerging Skills Resulting from Green Jobs, by Subsector

Subsector	%
Primary Care Facility	33.33
Health Care Facility - General Level 1	27.27
Health Care Facility - General Level 2	11.11
Health Care Facility - General Level 3	33.33
Supporting Services - Finance (Health Maintenance Organization)	11.11
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	33.33

Table 69

Identified Emerging Skills/Jobs as a Result of Green Jobs by Subsector

Subsector	Identified Emerging Skills
Primary Care Facility	○ Waste Management ○ Clean Air Act ○ Water Conservation
Health Care Facility - General Level 1	○ Safety Officer ○ Designated Pollution Control Officer ○ Alternate Pollution Control Officer ○ Sewage Treatment Plant Operator ○ Medical Health Waste Officer ○ Contribute to ‘minimizing waste and pollution’ ○ Contribute to ‘reducing energy, materials and water consumption’ ○ Contribute to ‘protecting the ecosystem and biodiversity ○ Hospital Waste Management ○ Environmental Awareness ○ Sustainable Development ○ Leadership Skills ○ Water Treatment ○ Recycling
Health Care Facility - General Level 2	○ Environmental Awareness ○ Leadership Skills ○ Willingness to Learn
Health Care Facility - General Level 3	○ Materials Recovery and Reuse ○ Reduction of Carbon Footprint ○ Hazardous Waste Management ○ Solar Photovoltaic Installers ○ Wind Turbine Specialist ○ Hydropower Technicians
Supporting Services - Finance (Health Maintenance Organization)	○ Energy Efficiency
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	○ Analytics ○ Data Science ○ Data Management

Furthermore, the distribution of the health facilities/ supporting service companies by “green” industry developments relevant to the business needs, both now and in the near future, was determined and is shown in Table 70. According to the table, the majority of the facilities/companies have business needs in terms of knowledge across the various "green" industry developments, with the exception of hospital waste management (proper segregation, recycling, reuse, and disposal) and safe pharmaceutical management and disposal, which have business needs in skills and competencies, respectively.

However, in every "green" industry development, there is a percentage of facilities/companies that do not have business needs, with reprocessing programs having the highest percentage (40%) among "green" industry developments.

Moreover, one of the respondents also added biohazard in the other green industry development, citing knowledge as the area for business needs.

Table 70

Distribution of the Health Facilities/Supporting Service Companies by 'Green' Industry Developments Relevant to (Current and Near Future) Business Needs

"Green" Industry Development	Areas with Business Needs			
	Knowledge (Critical understanding, theories and principles) (%)	Skills (Skills mastery and innovation for solving complex problems) (%)	Competencies (Managing activities and tasks) (%)	Not Applicable (%)
Public environmental health promotion	63.46	57.69	55.77	17.31
Hospital climate footprint reduction	55.77	34.62	36.54	33.33
Sustainable food services (i.e serving locally grown food vs packaged food)	48.08	40.38	36.54	30.77
Hospital waste management (proper segregation, recycling, and reuse, and disposal)	55.77	61.54	59.62	17.31
Safe pharmaceutical management and disposal	57.69	51.92	61.54	19.23
Alternative energy technologies	48.08	44.23	40.38	38.46
Energy efficiency	61.54	51.92	50.00	19.23
Alternatives and substitute for harmful chemicals	63.46	42.31	48.08	25.00
Green design and construction	63.46	48.08	46.15	25.00
Environmentally preferable purchasing	59.62	48.08	46.15	26.92
Reprocessing program	48.08	34.46	40.38	40.38

Note. Multiple responses were allowed.

4.6 Learning and Development

This section discusses the distribution of payroll expenditure allotted for learning and development by the health facilities and supporting service companies and how they rated the various training-related statements. Both of these were presented in the following tables by subsector and by type of ownership.

Moreover, in relation to the training-related statements, the People Focus Index was computed and correlated with the other indexes.

Table 71 presents the distribution of allocated payroll expenditure by the type of ownership. The highest percentage of health facilities/ supporting service companies, whether private, DOH hospitals, or other government owned facilities, allot less than 10% of their payroll expenditure for most of the learning and development programs conducted by the facility/company and external providers. Only DOH hospitals have facilities that allocate more than half of their payroll to learning and development programs.

Ironically, it may be recalled from Table 50 that for the reasons concerning the underperforming employees, the respondents commonly cited reasons that may be addressed through learning and development initiatives. Provided this information, companies and organizations must be able to reassess the existing problems/gaps in their employees' performance and the measures being taken by the management. Evaluation may be done to determine whether increased efforts on learning and development is needed.

Additionally, the DOH noted that it would also be important to consider the yearly forward estimated for training for both the private and public hospitals as well as in the primary care facilities, the National HRH Master Plan 2020-2040 projects that the cost of the country just for the training/Learning and Development Initiatives of the public sector will amount to PhP 919.89 billion; whereas the private sector, would amount to PhP 2.91 Trillion.

Table 71

Distribution of Payroll Expenditure Allocated for Learning and Development Programs Conducted by the Facility/Company and External Providers, by Type of Ownership

Type of Ownership	Payroll Expenditure (%)				Total %
	None	<10	10-50	>50	
Formal learning and training programs developed and conducted by the health facility/supporting service company					
Private	7.14	32.15	50.00	10.71	100.00
DOH Hospitals	0.00	50.00	0.00	50.00	100.00
Other Government Owned	9.09	40.91	36.36	13.64	100.00
Non-formal learning and training programs developed and conducted by the health facility/supporting service company					
Private	17.86	42.86	28.57	10.71	100.00

DOH Hospitals	0.00	0.00	100.00	0.00	100.00
Other Government Owned	18.18	45.46	18.18	18.18	100.00
Formal learning and training programs developed and conducted by external providers (public and private training providers)					
Private	0.00	39.29	50.00	10.71	100.00
DOH Hospitals	0.00	50.00	50.00	0.00	100.00
Other Government Owned	18.18	40.91	31.82	9.09	100.00
Non-formal learning and training programs developed and conducted by external providers (public and private training providers)					
Private	10.71	46.43	32.15	10.71	100.00
DOH Hospitals	0.00	50.00	50.00	0.00	100.00
Other Government Owned	22.72	40.91	31.82	4.55	100.00

Meanwhile, as shown in Table 72, the subsectors have different payroll expenditure allotments across the types of learning program (formal learning and non-formal learning) and training providers (internal or external providers). Supporting Services - HIMS (Clinical and Documentation Service Providers) is the only subsector in which the majority of companies allot more than half of their payroll on both formal (66.67 percent) and non-formal (66.67 percent) learning and training programs developed and conducted by the company. However, in the case of external providers, the companies within these subsectors are evenly distributed to allot less than 10%, 10% to 50%, or more than 50%.

Furthermore, the highest percentage of the health facilities in Primary Care Facility and Health Care Facility - General Level 2 allot 10% to 50% of their payroll expenditure regardless of the type of learning program and training provider.

Whereas, for the remaining subsectors, the highest distribution of the health facility or the supporting service company either allotted less than 10% or 10% to 50%.

Table 72

Distribution of Payroll Expenditure Allocated for Learning and Development Programs Conducted by the Facility/Company and External Providers, by Subsector

Subsector	Payroll Expenditure (%)				Total %
	None	<10	10-50	>50	
Formal learning and training programs developed and conducted by the health facility/supporting service company					
Primary Care Facility	0.00	0.00	100.00	0.00	*100.00*
Health Care Facility - General Level 1	13.64	40.90	31.82	13.64	*100.00*
Health Care Facility -	0.00	33.33	55.56	11.11	*100.00*

General Level 2					
Health Care Facility - General Level 3	0.00	50.00	50.00	0.00	*100.00*
Supporting Services - Finance (Health Maintenance Organization)	11.11	33.33	44.45	11.11	*100.00*
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	33.33	0.00	66.67	*100.00*
Non-formal learning and training programs developed and conducted by the health facility/supporting service company					
Primary Care Facility	0.00	33.33	33.33	33.33	*100.00*
Health Care Facility - General Level 1	27.27	45.45	18.19	9.09	*100.00*
Health Care Facility - General Level 2	0.00	44.44	44.44	11.12	*100.00*
Health Care Facility - General Level 3	16.67	33.33	50.00	0.00	*100.00*
Supporting Services - Finance (Health Maintenance Organization)	22.22	44.45	22.22	11.11	*100.00*
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	33.33	0.00	66.67	*100.00*
Formal learning and training programs developed and conducted by external providers (public and private training providers)					
Primary Care Facility	33.33	33.33	33.33	0.00	*100.00*
Health Care Facility - General Level 1	13.64	40.91	40.91	4.54	*100.00*
Health Care Facility - General Level 2	0.00	22.22	66.67	11.11	*100.00*
Health Care Facility - General Level 3	0.00	50.00	33.33	16.67	*100.00*

Supporting Services - Finance (Health Maintenance Organization)	0.00	55.56	33.33	11.11	*100.00*
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	33.33	33.33	33.33	*100.00*
Non-formal learning and training programs developed and conducted by external providers (public and private training providers)					
Primary Care Facility	33.33	0.00	66.67	0.00	*100.00*
Health Care Facility - General Level 1	22.73	50.00	27.27	0.00	*100.00*
Health Care Facility - General Level 2	0.00	44.44	44.44	11.12	*100.00*
Health Care Facility - General Level 3	16.67	33.33	33.33	16.67	*100.00*
Supporting Services - Finance (Health Maintenance Organization)	11.11	55.56	22.22	11.11	*100.00*
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	33.33	33.33	33.33	*100.00*

Table 73 now presents the distribution of the heath facilities/supporting service companies by their rating of the various learning and development related statements and the type of ownership. The facilities/companies either agree or strongly agree, but there are also those who are neutral.

Privately owned facilities/companies and DOH hospitals have expressed agreement/strong agreement on providing formal and informal learning and training programs, whether conducted in-house or by private and public external providers. But a half of DOH hospitals are neutral when it comes to providing non-formal learning and training programs, either in-house or through external providers. Meanwhile, the highest percentage of other government-owned facilities are neutral when providing such programs in-house but have expressed strong agreement when conducted by private and public training providers.

Generally, the health facilities and supporting service companies are gearing more towards supporting externally provided training rather than in-house training.

In terms of the remaining statements, the highest percentage of the privately owned and DOH hospitals agree or strongly agree. This also applies to the other government owned facilities, with the exception that the highest percentage are either neutral or agree in providing or supporting only job-related learning and training. Since the survey was conducted during the height of the COVID-19 pandemic, the content of the learning and development initiatives may have been affected by the pressing health situation; thus, the foreseen need to focus first on job-related learning initiatives.

In contrast, part of the reasons cited for the difficulty in retaining employees and employees' underperformance are linked to the lack of soft skills and socio-emotional skills – skills that are oftentimes not specifically required in the job but are considered necessary.

Few of the facilities that are privately-owned (3.57%) and other government-owned (4.55%) strongly disagree with the statement that their employees have a say in their own learning and training needs. This is important to note because employees as the main clientele of the learning and development initiatives play a critical role in effectively determining the gap between their current and desired knowledge and competencies in the workplace. Additionally, the provision of programs that include emerging and future skills needs will likely impact the readiness of the facilities to adapt to the changing health environment and labor market landscape.

Table 73

Distribution of Health Facilities/Supporting Service Companies by Rating Various Statements related to Learning and Development, by Type of Ownership

Statement	Rating Scale					
	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Total %
We provide in-house formal learning and training programs.						
Privately Owned	0.00	7.14	10.71	35.71	46.43	100.00
DOH Hospitals	0.00	0.00	0.00	50.00	50.00	100.00
Other Government Owned	13.64	13.64	40.91	13.64	18.18	100.00
We provide in-house non-formal learning and training programs.						
Privately Owned	0.00	3.57	14.29	35.71	46.43	100.00
DOH Hospitals	0.00	0.00	50.00	0.00	50.00	100.00
Other Government Owned	13.64	4.55	31.82	27.27	22.73	100.00
We support formal learning and training programs conducted by private and public training providers.						
Privately Owned	0.00	3.57	0.00	39.29	57.14	100.00

DOH Hospitals	0.00	0.00	0.00	50.00	50.00	100.00
Other Government Owned	9.09	4.55	9.09	27.27	50.00	100.00
We support non-formal learning and training programs conducted by private and public training providers.						
Privately Owned	3.57	0.00	3.57	46.43	46.43	100.00
DOH Hospitals	0.00	0.00	50.00	50.00	0.00	100.00
Other Government Owned	4.55	9.09	13.64	27.27	45.45	100.00
We only provide or support learning and training programs that are required by the job (includes both in-house and external programs).						
Privately Owned	0.00	3.57	21.43	42.86	32.14	100.00
DOH Hospitals	0.00	0.00	0.00	100.00	0.00	100.00
Other Government Owned	13.64	13.64	36.36	18.18	18.18	100.00
Employees have a say in their own learning and training needs.						
Privately Owned	3.57	10.71	3.57	50.00	32.14	100.00
DOH Hospitals	0.00	50.00	0.00	0.00	50.00	100.00
Other Government Owned	4.55	4.55	22.73	45.45	22.73	100.00
Our learning and training programs cover future skills needs.						
Privately Owned	0.00	3.57	10.71	46.43	39.29	100.00
DOH Hospitals	0.00	0.00	0.00	50.00	50.00	100.00
Other Government Owned	4.55	13.64	0.00	40.91	40.91	100.00

While in Table 74, the rating as shown in Table 73 is broken down into subsectors. In most of the subsectors, the highest percentage of the health facilities/supporting service companies either agree or strongly agree with the various training-related statements given.

On the contrary, some respondents are neutral and others disagree with some of the statements. The highest percentage of Health Care Facility - General Level 1 health facilities are neutral when it comes to providing in-house learning and training programs, both formal and informal, as well as in providing or supporting learning and training programs that are required by the job only (includes both in-house and external programs). Whereas, in those two statements, the facilities in the Primary Care Facility equally disagree, neutral, and agree.

Furthermore, while 33% of Health Care Facility - General Level 3 facilities agreed or strongly agreed that their employees have a say in their own learning and training needs, 33% disagreed.

Table 74

Distribution of Health Facilities/Supporting Service Companies by Rating Various Statements Related to Learning and Development, by Subsector

Subsectors	Rating Scale (%)					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
We provide in-house formal learning and training programs.						
Primary Care Facility	0.00	33.33	33.33	0.00	33.33	100.00
Health Care Facility - General Level 1	13.64	13.64	36.36	27.27	9.09	100.00
Health Care Facility - General Level 2	0.00	0.00	22.22	22.22	55.56	100.00
Health Care Facility - General Level 3	0.00	0.00	0.00	33.33	66.67	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	11.11	11.11	44.44	33.33	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	0.00	100.00	100.00
We provide in-house non-formal learning and training programs.						
Primary Care Facility	0.00	0.00	0.00	66.67	33.33	100.00
Health Care Facility - General Level 1	13.64	4.55	40.91	27.27	13.64	100.00
Health Care Facility - General Level 2	0.00	0.00	33.33	22.22	44.44	100.00
Health Care Facility - General Level 3	0.00	0.00	0.00	16.67	83.33	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	11.11	0.00	55.56	33.33	100.00
Supporting Services - Health Information Management Services (Clinical and	0.00	0.00	0.00	0.00	100.00	100.00

Documentation Service Providers)						
We support formal learning and training programs conducted by private and public training providers.						
Primary Care Facility	0.00	0.00	0.00	0.00	100.00	100.00
Health Care Facility - General Level 1	9.09	4.55	9.09	36.36	40.91	100.00
Health Care Facility - General Level 2	11.11	0.00	0.00	22.22	66.67	100.00
Health Care Facility - General Level 3	0.00	0.00	0.00	33.33	66.67	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	0.00	0.00	55.56	44.44	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	33.33	66.67	100.00
We support non-formal learning and training programs conducted by private and public training providers.						
Primary Care Facility	0.00	0.00	0.00	0.00	100.00	100.00
Health Care Facility - General Level 1	4.55	9.09	13.64	40.91	31.82	100.00
Health Care Facility - General Level 2	11.11	0.00	11.11	33.33	44.44	100.00
Health Care Facility - General Level 3	0.00	0.00	0.00	33.33	66.67	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	0.00	11.11	55.56	33.33	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	33.33	66.67	100.00
We only provide or support learning and training programs that are required by the job (includes both in-house and external programs).						

Primary Care Facility	0.00	33.33	33.33	0.00	33.33	100.00
Health Care Facility - General Level 1	13.64	4.55	36.36	31.82	13.64	100.00
Health Care Facility - General Level 2	0.00	22.22	22.22	33.33	22.22	100.00
Health Care Facility - General Level 3	0.00	0.00	16.67	33.33	50.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	0.00	22.22	66.67	11.11	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	0.00	100.00	100.00
Employees have a say in their own learning and training needs.						
Primary Care Facility	0.00	0.00	0.00	66.67	33.33	100.00
Health Care Facility - General Level 1	4.55	4.55	22.73	45.45	22.73	100.00
Health Care Facility - General Level 2	11.11	11.11	0.00	44.44	33.33	100.00
Health Care Facility - General Level 3	0.00	33.33	0.00	33.33	33.33	100.00
Supporting Services - Finance (Health Maintenance Organization)	0.00	11.11	11.11	66.67	11.11	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	0.00	100.00	100.00
Our learning and training programs cover future skills needs.						
Primary Care Facility	0.00	0.00	0.00	33.33	66.67	100.00
Health Care Facility - General Level 1	4.55	13.64	4.55	40.91	36.36	100.00
Health Care Facility - General Level 2	0.00	11.11	0.00	66.67	22.22	100.00
Health Care Facility -	0.00	0.00	0.00	33.33	66.67	100.00

General Level 3						
Supporting Services - Finance (Health Maintenance Organization)	0.00	0.00	22.22	44.44	33.33	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	0.00	33.33	66.67	100.00

Considering the responses of the respondents on the various statements from the preceding tables (Table 73 and Table 74) in this section, the People Focus Index Score was generated (Table 75). The said index reflects the extent to which a site is paying attention to its human resources.

In this survey, people focus have a moderate correlation with value added index (0.44). The relationship may indicate that facilities who are greatly reliant on customized, innovative, and competitive products and services also tend to leverage on developing and utilizing their workers' skills and competencies. As such, employees working in facilities that have a high score for People Focus (Table 75) and Value Add (Table 85) may also have higher skills demanded for creativity (e.g. innovativeness).

The facility with the highest index score is a Health Care Facility - General Level 3 facility, though the remaining subsectors have a generally fair share of health facilities/supporting service companies in the top scorers.

In contrast, the lowest scorers are mostly Health Care Facility - General Level 1 facilities.

Table 75

People Focus Index by Health Facility/Supporting Service Company

Respondent Code	Subsector	People Focus Index Score
HCF_P_L3_018	Health Care Facility - General Level 3	33
HCF_G_L1_034	Health Care Facility - General Level 1	32
Support_HMO_008	Supporting Services - Finance (Health Maintenance Organization)	31
Support_HMO_001	Supporting Services - Finance (Health Maintenance Organization)	31

Support_Clinical_015	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	31
Support_HMO_002	Supporting Services - Finance (Health Maintenance Organization)	31
HCF_P_L2_015	Health Care Facility - General Level 2	31
HCF_G_L2_003	Health Care Facility - General Level 2	31
HCF_P_L2_052	Health Care Facility - General Level 2	31
HCF_G_L1_039	Health Care Facility - General Level 1	31
PCF_G_R2_001	Primary Care Facility	31
HCF_G_L1_034	Health Care Facility - General Level 1	31
HCF_P_L3_016	Health Care Facility - General Level 3	31
Support_Clinical_019	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	30
HCF_DOH_L3_001	Health Care Facility - General Level 3	30
HCF_G_L1_059	Health Care Facility - General Level 1	30
PCF_G_R2_005	Primary Care Facility	29
Support_Clinical_017	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	29
HCF_P_L2_065	Health Care Facility - General Level 2	28
HCF_DOH_L1_005	Health Care Facility - General Level 1	28
HCF_P_L3_004	Health Care Facility - General Level 3	28
PCF_G_R6_014	Primary Care Facility	28
HCF_P_L2_022	Health Care Facility - General Level 2	27

Support_HMO_006	Supporting Services - Finance (Health Maintenance Organization)	27
HCF_P_L1_055	Health Care Facility - General Level 1	27
HCF_G_L1_002	Health Care Facility - General Level 1	27
HCF_G_L2_004	Health Care Facility - General Level 2	27
HCF_P_L2_063	Health Care Facility - General Level 2	27
Support_HMO_003	Supporting Services - Finance (Health Maintenance Organization)	26
HCF_G_L1_050	Health Care Facility - General Level 1	26
Support_HMO_009	Supporting Services - Finance (Health Maintenance Organization)	26
HCF_P_L1_070	Health Care Facility - General Level 1	26
HCF_G_L1_047	Health Care Facility - General Level 1	26
HCF_P_L3_006	Health Care Facility - General Level 3	26
HCF_P_L1_022	Health Care Facility - General Level 1	26
Support_HMO_011	Supporting Services - Finance (Health Maintenance Organization)	25
HCF_DOH_L3_010	Health Care Facility - General Level 3	25
HCF_P_L1_039	Health Care Facility - General Level 1	25
HCF_G_L2_005	Health Care Facility - General Level 2	25
HCF_G_L1_061	Health Care Facility - General Level 1	24
Support_HMO_005	Supporting Services - Finance (Health Maintenance Organization)	24
HCF_G_L1_02	Health Care Facility - General Level 1	24
HCF_G_L1_017	Health Care Facility - General Level 1	24
HCF_G_L1_053	Health Care Facility - General Level	23

	1	
HCF_P_L1_003	Health Care Facility - General Level 1	23
HCF_G_L1_026	Health Care Facility - General Level 1	21
Support_HMO_007	Supporting Services - Finance (Health Maintenance Organization)	20
HCF_G_L1_046	Health Care Facility - General Level 1	19
HCF_G_L1_025	Health Care Facility - General Level 1	18
HCF_G_L1_071	Health Care Facility - General Level 1	17
HCF_P_L2_028	Health Care Facility - General Level 2	16
HCF_G_L1_018	Health Care Facility - General Level 1	11

In a broader sense, the results above do not deviate to the average people focus index scores per subsector, with the highest average index score being Supporting Services - HIMS (Clinical and Documentation Service Providers) and the lowest being Health Care Facility - General Level 1.

As the People Focus Index reflects the extent to which a site is paying attention to its human resources, a close review of the subsectors that had the highest scores in Table 76 revealed that these are the same subsectors that focused on learning and development initiatives focusing on future skills needs and non-job training.

Table 76

Average People Focus Index Score by Subsector

Subsector	Average People Focus Index Score
Primary Care Facility	29.33
Health Care Facility - General Level 1	24.50
Health Care Facility - General Level 2	**27.00**
Health Care Facility - General Level 3	28.83
Supporting Services - Finance (Health Maintenance Organization)	**26.78**
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	30.00

4.7 Work and Employment Practice

This section covers the health facilities and supporting service companies' policies, the percentage of full-time employees eligible for rewards and opportunities, and the extent to which business strategies, financial information, operational challenges, and market analyses are shared.

Accordingly, Table 77 shows that the health facilities/supporting service companies have varying policies covering the specified documents. Notably, the percentage of the training plan (90.38%) exceeds other documents, followed by the training budget and staff development policy/plan, both of which are implemented in 88.46% of the facilities. Only a little over three-fourths of the facilities have policies covering development for high potential staff. This is a direct translation of the importance being placed by the health sector on training and human resource development, which in turn will impact provision of health services and the general health of the public.

Table 77

Percentage of Health Facilities/Supporting Service Companies with Policies Covering Various Documents

Documents	%
Business Plan	84.62
Training Plan	90.38
Training Budget	88.46
Staff Development Policy/Plan	88.46
Development for High Potential Staff	76.92

Note. Multiple responses were allowed.

The scattered distribution of health facilities/supporting service companies is apparent from table 78 but shows that the majority of the facilities across all of the subsectors cover the abovementioned policies. Moreover, all the three respondents from the Supporting Services - HIMS (Clinical and Documentation Service Providers) adopt business plans, training plans, training budget, staff development policy/plan, and development for high potential staff. It should also be noted that all of the participating facilities in the same subsector have structured programs for managing high potential employees (Table 44).

Moreover, when presented by the type of ownership (Table 79), the DOH hospitals have the cited documents covered at 100%. But in summary, the majority of the facilities, regardless of the type of ownership, have policies covering all the documents.

Table 78

Percentage of Health Facilities/Supporting Service Companies with Policies Covering Various Documents by Subsector

Subsector	Business Plan	Training Plan	Training Budget	Staff Development Policy/Plan	Development for High Potential Staff
Primary Care Facility	66.67	100.00	100.00	100.00	66.67
Health Care Facility - General Level 1	77.27	90.91	81.82	86.36	81.82
Health Care Facility - General Level 2	88.89	77.78	88.89	88.89	55.56
Health Care Facility - General Level 3	83.33	100.00	100.00	100.00	83.33
Supporting Services - Finance (Health Maintenance Organization)	100.00	88.89	88.89	77.78	77.78
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	100.00	100.00	100.00	100.00	100.00

Note. Multiple responses were allowed.

Table 79

Percentage of Health Facilities/Supporting Service Companies with Policies Covering Various Documents by Type of Ownership

Type of Ownership	Business Plan (%)	Training Plan (%)	Training Budget (%)	Staff Development Policy/Plan (%)	Development for High Potential Staff (%)
Private	96.43	92.86	85.71	89.29	82.14
DOH Hospitals	100.00	100.00	100.00	100.00	100.00
Other Government Owned	68.18	86.36	90.91	86.36	68.18

The respondents were also asked about the percentage of full-time employees in their facility who are entitled to certain rewards or opportunities to understand how systems work within the business that supports performance outcomes and competitiveness.

According to Table 80, the majority, if not all, of the facilities provide the majority of their full-time employees pay-related and non-pay benefits regardless of the ownership type. However, it is also evident that among all the specified benefits, opportunities for job rotation at other locations (including overseas) got the least percentage. Only 15.18% of the

employees from other government-owned hospitals are entitled to the said opportunity.

For pay-related benefits, bonuses based on overall organizational performance are available to 100% of DOH hospitals employees and the majority of privately-owned and other government-owned facilities. This is followed by individual performance related pay. Whereas, non-pay benefits such as child-care, health insurance, travel allowance, study leave, food subsidies among others, are available to the majority of the employees except for other government-owned hospitals with just about half of their employees covered.

Further, it shall be noted that the percentages of employees reflected in Table 80 may also be affected by the nature of ownership. For instance, during the interviews conducted with government hospitals, the respondents explained that some of the rewards may not be applicable to them such as share options for employees. The provision of various rewards and opportunities like those listed in Table 80 is considered as employee recognition, which according to Mann and Dvorak (2016) is a low cost but high impact strategy to attract and retain employees while at the same time “increasing organic growth and employee productivity”.

Table 80

Percentage of Full-Time Employees in the Facilities Entitled to Various Rewards or Opportunities, by Type of Ownership

Rewards or Opportunities	Percentage (%)		
	Privately Owned	Government-Owned	
		DOH Hospitals	Others
Individual performance related pay	71.82	100.00	60.00
Bonuses based on overall organizational performance	64.46	100.00	75.87
Share options for employees	14.86	90.00	24.23
Eligible for internal promotion	67.86	85.00	42.50
Non-pay benefits (such as child-care, health insurance, travel allowance, study leave, food subsidies etc.)	61.86	100.00	48.56
Opportunities for job rotation at other locations (including overseas)	34.18	25.50	15.18
Overtime pay	79.77	25.50	15.77

A Mutual Gains Index has been created based on the responses from the facilities in Table 80. This index reflects the facility's provisions for pay and non-pay benefits to entice workers to commit. In this survey, mutual gains have a moderate correlation with value add (0.44). The ability to innovate, according to Kaplan (2019), is critical for businesses and

organizations to remain competitive and this innovativeness is driven by one key ingredient: employee engagement. He further defined engagement as “how involved and dedicated an individual is to the job they hold” (Kaplan, 2019). Interestingly, the provision of pay and non-pay benefits is a means to acknowledge the employees; making the employees feel that they are seen, heard, and valued will more likely increase their commitment to the job.

Employees in facilities with a high mutual gains index score are well informed about their facility's business/organizational situation, and technology adoption is also higher. Health Care Facility - General Level 1 and General Level 3 are the top two facilities with the highest Mutual Gains Index score. Likewise, the majority of facilities with the lowest Mutual Gains Index score are from General Level 1 facilities (Table 81).

Moreover, the Supporting Services - HIMS (Clinical and Documentation Service Providers) have the highest average Mutual Gains Index Scores while Health Care Facility - General Level 2 have the lowest average (Table 82).

Table 81

Mutual Gains Index by Health Facility/Supporting Service Company

Respondent Code	Subsector	Mutual Gains Index Score
HCF_G_L1_034	Health Care Facility - General Level 1	700
HCF_DOH_L3_001	Health Care Facility - General Level 3	650
Support_Clinical_015	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	600
Support_HMO_009	Supporting Services - Finance (Health Maintenance Organization)	600
Support_HMO_002	Supporting Services - Finance (Health Maintenance Organization)	600
Support_Clinical_019	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	560
HCF_P_L2_052	Health Care Facility - General Level 2	560
HCF_DOH_L1_005	Health Care Facility - General Level 1	550

HCF_P_L3_006	Health Care Facility - General Level 3	550
HCF_DOH_L3_010	Health Care Facility - General Level 3	502
Support_HMO_006	Supporting Services - Finance (Health Maintenance Organization)	500
HCF_G_L1_047	Health Care Facility - General Level 1	500
HCF_G_L1_046	Health Care Facility - General Level 1	500
Support_HMO_011	Supporting Services - Finance (Health Maintenance Organization)	497
Support_Clinical_017	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	496
HCF_P_L1_022	Health Care Facility - General Level 1	490
HCF_P_L3_016	Health Care Facility - General Level 3	485.69
Support_HMO_003	Supporting Services - Finance (Health Maintenance Organization)	480
Support_HMO_001	Supporting Services - Finance (Health Maintenance Organization)	480
HCF_P_L3_018	Health Care Facility - General Level 3	480
HCF_P_L1_039	Health Care Facility - General Level 1	469
Support_HMO_005	Supporting Services - Finance (Health Maintenance Organization)	430
HCF_G_L1_017	Health Care Facility - General Level 1	417
Support_HMO_008	Supporting Services - Finance (Health Maintenance Organization)	408
PCF_G_R2_005	Primary Care Facility	400

HCF_G_L1_071	Health Care Facility - General Level 1	400
HCF_G_L1_026	Health Care Facility - General Level 1	370
HCF_P_L1_055	Health Care Facility - General Level 1	365
HCF_G_L1_02	Health Care Facility - General Level 1	349
HCF_G_L2_004	Health Care Facility - General Level 2	345
HCF_G_L1_061	Health Care Facility - General Level 1	325
HCF_G_L1_025	Health Care Facility - General Level 1	305
HCF_G_L2_005	Health Care Facility - General Level 2	250.97
HCF_P_L3_004	Health Care Facility - General Level 3	237
HCF_P_L2_022	Health Care Facility - General Level 2	230
HCF_G_L1_059	Health Care Facility - General Level 1	205
HCF_G_L1_050	Health Care Facility - General Level 1	200
HCF_G_L1_039	Health Care Facility - General Level 1	200
PCF_G_R2_001	Primary Care Facility	200
HCF_P_L2_065	Health Care Facility - General Level 2	180
HCF_G_L1_053	Health Care Facility - General Level 1	152
HCF_P_L2_063	Health Care Facility - General Level 2	127
Support_HMO_007	Supporting Services - Finance (Health Maintenance Organization)	115
HCF_P_L1_003	Health Care Facility - General Level 1	115
HCF_P_L2_015	Health Care Facility - General Level 2	100

HCF_P_L2_028	Health Care Facility - General Level 2	100
HCF_G_L2_003	Health Care Facility - General Level 2	100
PCF_G_R6_014	Primary Care Facility	100
HCF_P_L1_070	Health Care Facility - General Level 1	100
HCF_G_L1_034	Health Care Facility - General Level 1	85
HCF_G_L1_018	Health Care Facility - General Level 1	80
HCF_G_L1_002	Health Care Facility - General Level 1	72.44

Table 82

Average Mutual Gains Index by Subsector

Subsector	Average Mutual Gains Index Score
Primary Care Facility	233.33
Health Care Facility - General Level 1	315.88
Health Care Facility - General Level 2	221.44
Health Care Facility - General Level 3	484.12
Supporting Services - Finance (Health Maintenance Organization)	456.67
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	552.00

In terms of information sharing, the results in Table 83 show that the majority of the facilities only share financial information and market analysis only with some of their in-house employees. However, operational challenges and facility plans were shared with all employees by the majority of the facilities. Moreover, some 5.77% and 15.39% of the facilities noted that financial information and market analysis, respectively were inapplicable.

Table 83

Distribution of the Health Facilities/Supporting Service Companies by Extent of Sharing Various Information

Information	Extent of Sharing

	Not generally shared (%)	Only with some employees e.g. management only (%)	Shared with ALL employees (%)	Not Applicable	Total (%)
Financial Information	13.46	55.77	25.00	5.77	100.00
Health Facility/Supporting Service Company Plans	1.92	26.92	71.16	0.00	100.00
Operational Challenges	7.69	34.62	57.69	0.00	100.00
Market Analysis	1.92	57.69	25.00	15.39	100.00

4.8 Business Strategy

This section covers the the various approaches that businesses (in this case the facilities) use to successfully compete in the market, the extent to which collaboration with the academe and government education agencies are implemented, and the plans of expansion on the other areas of business development. All these information are key in understanding the factors that may influence the skills demanded by the facility and the industry.

Among the various approach to business (Table 84), the highest percentage of privately-owned facilities (46.43%) agree that compared to other facilities in the health sector, the competitive success of their products/services is dependent on price in the vast majority of cases. This data is reflective of the high cost of health care services in the Philippines and the continuous pursuit of the government to provide affordable, quality care for all (Dayrit et al., 2018).

The same percentage (46.43%) of the respondents agree that their products and services rely on developing unique or innovative products or services. As DOH (2010) as cited in DOH (2012) points out, “affordability is the main reason for going to a government medical facility, while excellent service is the main reason for going to a private medical facility”.

On the other hand, the highest percentage of the Government-Owned facilities (41.67%) agree that there is ‘more-than-average’ amount of customization in their products and services.

Table 84

Distribution of the Health Facilities/Supporting Service Companies by Rating Various Approaches to Business, by Type of Ownership

	Rating Scale					
Approach to Business	Strongly Disagre	Disagree	Neutral (%)	Agree (%)	Strongly Agree	Total %

	e (%)	(%)			(%)	
			Privately Owned			
Compared to other facilities in the Health Sector, there is a ‘more-than-average’ amount of customization in our products and services	0.00	0.00	32.14	39.29	28.57	100.00
Compared to other facilities in Health Sector the competitive success of our products and services is dependent on price in the vast majority of cases	0.00	0.00	25.00	46.43	28.57	100.00
Our business mostly competes in a market of premium quality products or services	0.00	0.00	21.43	42.86	35.71	100.00
Our products and services rely on developing unique or innovative products or services	0.00	3.57	21.43	46.43	28.57	100.00
			Government Owned			
Compared to other enterprises in the Health Sector, there is a ‘more-than-average’ amount of customization in our products and services	4.17	4.17	29.17	41.67	20.82	100.00
Compared to other enterprises in Health Sector the competitive success of our products and services is dependent on price in the vast majority of cases	12.50	16.67	25.00	37.50	8.33	100.00
Our business mostly competes in a market of premium quality products or services	8.33	8.33	33.33	33.33	16.68	100.00

Our products and services rely on developing unique or innovative products or services	8.33	12.50	41.67	29.17	8.33	100.00

Based on the responses of the participating facilities in Table 84, a Value-Add (VA) Index has been generated. The VA Index measures where the site is located along a value chain. Hence, the site can be engaging a ‘low’ VA segment by selling services or products that are cheaper/lower-priced, or the high segment that provides more bespoke/customized/innovative services or products. Relatably, a site with a high VA score requires more skills from its workers.

Based on the results of this survey, the VA has a moderate correlation with People Focus and Mutual Gains both at 0.44. Facilities with a high VA score are highly skilled, well-informed of their sites’ business situation, highly encouraged to contribute their ideas and suggestions, and perform well so they continue to provide high-value products and services. Relative to this, the provision of pay and non-pay benefits may be an added factor to entice workers to commit, perform well, and engage in the facility. Further, with the possibly higher skills demanded for creativity in facilities with high Value Add, conduct of education and training is considered as critical for the facilities to continue leveraging on their worker's skills and competencies.

One facility from the Health Care Facility - General Level 1 received the highest VA Index Score. This further supports the results in Table 49 (employees by performance evaluation) where General Level 1 hospital is among those with the lowest percentage of employees that are underutilized.

Table 85

Value Add Index Score by Health Facility/Supporting Service Company

Respondent Code	Subsector	VA Index Score
HCF_G_L1_046	Health Care Facility - General Level 1	17
Support_HMO_001	Supporting Services - Finance (Health Maintenance Organization)	16
Support_Clinical_015	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	16
Support_HMO_009	Supporting Services - Finance (Health Maintenance Organization)	16
HCF_G_L2_003	Health Care Facility - General Level 2	16
HCF_P_L2_052	Health Care Facility - General Level 2	16
HCF_P_L3_006	Health Care Facility - General Level 3	16

PCF_G_R2_001	Primary Care Facility	16
HCF_G_L1_034	Health Care Facility - General Level 1	16
Support_HMO_008	Supporting Services - Finance (Health Maintenance Organization)	15
HCF_P_L2_022	Health Care Facility - General Level 2	15
Support_HMO_002	Supporting Services - Finance (Health Maintenance Organization)	15
HCF_G_L1_061	Health Care Facility - General Level 1	15
HCF_DOH_L3_010	Health Care Facility - General Level 3	15
HCF_P_L1_055	Health Care Facility - General Level 1	15
HCF_G_L2_005	Health Care Facility - General Level 2	15
HCF_G_L1_017	Health Care Facility - General Level 1	15
HCF_P_L3_018	Health Care Facility - General Level 3	15
Support_Clinical_017	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	15
HCF_P_L3_016	Health Care Facility - General Level 3	15
Support_HMO_003	Supporting Services - Finance (Health Maintenance Organization)	14
HCF_P_L2_065	Health Care Facility - General Level 2	14
HCF_DOH_L1_005	Health Care Facility - General Level 1	14
HCF_G_L1_02	Health Care Facility - General Level 1	14
HCF_P_L2_028	Health Care Facility - General Level 2	14
HCF_P_L3_004	Health Care Facility - General Level 3	14
HCF_P_L1_070	Health Care Facility - General Level 1	14
HCF_G_L1_047	Health Care Facility - General Level 1	14
HCF_G_L1_034	Health Care Facility - General Level 1	14
HCF_P_L1_022	Health Care Facility - General Level 1	14
Support_HMO_011	Supporting Services - Finance (Health Maintenance Organization)	13
HCF_DOH_L3_001	Health Care Facility - General Level 3	13
Support_HMO_006	Supporting Services - Finance (Health Maintenance Organization)	13
PCF_G_R2_005	Primary Care Facility	13
HCF_G_L1_059	Health Care Facility - General Level 1	13
HCF_G_L1_039	Health Care Facility - General Level 1	13
HCF_G_L2_004	Health Care Facility - General Level 2	13

HCF_P_L2_063	Health Care Facility - General Level 2	13
HCF_G_L1_050	Health Care Facility - General Level 1	12
Support_HMO_007	Supporting Services - Finance (Health Maintenance Organization)	12
HCF_P_L2_015	Health Care Facility - General Level 2	12
Support_HMO_005	Supporting Services - Finance (Health Maintenance Organization)	12
HCF_G_L1_025	Health Care Facility - General Level 1	12
HCF_P_L1_039	Health Care Facility - General Level 1	12
HCF_G_L1_026	Health Care Facility - General Level 1	12
HCF_G_L1_053	Health Care Facility - General Level 1	12
Support_Clinical_019	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	11
PCF_G_R6_014	Primary Care Facility	11
HCF_P_L1_003	Health Care Facility - General Level 1	11
HCF_G_L1_071	Health Care Facility - General Level 1	10
HCF_G_L1_002	Health Care Facility - General Level 1	9
HCF_G_L1_018	Health Care Facility - General Level 1	8

In addition, the Health Care Facility - General Level 3 has the highest average VA Index score, followed by Health Care Facility - General Level 2. These subsectors also have the highest average People Focus Index scores matching the high regards for developing the human resource and consequently high skills utilization.

However, when matched with the data on the presence of underutilization of employees, data for HMO and General Level 2 hospitals are not matching. Both of the subsectors have high value add but in the bottom low for people focus and have the highest share of employees who have the potential to perform more demanding duties than they currently have. The reason for this, unfortunately, was not explored in this study.

Table 86

Average Value Add Index Score by Subsector

Subsector	Average VA Index Score
Primary Care Facility	13.33
Health Care Facility - General Level 1	13.00

Health Care Facility - General Level 2	14.22
Health Care Facility - General Level 3	14.67
Supporting Services - Finance (Health Maintenance Organization)	14.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	14.00

Among all the subsectors, only the Supporting Services - HIMS (Clinical and Documentation Service Providers) has all its companies create/change some jobs as a result of the collaboration with the Academe and the Government Education Agencies. All the three companies from the said subsector are members of an association that recognize TESDA's role as a government education agency.

On another note, the majority of the facilities in the Primary Care and Health Care Facility - General Level 3 also have created/changed some jobs following the collaboration, while the majority of the facilities in General Level 1 subsector still have no action but are planning to act. Few of the facilities from all subsectors, except Primary Care Facility and Supporting Services - HIMS (Clinical and Documentation Service Providers), have no action and also do not have plans to collaborate concerning future skills supply in the near future.

Table 87

Distribution of the Health Facilities/Supporting Service Companies by Extent of Implementation on Collaborating with the Academe and the Government Education Agencies for Future Skills Supply by Subsector

Subsector	Extent of Implementation			
	No action so far and no plan in the near future (%)	No action so far but planning to act (%)	Have created/changed some jobs as described (%)	Total %
Primary Care Facility	0.00	33.33	66.67	100.00
Health Care Facility - General Level 1	13.64	68.18	18.18	100.00
Health Care Facility - General Level 2	11.11	44.44	44.44	100.00
Health Care Facility - General Level 3	16.67	16.67	66.66	100.00
Supporting Services - Finance (Health Maintenance Organization)	11.11	44.44	44.44	100.00

Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	0.00	100.00	100.00

The majority of the facilities in most subsectors intend to expand on other areas of development. In the case of the Health Care Facility - General Level 1, only half of the facilities (11 facilities) have plans for expansion.

When linked to the expected change in the number of employees, all of the three facilities under the Supporting Services - HIMS (Clinical and Documentation Service Providers) answered that there is an expected increase in their employees (Table 24). However, one of these three facilities does not plan to expand in other areas of development. As such, some facilities may not necessarily consider the increase in employee size as an expansion.

Table 88

Percentage of Health Facilities/Supporting Service Companies with Plans to Expand on Other Areas of Development by Subsector

Subsector	%
Primary Care Facility	66.67
Health Care Facility - General Level 1	50.00
Health Care Facility - General Level 2	55.56
Health Care Facility - General Level 3	83.33
Supporting Services - Finance (Health Maintenance Organization)	66.67
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	66.67

The common areas of development mentioned in Table 89 can be categorized as follows:

1. Infrastructure Development and Equipment Acquisition (e.g. construction of new buildings/laboratories/training facilities, latest machines and equipment)
2. Quality of Service
3. Provision of Additional Services (e.g. Internal Medicine, Pediatrics, etc.)
4. Program/Course Accreditation and Learning and Development Support (e.g nursing, admin, IT, etc.)
5. Geographical (i.e. regional expansion in the Philippines; ASEAN)

The majority of the subsectors that are planning for expansion mentioned plans for expanding in infrastructure development and equipment acquisition as well as moving towards the program/course accreditation and Learning and Development Support.

One emerging area in the health sector is the medical tourism, defined as the “availment of medical services by foreign patients, with services including prevention, diagnostic and treatment procedures, cure of diseases, and rehabilitation” (Limpitikranon et al., 2019 as cited in Francisco et al., 2021). With the plans for continuous improvement and expansion on health facilities and modern equipment, the Philippines will have better opportunities for medical tourism. In 2020 Medical Tourism Index, the Philippines ranks 24th out of 46 countries, a country emerging in this field (International Trade Administration, 2022).

Table 89

Areas of Development for Expansion by Subsector

Subsector	Identified Areas of Development
Primary Care Facility	○ Encourage masteral education for employees ○ Expansion of health facility
Health Care Facility - General Level 1	○ Upgrading level of service (e.g. upgrading the quality of services offered by our institution) ○ Provision of additional services (e.g. in-patient and out-patient services; General Clinical Services in Internal Medicine, Pediatrics, Surgery, Obstetrics and Gynecology and Anesthesia) ○ Diplomate and Fellow Teaching and Training Facility ○ Intensive care units, bacteriologic laboratory ○ Additional bed capacity ○ Accreditation of other special hospital-related skills such Caregiving Course (Elderly and Patient with special needs) ○ Construction of isolation ward intended to Covid patient and other contagious disease ○ Public Health Unit - Rehabilitation Department ○ Efficiency on information technology
Health Care Facility - General Level 2	○ Continuous improvement of the health facility ○ Acquisition of latest machines or equipments ○ Operation ○ Increase the salary of our health workers ○ Expansion of services (e.g. Plans to be a Level 3 hospital in the future; Ancillary Service)
Health Care Facility - General Level 3	○ Creation of end referral multi specialty centers; more hospitals ○ Advancement on all medical departments (creating Sub-Specialty programs) ○ Creation of training programs for medical, nursing, allied-healthcare and admin support; Medicine and Non Medicine Program ○ Improvement of hospital structure expansion of diagnostic facilities ○ Accreditation of Programs

Supporting Services - Finance (Health Maintenance Organization)	○ Expand data analytics ○ Provide learning and development support for highly specialized and technical skills (IT, Actuarial and Finance). ○ Expansion to regional areas in the Philippines ○ Customer Service Technological Innovations ○ Pharmacy ○ Enhanced accounting and claims processing system
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	○ Clinical Documentation and Pharmaceutical Documentation Services ○ Expand reach in terms of services and functions (i.e. pharmacy benefit management, accounting, HR) ○ Going beyond the market to expand to ASEAN

4.9 Work Processes and Technology

This section discusses how up-to-date is the facility's core equipment when compared to the best commonly available technologies in the country and overseas presented by subsector and by type of ownership, then highlights how technology impacts other workplace matters.

Table 90 shows that, when compared to commonly available technology in the country, the majority of health facilities/supporting service companies across the subsectors have up-to-date core equipment. When compared to those in other countries, however, the distribution varies. Only supporting service companies and one-third of primary care facilities have up to date core equipment. In response to the varied distribution, majority of the subsectors are moving towards the acquisition of the latest machines and equipment as part of expansion (Table 89).

Further, the majority of the Health Care Facility - General 1 is more than 5 years behind in common core equipment available overseas. It may also be noted that this is the only subsector in which a percentage of facilities are more than 5 years behind in technology even when compared to those available in the country.

Table 90

Distribution of the Health Facilities/Supporting Service Companies by Core Equipment Condition as Compared with the Best Commonly Available Technology by Subsector

Subsector	How up-to-date is the equipment			
	Up to date (%)	1 to 5 years behind (%)	More than 5 years behind (%)	Total %
Compared with those in the country				

Primary Care Facility	100.00	0.00	0.00	100.00
Health Care Facility - General Level 1	50.00	45.45	4.55	100.00
Health Care Facility - General Level 2	77.78	22.22	0.00	100.00
Health Care Facility - General Level 3	100.00	0.00	0.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	88.89	11.11	0.00	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	100.00	0.00	0.00	100.00
Compared with those overseas				
Primary Care Facility	33.33	33.33	33.33	100.00
Health Care Facility - General Level 1	13.64	36.36	50.00	100.00
Health Care Facility - General Level 2	44.44	55.56	0.00	100.00
Health Care Facility - General Level 3	50.00	50.00	0.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	55.56	33.33	11.11	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	66.67	33.33	0.00	100.00

Similarly, the pattern in Table 90 aligns with the results in Table 91, indicating that, regardless of ownership type, health facilities/supporting service companies are mostly up to date when compared to the best commonly available technology in the country, but vary when compared internationally.

Interestingly, all DOH hospitals stated that their core equipment is up to date when compared to available technology in the country and abroad. However, it is to be noted that the DOH hospitals in this survey only account to two facilities. In contrast, a high percentage of other government owned facilities (40.91%), despite being funded by the government, have core equipment which are more than five years behind when compared to technologies overseas.

The result is consistent with the Health System Review for the Philippines of the WHO on behalf of the Asia Pacific Observatory on Health Systems and Policies. The assessment showed that per-facility capital investments are higher in DOH hospitals than those in the LGU level (Dayrit, et al., 2018). Thus, highlighting the concern that as the physical capacities of DOH hospitals may increase, “improvements in the physical capacity of lower-level first point-of-care” may be curtailed, further limiting the solution to the “observed inferior quality of hospitals in the periphery” (Dayrit, et al., 2018).

On another note, although the majority of privately owned facilities are up to date when compared with those in the country, a few (3.57%) have equipment that are more than five years behind. Still, the private sector generally have more up-to-date equipment when both compared locally and abroad than the public sector. The Philippine Health Facility Development Plan 2020-2040 highlighted the need for the government to increase “annual spending by more than two folds on top of private sector spending” (Department of Health, 2020); such spending includes capital formation (e.g. medical equipment).

Table 91

Distribution of the Health Facilities/Supporting Service Companies by Core Equipment Condition as Compared with the Best Commonly Available Technology by Type of Ownership

Type of Ownership	How up-to-date is the equipment			
	Up to date (%)	1 to 5 years behind (%)	More than 5 years behind (%)	Total %
Compared with those in the country				
Privately Owned	82.14	14.29	3.57	100.00
DOH Hospitals	100.00	0.00	0.00	100.00
Other Government Owned	59.09	40.91	0.00	100.00
Compared with those overseas				
Privately Owned	35.71	50.00	14.29	100.00
DOH Hospitals	100.00	0.00	0.00	100.00
Other Government Owned	27.27	31.82	40.91	100.00

4.10 Organizational Performance

Section 4.10 discusses the information gathered about the distribution of the participating facilities by the rating of outcomes for the period 2020 to 2021 across the type of ownership and by subsector. Besides this, the percentage of employees exhibiting various behaviors at work is also presented in this section.

Table 92 shows how organizational performance in terms of the specified outcomes differs depending on the type of facility ownership. Other government-owned facilities have determined that none of the three outcomes apply to them. It is worth noting, however, that only in other government-owned facilities has the highest percentage of facilities seen an increase in total sales/revenue.

Private facilities and DOH Hospitals exhibit the same trend for all three specified outcomes, with the highest percentage of facilities experienced decreased profitability while maintaining a constant market share.

Table 92

Distribution of the Health Facilities/Supporting Service Companies by Rating of Different Outcomes from 2020 to 2021, by Type of Ownership

Type of Ownership	Rating				
	Decrease (%)	Stay the same (%)	Increase (%)	Not Applicable	Total (%)
Profitability					
Private	46.43	21.43	32.14	0.00	*100.00*
DOH Hospitals	50.00	50.00	0.00	0.00	*100.00*
Other government owned	22.73	27.27	22.73	27.27	*100.00*
Total Sales/ Revenue					
Private	39.29	25.00	35.71	0.00	*100.00*
DOH Hospitals	50.00	50.00	0.00	0.00	*100.00*
Other government owned	31.82	9.09	36.36	22.73	*100.00*
Market Share					
Private	14.29	60.71	17.86	7.14	*100.00*
DOH Hospitals	0.00	100.00	0.00	0.00	*100.00*
Other government owned	13.64	18.18	18.18	50.00	*100.00*

Whereas, by subsector, the ratings of the three outcomes mostly vary, with the exception of market share, where the highest percentage mostly constitutes a constant market share.

Among the subsectors, Supporting Services - Finance (Health Maintenance Organization) is the only subsector where the majority of the supporting companies will have an increase in profitability from 2020 to 2021. In contrary, General 2 and General 3 Health Care Facility are the only subsectors where the majority of their facilities will have a decrease in profitability. On total sales/revenue, these subsectors show the same trend. But in addition, other subsectors including Health Care Facility - General 1 and Supporting Services - HIMS (Clinical and Documentation Service Providers) also had an increase in total sales/revenue.

Further, all three outcomes are not applicable to the majority of Primary Care Facility, considering the nature of the respondents which are from rural health and municipal health units, where the public can get free access to primary care services.

Table 93

Distribution of the Health Facilities/Supporting Service Companies by Rating of Different Outcomes from 2020 to 2021, by Subsector

Subsector	Rating				
	Decrease (%)	Stay the same (%)	Increase (%)	Not Applicable	Total (%)
Profitability					
Primary Care Facility	0.00	0.00	33.33	66.67	*100.00*
Health Care Facility - General Level 1	27.27	36.37	27.27	9.09	*100.00*
Health Care Facility - General Level 2	77.78	0.00	0.00	22.22	*100.00*
Health Care Facility - General Level 3	66.66	16.67	16.67	0.00	*100.00*
Supporting Services - Finance (Health Maintenance Organization)	22.22	22.22	55.56	0.00	*100.00*
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	66.67	33.33	0.00	*100.00*
Total Sales/ Revenue					
Primary Care Facility	0.00	0.00	33.33	66.67	*100.00*
Health Care Facility - General Level 1	36.36	18.18	40.91	4.55	*100.00*
Health Care Facility - General Level 2	66.67	11.11	0.00	22.22	*100.00*
Health Care Facility - General Level 3	66.66	16.67	16.67	0.00	*100.00*
Supporting Services - Finance (Health Maintenance Organization)	11.11	33.33	55.56	0.00	*100.00*
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	33.33	66.67	0.00	*100.00*
Market Share					
Primary Care Facility	0.00	0.00	0.00	100.00	*100.00*
Health Care Facility - General Level 1	18.18	31.82	18.18	31.82	*100.00*
Health Care Facility - General Level 2	22.22	44.45	0.00	33.33	*100.00*
Health Care Facility - General Level 3	16.67	83.33	0.00	0.00	*100.00*

Supporting Services - Finance (Health Maintenance Organization)	0.00	55.56	44.44	0.00	*100.00*
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	0.00	66.67	33.33	0.00	*100.00*

The Organizational Performance Index has been created whose findings from other indices can be related as contributing or inhibiting factors. Based on the results of the correlation, Organizational Performance is moderately correlated (0.44) with Mutual Gains. It can be recalled that Mutual Gains Index reflects the provision of pay and non-pay benefits to employees to entice them to commit and influence discretionary effort and innovations.

The provision of benefits may also influence (although not necessarily promise) employee advocacy, generally defined as the promotion of the company “by the people who work for it” (Levinson, 2018). Various benefits are being linked and examined to employee advocacy including the boosting of facility/company visibility that may likewise, influence the outcomes mentioned in Table 93.

Moreover, the relationship between mutual gains and organizational performance may also be reflected in what is referred to as brand activism. Brand activism happens when a “social, economic, environmental, cultural, and social issues” are supported by a company or brand that may also be translated in the company’s values and visions (Shetty et al., 2019). In a survey participated by more than 1,000 US adults, close to two-thirds (63%) of the consumers noted that the employee welfare is the “most important issue” to them (i.e knowing a company treats their employees well) (Jungle Scout, 2021).

From Table 94 it can be seen that 7 out of 52 facilities received the highest Organizational Performance Index, mostly from the Supporting Services - Finance (Health Maintenance Organization), followed by Health Care Facility - General Level 1, and Supporting Services - HIMS (Clinical and Documentation Service Providers). A high Organizational Performance Index is a measurement of how well an facility/company/organization achieve both its financial and non-financial objectives.

Table 94

Organizational Performance Index by Health Facility/Supporting Service Company

Respondent Code	Subsector	Organizational Performance Index Score
Support_HMO_008	Supporting Services - Finance (Health Maintenance Organization)	12
Support_Clinical_015	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	12

Support_HMO_011	Supporting Services - Finance (Health Maintenance Organization)	12
Support_HMO_002	Supporting Services - Finance (Health Maintenance Organization)	12
Support_HMO_005	Supporting Services - Finance (Health Maintenance Organization)	12
HCF_G_L1_046	Health Care Facility - General Level 1	12
HCF_G_L1_018	Health Care Facility - General Level 1	12
HCF_G_L1_061	Health Care Facility - General Level 1	11
HCF_P_L3_004	Health Care Facility - General Level 3	11
HCF_G_L1_034	Health Care Facility - General Level 1	11
Support_Clinical_019	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	10
Support_HMO_009	Supporting Services - Finance (Health Maintenance Organization)	10
Support_HMO_006	Supporting Services - Finance (Health Maintenance Organization)	10
HCF_G_L1_071	Health Care Facility - General Level 1	10
Support_HMO_003	Supporting Services - Finance (Health Maintenance Organization)	9
HCF_G_L1_050	Health Care Facility - General Level 1	9
HCF_DOH_L1_005	Health Care Facility - General Level 1	9
HCF_DOH_L3_001	Health Care Facility - General Level 3	9
HCF_G_L1_02	Health Care Facility - General Level 1	9
HCF_G_L1_025	Health Care Facility - General Level 1	9
HCF_P_L1_039	Health Care Facility - General Level 1	9
PCF_G_R2_005	Primary Care Facility	9
HCF_G_L1_059	Health Care Facility - General Level 1	9
HCF_P_L1_070	Health Care Facility - General Level 1	9
Support_Clinical_017	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	9
HCF_P_L1_022	Health Care Facility - General Level 1	9
Support_HMO_007	Supporting Services - Finance (Health Maintenance Organization)	8
HCF_P_L2_015	Health Care Facility - General Level 2	8
HCF_G_L1_017	Health Care Facility - General Level 1	8
HCF_G_L1_053	Health Care Facility - General Level 1	8

Support_HMO_001	Supporting Services - Finance (Health Maintenance Organization)	7
HCF_P_L2_022	Health Care Facility - General Level 2	7
HCF_DOH_L3_010	Health Care Facility - General Level 3	7
HCF_P_L2_052	Health Care Facility - General Level 2	7
HCF_P_L3_018	Health Care Facility - General Level 3	7
HCF_P_L2_063	Health Care Facility - General Level 2	7
HCF_P_L3_016	Health Care Facility - General Level 3	7
HCF_P_L2_065	Health Care Facility - General Level 2	6
HCF_P_L1_055	Health Care Facility - General Level 1	6
HCF_P_L3_006	Health Care Facility - General Level 3	6
HCF_G_L2_005	Health Care Facility - General Level 2	6
HCF_P_L1_003	Health Care Facility - General Level 1	6
HCF_G_L1_034	Health Care Facility - General Level 1	6
HCF_P_L2_028	Health Care Facility - General Level 2	5
HCF_G_L1_026	Health Care Facility - General Level 1	5
HCF_G_L1_002	Health Care Facility - General Level 1	5
HCF_G_L1_047	Health Care Facility - General Level 1	4
HCF_G_L2_003	Health Care Facility - General Level 2	3
PCF_G_R6_014	Primary Care Facility	3
HCF_G_L1_039	Health Care Facility - General Level 1	3
HCF_G_L2_004	Health Care Facility - General Level 2	3
PCF_G_R2_001	Primary Care Facility	3

On the average, Supporting Services subsectors dominate the Organizational Performance Index, with the highest percentage obtained by HIMS (Clinical and Documentation Service Providers) and Finance (Health Maintenance Organization), respectively.

Table 95

Average Organizational Performance Index Score by Subsector

Subsector	Average Organizational Performance Index Score
Primary Care Facility	5.00
Health Care Facility - General Level 1	8.14
Health Care Facility - General Level 2	5.78
Health Care Facility - General Level 3	7.83

Supporting Services - Finance (Health Maintenance Organization)	10.22
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	10.33

The percentage of employees exhibiting various behavior at work for the Health sector was determined as shown in Table 96. The highest percentage of facilities have 10-50% of their employees who exhibit all the behaviors listed in the tables except for employees who regularly put in more hours than contractually expected into their jobs, as this behavior is exhibited to more than half of the employees according to 42.31% of the facilities.

Additionally, two facilities do not have employees that go above and beyond the call of duty and take up the duties of a colleague without being asked; only one facility does not have employees who regularly put in more hours than contractually expected into their jobs.

Further, the data on Table 48 concerning the employees who are able to perform the job but not beyond, which is the majority of the facilities (59.70%), is consistent with the percentage of facilities whose employees go above and beyond the call of duty (less than 40% for more than half of the facilities' employees).

The relevant technical, cognitive, and soft skills that the employees would need to perform well and beyond their duties may be acquired and developed through capacity-building initiatives/learning and development programs. For most of the facilities, the highest percentage of respondents strongly agree that they provide training whether in-house or conducted by external providers (Table 73). Although for the highest percentage of health facilities/supporting service companies this only accounts to less than 10% of their payroll expenditure.

Table 96

Distribution of the Health Facilities/Supporting Service Companies by Percentage of Employees Exhibiting Various Behavior at Work

Behavior	Percentage of Facilities (%)				
	None	<10	10-50	>50	Total
Go above and beyond the 'call of duty' without being asked	3.85	13.46	46.15	36.54	100.00
Take up the duties of a colleague without being asked	3.85	17.31	44.22	34.62	100.00
Regularly put in more hours than contractually expected into their jobs	1.92	17.31	38.46	42.31	100.00
Make helpful suggestions for improving the operation within	0.00	13.46	51.92	34.62	100.00

4.11 Workforce Matters

This section discusses information pertaining to the percentage of employees in the health facilities and supporting service companies that are TVET graduates and TVET certified, as well as the satisfaction ratings on their work and performance.

Based on Table 97, the subsector with the most number of employees who are TVET graduates is in Health Care Facility - General Level 2. This is consistent with the findings in Tables 14 and 40, which show that this subsector employs the most TechVoc graduates and has the most vacancies in 2021 that require TechVoc graduates as the highest educational attainment; In terms of the number of positions requiring a TechVoc Certificate/National Certificate by policy, this subsector ranks second (Table 54).

On the other hand, 3 out of 6 subsectors have the majority of health facilities/supporting service companies that do not have TVET graduates employees. These are Primary Care Facility, Health Care Facility - General Level 1, and Supporting Services - HIMS (Clinical and Documentation Service Providers). Similarly, there are 3 out of 6 subsectors which have the majority of their health facilities/ supporting service companies that do not have TVET Certified Employees. These also include Primary Care Facility, Supporting Services - HIMS (Clinical and Documentation Service Providers), as well as Supporting Services - Finance (Health HMO).

However, among the aforementioned subsectors, Primary Care Facility and Health Care Facility - General Level 1 fall short in terms of the number of positions that should have been filled by TVET graduates. That is, there are fewer existing employees in these subsectors who meet the requirement than was specified in the policy. In addition to that, these two subsectors have none to few (0.04%) vacancies in 2021 which have this policy requirement.

The results in Table 98 indicate that despite the many jobs/skills requirements in the Health sector being addressable by TVET (Table 39), there is a need to assess the willingness and acceptability of the sector towards employees holding a National Certificate. The few number of TVET graduates and TVET certified employees is consistent with the low number of facilities that require their employees to have a TechVoc Certificate or a National Certificate to be considered as equipped to do the job (Table 54).

Table 97

Distribution of TVET Graduate Employees and TVET-Certified Employees by Subsector

Subsector	Percentage of the Existing Employees (%)					
	None	<10	10-50	>50	Not Applicable %	Total
TVET Graduate Employees						
Primary Care Facility	100.00	0.00	0.00	0.00	0.00	100.00
Health Care Facility - General Level 1	59.09	27.27	9.09	4.55	0.00	100.00
Health Care Facility - General Level 2	11.11	22.22	66.67	0.00	0.00	100.00
Health Care Facility - General Level 3	50.00	50.00	0.00	0.00	0.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	44.44	55.56	0.00	0.00	0.00	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	66.67	33.33	0.00	0.00	0.00	100.00
TVET Certified Employees						
Primary Care Facility	100.00	0.00	0.00	0.00	0.00	100.00
Health Care Facility - General Level 1	40.91	45.45	9.09	0.00	4.55	100.00
Health Care Facility - General Level 2	22.22	44.45	33.33	0.00	0.00	100.00
Health Care Facility - General Level 3	33.33	66.67	0.00	0.00	0.00	100.00
Supporting Services - Finance (Health Maintenance Organization)	55.56	44.44	0.00	0.00	0.00	100.00
Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)	66.67	33.33	0.00	0.00	0.00	100.00

In general, 50% of the health facilities/ supporting service companies do not have TVET graduate employees, while 46.15% do not have TVET certified employees. Those who have hired TVET graduates and TVET certified employees are satisfied with their work and performance (Table 98). Among the participating facilities that have employees who are TVET graduates and certified, 88% and 92.85% respectively, have given a satisfactory rating.

Table 98

Distribution of Health Facilities/Supporting Service Companies with TVET-Graduate Employees by Satisfaction Rating on Employees' Work and Performance

TVET Workforce	Satisfaction Rating						
	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Not Applicable	Total (%)
TVET Graduate (%)	0.00	0.00	6.00	38.00	6.00	50.00	100.00
TVET Certified (%)	0.00	0.00	3.85	42.31	7.69	46.15	100.00

CHAPTER 5
CONCLUSION AND RECOMMENDATIONS

The survey collected data on various topics ranging from facility-specific information (employee demographics, performance, competencies, and skills gaps of existing employees, and satisfaction on TVET graduate and certified employees) to industry-wide information (jobs and skills projections, emerging skills, and green jobs), among others. All these collected data and information are critical inputs to the SNA study.

In summary, the participating facilities of the Health sector have a relatively young workforce; the highest percentage of employees are health management and support personnel, work as full-time permanent employees, and the majority are college graduates. Additionally, the majority of healthcare facilities/supporting service companies are privately owned. In terms of sex distribution, the results are consistent with the analysis of WHO in 2019 that women are well-represented in the health and social sector. Among all the subsectors, the majority of employees in Primary Care Facilities are women.

Although some facilities experienced either no change or a decrease in their employee size from 2020 to 2021, the majority still reported an increase in their employees, which may be attributable to the high demand for healthcare workers due to the COVID-19 pandemic. This increase is expected to continue for the year 2022.

Several jobs are projected to be hard to fill in the next five years, with most of the subsectors identifying the jobs under the health and teaching and other professionals category. Some of the facilities noted that hard-to-fill positions usually require licenses or certifications, higher-level education (e.g. college graduate), and higher-level skills.

Some of these hard-to-fill jobs are also considered by the majority of the facilities as addressable by TVET programs, mostly health associate and health management and support personnel. Regardless of the need for a bachelor's degree, the skills requirements of several health-related jobs are determined to be sufficiently addressed by TVET.

By policy, 86.54% of the facilities require a college degree for more than half of their positions, and the majority also indicated that in more than 50% of the existing positions, continuous learning or development activities are required. As such, training and capacity-development initiatives may be considered critical for the Health sector. Relative to this, the conduct of learning and development programs is one of the most common interventions used by the facilities for high-potential employees, together with job reassignments, and promotion and other incentives. Although the expansion of trainee programs and re-training are conducted for underperforming employees, as necessary, reviews of appraisals/performance are regularly performed.

Moreover, the majority of the subsectors are planning to expand in infrastructure development and equipment acquisition, as well as program/course accreditation. Investing in infrastructure and other forms of capital formation is vital in the Health sector, provided that these impact the quality of healthcare services provided.

Further, some of the related responses were coded and combined to generate and correlate various indices. In this study, indices that have a correlation to at least one of the indices are people focus, mutual gains, value add, and organizational performance. The correlations show that the index related to the delivery of high-value, innovative, and competitive products and services will influence how the facilities leverage and utilize their workers' skills and competencies through the conduct of training and provision of various pay and non-pay benefits.

The presence and demand of TVET graduates and TVET certified employees mostly range from less than 10% to 10-50% of the total employees. Nonetheless, the facilities are at least satisfied with the performance of the TVET employees that they have.

5.1 Conclusions and recommendations on the identified issues and policy implication

The anticipation of the skills requirements of the industry is crucial in the development of policies and programs that bridges the gaps between training and employment. For the health sector, skills anticipation will be valuable baseline information in the reassessment of the health workforce and the determination of the appropriate interventions in education and training.

With the ever-changing demands due to economical, environmental, and technological changes, to name a few, it is critical for the industry, the government, and the academe to review its existing programs and regulations. Likewise, develop new mechanisms and programs necessary to address the skills and competencies demanded for a future-ready workforce.

Following are specific recommendations to the industry, TESDA, and other relevant government agencies.

1. Review of the trainee entry requirements vis-a-vis industry requirements and in reference to the guidelines of the relevant government agencies to ensure the recognition and employability of the workers — depending on the workforce characteristics whether existing workers, new entrants, or career shifters. Thus, the need to establish a national framework for the upskilling and reskilling of the health workers including those with higher educational qualification (baccalaureate degrees and above).
    a. In the analysis of the occupations that are hard-to-fill in the next five (5) years, it was observed that most facilities require college-level education. For the majority of the existing occupations in the participating facilities, the observation is consistent with the said educational requirements for the new entrants.
    b. However, although majority of the positions, for most of the participating facilities require a college degree to do the job, a TechVoc or National Certificate is also considered as a requirement to 10% to 10-50% of the positions.
    c. Some of the hard to fill occupation that may require higher level education is also considered as TVET addressable including 2D Echocardiography

Technician, Nursing Attendant/Assistant, Programmer, and Medical Coding and Billing.

d. Even Human Resource Officer, Mental Health Counselor, Dialysis Nurse, Professional Nurse, and Specialized Nurse are still considered to have requirements that may be addressed by TVET according to 33%-47% of the participating facilities.
e. A general observation is that for the health industry, many of the workers, even college graduates are going back to TVET as part of their upskilling and reskilling.
f. Thus, as the nature and characteristics of the TVET learners are changing as evidenced by the results of the recent SETG and consistent with the results of this SNA-WSS Survey, the following areas of concern and recommendations are identified for possible exploration:

Areas of Concern	Recommendation
Entry requirements	● Review the trainee entry requirements of the TVET programs vis-a-vis the industry requirement to ensure the employability of the graduates.
Perceived lack of practical and technical skills of some graduates needed to be employable	● Implementation of microcredential programs (nano-degrees, badges, or stackable micro-degrees referring to short courses recognized by the industry ● Focus on developing higher level programs based on existing DOH staffing patterns and industry demand to ensure learning progression and career pathways. ● Establish a framework for the upskilling and reskilling of the health workers with higher educational qualification (baccalaureate degrees and above)
Occupations that require baccalaureate degrees	● TESDA may endorse to the Commission on Higher Education the occupations/qualifications for necessary interventions (e.g. curriculum review of health-related courses)
Occupations under TVET	● Shall be evaluated to recommend appropriate programs to be developed

2. As skills utilization in the workplace is drawn from the presumption that skilled talent is available, the academe, private sector, and educational institutions like TESDA, may extend assistance to the industry for the conduct of learning and development programs (i.e upskilling and reskilling programs) through scholarship provisions. A strong collaboration with the established industry associations for the conduct of these upskilling and reskilling program, including the establishment of an Industry TVET Board, will be critical for the operationalization of developing skilled talent.

a. Despite the importance placed by the health sector to lifelong learning, as evidence by the distribution of positions that require continuous learning and development activities, only less than 10% of the payroll expenditure was allocated by the participating facilities to most of their learning and development programs.
b. It may be recalled that for the reasons concerning the underperforming employees, the respondents commonly cited reasons that may be addressed through learning and development initiatives.
c. “Measuring employee engagement is based on meaningful work, supportive management, growth opportunity, and leadership trust (Truss et al., 2013)”; the analysis of the most common reasons of resignation will point to professional career growth, which may partly be addressed by providing learning opportunities and focusing on skills utilization.
d. As part of industry support, partnerships will be critical in ensuring that relevant upskilling and reskilling programs are available from new entrants to existing workers. The availability of different career pathways as well the mechanisms in place to ensure the development and growth of the workforce will be beneficial in continuously attracting, engaging, and retaining health care workers.
e. TESDA may utilize the presence and strength of the established industry associations and explore the development of an Industry TVET Board (ITB) for the Health sector. The ITB can help TESDA in signaling the industry needs and requirements and identify the priority programs that shall be developed as part of upskilling and reskilling.

3. Develop new Competency Standards or Training Regulations to fit the technical requirements of the Health Sector in consideration of critical factors namely qualification guidelines on naming convention, pathways and career progression, and the Department of Health’s staffing requirements.
    a. One of the observed characteristics of the industry is the frequent mention of the industry practitioners regarding the considerations for the proper naming conventions. For instance, in the proposed Philippine Physical Therapy Law, a physical therapist is defined as a person who holds a valid Certificate of Registration and Professional Identification Card. Thus, a Bachelor Degree will be minimum requirement to be a Physical Therapist.
    b. Considering this, pathways and career progression, in reference to the Philippine Credit Transfer System is also a critical consideration in developing new TVET programs to determine which would fall under TVET.
    c. Moreover, the DOH maintains that specifically for the government owned health facilities, the approved staffing requirements is to be followed.
    d. From the list of the jobs/skills requirements for the health sector found in Annex A, priority requirements had been identified in reference to the three main indicators (addressable by TVET program, urgency, demand) evaluated vis-a-vis the four criteria for prioritization (National Implication, Employment Generation, Industry Requirements, and Standardization and Certification).
    e. Table 99 presents the summary of the priority requirements, which shall be the basis for the qualifications recommended for Competency Standards and

Training Regulations development for the consideration of the TESDA Planning Office and the Qualifications and Standards Office.

Table 99

Summary of the Priority Requirements for the Health Sector for Program Development

Occupational Type	For Training Regulations Development		
	Priority 1	**Priority 2**	**Remarks**
Health and Teaching Professionals	Respiratory-Therapy Services		TESDA Board Resolution No. 2010-20
	Practical Nursing		TESDA Board Resolution No. 2007-011
Health Associate Professionals		Medical X-ray Equipment Operation	TESDA Board Resolution No. 2007-011
Occupational Type	**For Competency Standards Development**		
	Priority 1	**Priority 2**	
Health Associate Professionals	Safety Officer	Mechanical Ventilator Technician	
	Emergency Medical Technician - Paramedic	Ward Assistant	
	2D Echocardiography Technician	Laboratory Aide	
		Health/Sanitary Inspector	
		Clinic Assistant	
		Ambulance Quality Assurance	
Personal Service and Personal Care Workers		Birth Assistant	
Health Management and Support Personnel	Swabber	Call Taker	
	MIS Technical Support	Barangay Nutrition Action Officer	
	IT Supervisor		
	IT Assistant		

	Supervisor	

f. In terms of the prioritized qualifications pending for the development of the Training Regulation, the list of the requirements will be forwarded to the industry and the DOH to determine the requirements' demand and relevance, and whether there is still a need to develop a TVET Program. The following requirements will be validated: (1) Dialysis Machine Operation; (2) Ultrasound Machine Operation; (3) Nuclear Medical Machine Operation; (4) Medical Scanning Equipment Operation; and (5) Cobalt Machine Equipment Operation.

g. In terms of emerging skills, the list of priorities anticipated to be more demanded in the next five years per subsector and industry development may be seen in Annex C. These emerging skills may be reviewed whether there is a need to develop a standalone program or may be embedded as part of common competencies, specifically those emerging skills that cut across all the subsectors in the health industry. In summary, the following are the emerging skills identified as priorities in at least four out of six subsectors

- Four subsectors:
  - Data Science and Analytics
  - Data Management and Governance
  - Artificial Intelligence and Machine Learning
  - Social Science Research
  - Digital Marketing and Strategy
  - Clinical Research
  - Psychological First Aid

- Five subsectors:
  - Environmental and Occupational Health and Hygiene
  - Information Security
  - Remote Patient Monitoring
  - Health Surveillance and Monitoring
  - Complex Information Processing and Interpretation
  - Technology Use for Disease Prevention and Control

- Six subsectors:
  - Health Information System Navigation and Management
  - Electronic Medical Records Management
  - Telemedicine/Telehealth

h. The identified priority jobs/skills requirements shall also serve as basis of the Regional Operations Management Office for scholarship allocation in the health sector at the national level.

4. Expand the needed health-related infrastructure including modern technologies and equipment particularly as the majority of the subsectors are reporting its move towards acquiring latest machines and equipment. Moreover, training, assessment

and certification infrastructure shall also be strengthened such as the review and updating of the existing TVET programs in view of new industry developments, review of implementation, capacity-building for trainers and competency assessors to name some, to ensure the readiness of the program graduates in the health sector.

a. In reference to the priority occupations/skills requirements that already have corresponding TVET programs, Table 100 presents the number of enrolled, graduate, assessed, and certified TVET learners while Table 101 presents the number of competency assessors, assessment centers, registered programs, and TVET trainers.

Table 100

Enrolled, Graduates, Assessed, and Certified for the Priority Skills Requirements in the Health Sector with Corresponding TVET Programs (2022)

Occupation/Skills Requirements	Corresponding TVET Program	Enrolled	Graduated	Assessed	Certified
Hospital Attendant	Health Care Services NC II	2,145	2,369	2,496	2,436
Nursing Attendant/Assistant					
Biomedical/Medical Equipment Technician	Biomedical Equipment Services NC II	72	48	331	326
Graphic Artist	Visual Graphic Design NC III	1351	1579	592	447
Programmer	Programming (.Net Technology) NC III	0	0	0	0
	Programming (Java) NC III	1477	1675	0	0
	Programming (Oracle Database) NC III	0	0	0	0

Source. TESDA Information and Communications Technology Office

Table 101

Number of Registered Programs, Assessment Centers, Competency Assessors, and NTTC Holders for the Priority Skills Requirements in the Health Sector with Corresponding TVET Programs (1st Quarter, 2023)

Occupation/Skills Requirements	Corresponding TVET Program	Registered Programs	Assessment Centers	Competency Assessors	NTTC Holders

Hospital Attendant	Health Care Services NC II	190	78	160	425
Nursing Attendant/Assistant					
Biomedical/Medical Equipment Technician	Biomedical Equipment Services NC II	4	3	8	14
Graphic Artist	Visual Graphic Design NC III	86	66	44	172
Programmer	Programming (.Net Technology) NC III	0	0	0	0
	Programming (Java) NC III	21	0	0	22
	Programming (Oracle Database) NC III	0	0	0	0

Source. TESDA Certification Office

b. All of the corresponding Training Regulations in Table 100, except for Visual Graphic Design NC II and Programming (Java) NC III, are recommended for TR Review based on the list of qualifications for the prioritization of program for development of TR/CS and Review provided to the Qualifications and Standards Office.
c. For jobs/skills requirements identified for review/updating, the list of the priority emerging skills resulting from industry developments, digital skills, and green competencies, among others should be considered to ensure the readiness of the health sector.
d. Concerning those that will be evaluated as included in the review of implementation, measures should be done to determine what and where the gaps are and the appropriate TVET infrastructure needed to be strengthened/developed, or whether capacity-building programs shall be implemented. The other related qualifications may also be considered in view of the competencies that may be adopted. For instance, considering the inclusion of handling medical substances and medical wastes even in the competencies under the housekeeping Training Regulations.
e. Medical Coding and Claims Processing NC III had been promulgated in 2015 and there is still a demand for medical coding and billing professionals. Yet, there are no registered programs up to date. As such, further development of these capacities may be required to cope with the demands of the sector.
f. Likewise, the trainers and competency assessors must have the necessary knowledge and skills that can keep up with industry practices. TESDA should strengthen its capacity for operationalizing the sector's emerging and green skills requirements.

g. For the Department of Health and the private sector, investments in modern infrastructure such as technologies and equipment is recommended to be considered as a priority. Specifically, provided that compared to overseas, many of the facilities are far behind in terms of available technology. About 42% of government-owned facilities, for example, have core equipment that is more than five years behind.
h. With the majority of the subsectors reporting that they will move towards acquiring latest machines and equipment, incentives are encouraged to be provided for private facilities; whereas, additional budget is recommended to be allocated for the continuous modernization of government-owned facilities.

5. Review the identified specialized and advanced technical skills, socio-emotional skills, soft skills, as well as digital skills in view of the embedded competencies in the existing TRs, implementation and training delivery, and new program development. With the global pandemic shifting many of the processes online, strengthening the health care worker's digital skills is necessary to ensure the readiness of the workforce.
    a. Basic digital skills that is transferrable in different occupations within the health sector may be explored in the development of a standalone program. On the other hand, socio-emotional and soft skills already embedded in the existing TVET programs shall be reviewed vis-a-vis program delivery.
    b. Based on the initial mapping, the following soft/essential skills are included in the TESDA's Competency Standards for Basic Competencies (integrated with 21st century skills)
        i. Adaptability
        ii. Complex Problem Solving/Problem Solving
        iii. Cooperation and Coordination
        iv. Critical Thinking
        v. Custimer Service
        vi. Dedication, Determination, Diligence, and Commitment
        vii. Flexibility
        viii. Judgment and Decision Making
        ix. Leadership

        Most of these requirements fall under working with others (i.e work in a team environment and work in a diverse environment). If based on the Qualifications and Standards Office's review the following requirements appear to be sufficient in the existing standards, the challenge is in ensuring that the programs are properly delivered and implemented to help address the industry's concerns regarding their employees who are unable to do their jobs.

    c. The National Institute for Technical Education and Skills Development (NITESD) is recommended to strengthen the monitoring in terms of the assessment of training delivery. Trainers training may also be conducted by the National TVET Trainers Academy focusing on these identified competencies to ensure that trainers are equipped with the necessary

technical and digital skills. Further, the inclusion of the soft and socio-emotional skills is recommended to be considered in the assessment of the graduates.

d. On the other hand, the other skills requirements that are not yet included in the existing standards shall be reviewed by the Qualifications and Standards Office to assess whether these may be embedded to the basic and common competencies of Health-related TRs or be considered for the development of a separate program.
e. For the Planning Office, the Annex B may serve as reference for the updating of the Selected Training Programs to be considered for program development and implementation of industry partners as well as allocation of scholarship through the Tulong Trabaho Scholarship Program.
f. In Annex B, socio-emotional skills and soft skills listed were identified by the participating facilities when asked about the needs of employees that are unable to perform their job. It may be presumed from the results that to at least perform the given duties, such skills are needed on top of possessing technical skills. Additionally, Annex B also contains specialized and advanced technical skills, and digital skills which were identified as critical in the performance of tasks and duties of the health workers.
g. For the majority of the respondents, the lack of socio-emotional skills and language skills are among the most common reasons cited for the existence of underperforming employees.
h. The relevant technical, cognitive, and other essential skills needed for the employees to perform well and beyond their duties may be acquired and developed through learning and development programs, as part of the upskilling/reskilling initiatives.
i. Regardless of the type of ownership, the majority of the health facilities/supporting service companies are prepared for emerging skills, including digital skills. However, based also on the results, digital skills need to be improved especially for underperforming employees. A government-owned hospital explained that older employees are prone to a lack of digital and specialized technical skills; thus, continuous training will be necessary.
j. Listed in Annex C are the emerging skills associated with industry development (fourth industrial revolution and the new normal) that are anticipated to be more demanded in the next five years.
k. Additionally, some of the emerging skills identified during the health-related industry consultations (i.e. Public Nutrition, Emergency Medical Services, and Mental Health) were further reiterated in this study including the use of cloud environments and other online/digital communication tools, computer literacy, psychological first aid, and basic counseling.
l. In the changing healthcare industry landscape and the world of work, keeping up with the industry developments and the associated emerging skills would be more advantageous in building and sustaining competitive advantage.

6. Popularize and promote green occupations, and prepare the workforce with needed green competencies in compliance with the Republic Act No. 10771 or the Philippine Green Jobs Act of 2016. With the new DOH direction towards greening the sector, in

view of their published Green Manual, it is critical to ensure that green competencies are embedded in the Training Regulations and Competency Standards, conduct intensive human resource training and capability building, and meeting the emerging requirements.

a. The Green Jobs Act, Section 2: Declaration of Policy stated the identification of the skills requirements, development of training programs, and the training and certification of workers in green occupations of industries transitioning towards green economy. The awareness of the facilities in green jobs and competencies is a critical component in the determination of the immediate and emerging requirements in the green economy.
b. For TESDA, the Implementing Guidelines for Greening the TVET System should be considered (TESDA Circular 058, s. 2018). Part of this is the move of the Agency to greening its Competency Standards and Training Regulations by embedding green competencies. Particularly, the Qualifications and Standards Office shall refer to the emerging green skills identified in this study for possible embedment (Annex B). Additionally, as part of greening TVET, TESDA's Green Technology Center (GTC) may aid to meet the emerging green demand of industry personnel.
c. Intensive human resource training and capability building may be directed towards facilities that are already aware of the emerging skills and green jobs as well as those who have already undertaken steps to address such needs.
a. Only 11.11% to 33.33% of the health facilities/supporting service companies are aware of the emerging skills resulting from green jobs, and for those who have already created/changed jobs in response to greening the health sector, many are related to contributing to minimizing waste and pollution. For example, the common provisions across several subsectors are in sewerage plant and waste management (e.g. segregation, recycling, disposal of waste and other materials).
b. The DOH has a Green Manual that encourages hospitals and health facilities to move towards green construction in the expansion, repair, and renovation of the facilities. This may signal the demand and expansion of green jobs in the future.
c. Consequently, the Green Manual mentioned of the need to provide training and research on green and safe health facilities which will lead to further demand on training for new technology in sustainable operation and maintenance, among others. The management of health care wastes was specifically mentioned in the Manual, noting that it is the responsibility of all health care workers and staff, not only those who are involved in waste collection. In Table 70, 61.54% of the participating facilities signified the need to enhance their skills regarding hospital waste management, including proper segregation, disposal, recycling, and reuse.
d. There is a great opportunity for government agencies such as TESDA and DOLE to develop programs, projects, and initiatives that will support green jobs. Relative to this, it is critical to ensure that green competencies are embedded in the Training Regulations and Competency Standards, specifically with the new DOH direction towards greening the sector.
e. Moreover, in response to the Philippine Green Jobs Act of 2016, particularly on financing, only some of the health facilities/supporting service companies

(0% to 37.50%) across the different subsectors have made use of the tax incentives or import duties exemption programs, with Health Care Facility - General Level 2 getting the highest percentage. As such, this study also follows the recommendations made by Abrigo et. al (2019) stating the exploration of alternative financing schemes. Further, the reasons and factors hindering companies and facilities from investing in greener technologies and generating green jobs shall be explored.

7. Push for the salary standardization, as a form of financial incentive, to address the shortage in the talent supply and as a means to explore ways on increasing employee engagement for the workers to consider longer commitments.
    a. The pay scale for health-related jobs, especially for specialized and advanced technical skills shall be made more competitive and commensurate with the tasks/functions expected from the job.
    b. As shared by all subsectors, the majority of the reasons for the employee's resignation are related to pursuing greener pastures for career growth and higher compensation. Most of the employees either look for jobs within the sector that offer higher salaries or change careers.
    c. The increase in salary for the private healthcare workers may serve as means to address the shortage in the talent supply. Still, although government-owned hospitals earn more than those in privately-owned facilities, it is still not an incentive for some workers to stay in the country.
    d. Relative to the reasons for fast turnover, the provision of pay and non-pay benefits may be an added factor to entice workers to commit, perform well, and engage in the facility.
    e. The industry may explore ways on how to increase employee engagement for them to consider longer commitments. As long term commitment may also be linked with the workforce's age, this may also be a consideration when coming up with programs and targeting groups/beneficiaries.

8. Pursue the dialogue between TESDA, the industry, and the relevant government agencies regarding the acceptability and recognition of TVET graduate and TVET-certified employees. To facilitate this, the establishment of an Industry TVET Board is recommended to foster collaboration which will cover the identification of skills requirements, review and development of TVET programs, and implementation of the programs aligned with the industry needs.
    a. Considering this, the following are the specific recommendations to the Department of Health and the Industry:
        i. Review of the occupations and establish a clearer picture of where TVET can come in to supplement the needs of the workforce in the health industry
        ii. Support the implementation of the programs determined to be addressable by TVET
        iii. Establish a clear reference and framework of the progression pattern in collaboration with the DOH, educational agencies, and recognized by the industry associations
    b. In the supporting service subsectors, the respondents made it clear that most of the available opportunities are for college graduates. Generally, among

subsectors, there are only a few employees who have undergone technical vocational education. Even for the vacancies, there are only a few that requires techvoc undergrad/grad.

c. Moreover, for 23.08% of the facilities (12 of 52 facilities), a techvoc certificate or a National Certificate is not required for the existing positions.
d. Contrary to this, the survey also revealed that many of the jobs/skills requirements in the Health sector can be addressed by TVET programs.
e. Relative to this, TESDA shall continuously evaluate the possible gaps in response to the industry requirements and the ability of the TVET programs to address these. The results of Table 98 indicate that despite the many jobs/skills requirements in the health sector being addressable by TVET, there is a need to assess the willingness and acceptability of the health sector towards employees holding a National Certificate.
f. For instance, the Planning Office, through its conducted industry consultations and research initiatives, may determine if TVET certifications are recognized by the health sector and considered as needed to prepare workers for the job. The Department of Health shall also continuously be part of the development and review of the health-related Training Regulations to ensure alignment with the said Agency.
g. Additionally, the Partnership and Linkages Office may facilitate collaboration, communication, and partnership with the health industry to ensure that TVET graduates and TVET-certified employees are recognized. The establishment of an Industry Board that will help signal the skills priorities in the sector shall be explored.
h. The engagement efforts with industry shall be intensified to further boost the implementation of the enterprise-based training. According to the Partnership and Linkages Office, out of the 1,831 partnerships forged in the first quarter of 2022, 899 (49.01%) are implementors of Enterprise-Based Training (EBT).
i. In the cost-benefit analysis study, EBT is considered as a training modality with graduates having a “higher probability of being employed”. The study also revealed that on the side of the industry, implementing EBT is generally beneficial when compared to the incurred costs, especially if companies would need to hire workers due to skills gaps.
j. EBT also helps increase the employability of the TVET graduates and ensures the recognition of the program graduates.
k. The programs of government agencies mandated to provide training such as TESDA and the Department of Health may need to be further promoted to its target market/beneficiaries. Particularly, this is because the lack of access to training, interestingly, received the highest percentage at 33.33% for DOH hospitals.
l. Moreover, the implementation of the recognition of TVET programs in the health sector, in view of the Philippine Credit Transfer System for the higher education should be closely monitored. For instance, in the Health Information Management Service, many of the occupations require a Bachelor’s Degree; however, the industry also signify the need for TVET programs to further enhance their talent.

9. For the industry and relevant government agencies like the DOH, it is recommended to strengthen and further the accessibility of quality health care as almost half of the privately-owned facilities agree that the competitive success of their service is dependent on price in the vast majority of cases. This may reflect that costs/affordability is a critical factor for an individual to access healthcare services.

5.2 Recommendations on the Conduct of the Survey

1. The commitment and endorsement of the associations and the Department of Health have been crucial in producing a comprehensive list of health facilities and supporting service companies that became the basis for the identification of the respondents. A focal person from the associations was also determined to facilitate the concerns of the research team. It was found that the more involved the associations are in respect to engaging and following up with their member companies, the higher the response rate from that association. As such, it is recommended to maximize the engagement with the associations in the data-gathering process.

   Further, presented below is the recommended communication and information flow to better facilitate the process:

   Figure 13
   Communication and Information Flow for SNA-WSS Concerns

   As shown in Figure 13, the WSS Survey focal/personnel will direct the concerns that need immediate action/assistance (e.g. unresponsiveness, meeting schedules) to the assigned contact person from the industry association. The assigned contact person from the association will then be responsible for relaying the information to the survey respondent. The association is encouraged to directly endorse TESDA to the survey respondent for easier and smoother communication moving forward. To better facilitate the survey, urgent matters will be prioritized; others may form part of a weekly or bi-weekly update in the preferred communication channel of the associations. However, it is important that this system be established at the early stages/phases of the survey process.

2. Since the survey was conducted at the time that the cases of COVID-19 are still high (still limited vaccinations) in conjunction with ongoing projects and commitments, and health facilities' licenses renewals, some facilities noted that there is not enough time to answer the survey, provided the duration of the survey operation. The survey was implemented for only nine (9) weeks; as such considering other factors such as

budget and personnel availability, a longer time for the survey implementation may be considered in the planning stage to accommodate more responses.

3. Besides the time-related constraints, some facilities noted that although they are interested in participating, there are other factors that prevent them from accomplishing the survey such as manpower shortages due to the pandemic, surge of COVID-19 patients/cases, unavailability of some data (e.g. other government hospitals have a centralized HR system), and connectivity issues. Considering these factors and constraints that will cause survey participation to decline, replacements should be considered even at the survey conception.

4. Other methodologies, other than the one-on-one researcher-administered survey via Zoom interview or online self-administered survey, shall be explored to check other ways how to increase survey responses. This includes the use of offline forms, especially for those who have difficulty accessing the internet. Through the scoping meeting, the appropriate survey methodology shall be determined.

5. Since the 2021 SNA-WSS Survey is the first to be conducted entirely by TESDA, it is recommended that to better facilitate the conduct of the study, a templated version of all the documents and processes used, from questionnaire development to report writing, shall be developed and enhanced based on the experiences from the Logistics and Health sectors. These templates/user guides shall serve as baseline documents to be used in future SNA-WSS surveys. The development of an operations manual for WSS, whether as a separate document or integrated into the SNA manual, is recommended for development in view of the knowledge management process and the learning-by-doing approach. Part of the development of the procedural manual is the re-evaluation of the processes and systems regarding the conduct of the survey.

6. For the other survey rounds, it is recommended to consider adding questions related to the overeducation and undereducation and explore the other types of jobs-skills mismatches as part of enhancing the survey instrument; this is in reference to the observations and recommendations made in this study.

7. Provided that as of 2021 there are already four (4) sectors covered for the SNA-WSS survey, it is recommended that a monitoring and evaluation system for skills needs anticipation to be developed. In a Southeast Asia Skills Forum, the importance of having a feedback mechanism in place to know the success of SNA is highlighted.

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ANNEX A

Projected Distribution of the Skills Supply, Hard-to-Fill Skills, and Skills Addressable by TVET Programs for the Next 5 years

Occupational Type	Areas of Skills/Jobs	Skills Supply				Hard-to-fill		Addressable by TVET Programs	
		Shortage	No Change	Surplus	N/A	Yes	No	Yes	No
Professional Service Managers and Supervisors	Nurse Manager	18.75	56.25	0.00	25.00	17	15	28.13	71.87
	Unit Supervisor/Team Lead	16.00	60.00	0.00	24.00	13	20	27.27	72.73
	Chief of Hospital	4.44	75.56	0.00	20.00	15	17	22.58	77.42
	Chief of Medical Professional Staff	4.55	54.55	0.00	40.90	10	12	20.83	79.17
	Medical Center Chief	2.27	40.91	0.00	56.82	11	7	15.79	84.21
	Aged Care/Nursing Home Director	4.66	18.60	0.00	76.74	5	5	9.09	90.91
	Assistant Clinical Director	2.27	38.64	0.00	59.09	7	9	6.25	93.75
	Clinical Director	4.55	43.18	0.00	52.27	7	11	5.56	94.44
Health and Teaching Professionals	Nutrition Action Officer	2.33	20.93	0.00	76.74	4	4	33.33	66.67
	Nutrition Program Coordinator	2.33	20.93	0.00	76.74	3	4	25.00	75.00
	Training Assistant	4.08	26.53	2.04	67.35	3	12	12.50	87.5
	Speech Therapist	4.65	6.98	0.00	88.37	2	2	20.00	80
	Training Specialist	5.88	39.22	0.00	54.90	9	12	18.18	81.82
	Psychologist	14.89	27.66	0.00	57.45	11	7	12.50	87.5
	Graphic Artists	13.33	11.11	0.00	75.56	7	2	60.00	40.00
	Occupational Therapist	13.64	13.64	0.00	72.72	7	3	18.18	81.82

	Psychometrician	13.04	26.09	0.00	60.87	8	7	6.67	93.33
	Respiratory Therapist	13.04	19.57	0.00	67.39	7	6	15.38	84.62
	Nutritionist-Dietitian	12.50	68.75	0.00	18.75	12	20	33.33	66.67
	Dermatologist	10.87	32.61	0.00	56.52	9	9	0.00	100.00
	Nurse Educator	10.87	26.09	0.00	63.04	10	5	27.78	72.22
	Physical Therapist	10.87	32.61	0.00	56.52	8	8	26.67	73.33
	Dentist	8.33	58.34	0.00	33.33	10	19	11.11	88.89
	Audiometrician	6.98	20.93	0.00	72.09	5	5	18.18	81.82
	Health Physicist	6.82	11.36	2.27	79.55	7	0	25.00	75.00
	Optician	6.52	28.26	0.00	65.22	6	8	7.14	92.86
	Health Education and Promotion Officer	6.53	41.30	0.00	52.17	5	13	36.84	63.16
	Clinical Instructor	6.67	17.78	0.00	75.55	6	4	20.00	80.00
	Optometrist	6.67	26.67	0.00	66.66	7	6	7.69	92.31
	Pediatrician	16.67	54.17	2.08	27.08	14	16	17.86	82.14
	Public Health Nurse	17.39	19.57	0.00	63.04	10	4	33.33	66.67
	Surgeon	18.75	54.17	2.08	25.00	13	18	13.79	86.21
	Gynecologist	18.76	52.08	2.08	27.08	15	16	17.24	82.76
	Primary Care Physician	20.83	47.92	0.00	31.25	15	15	17.86	82.14
	Pharmacist	25.00	60.42	2.08	12.50	14	20	29.41	70.59
	Medical Doctor	26.00	42.00	2.00	30.00	18	12	24.14	75.86
	Medical Specialist	29.79	42.55	2.13	25.53	19	14	25.81	74.19
	Dialysis Nurse	31.11	13.33	0.00	55.56	15	2	35.29	64.71
	Medical Officer	31.91	38.30	4.26	25.53	19	13	26.67	73.33
	Specialized Nurse	35.42	16.66	0.00	47.92	18	3	33.33	66.67

	Medical Technologist	36.73	48.98	0.00	14.29	21	13	32.35	67.65
	Professional Nurse	54.00	24.00	4.00	18.00	32	5	33.33	66.67
	Online Course Developers	8.70	10.87	0.00	80.43	5	3	44.44	55.56
	Supervising/Professional Midwife	8.89	57.78	0.00	33.33	11	13	41.67	58.33
Health Associate Professionals	Dental Equipment Laboratory Technician	0.00	18.60	0.00	81.40	1	5	33.33	66.67
	Dental Technologist	0.00	18.18	0.00	81.82	0	5	42.86	57.14
	Dermatology Assistant	0.00	11.63	0.00	88.37	0	3	20.00	80.00
	Dietetic Technician	0.00	13.95	0.00	86.05	1	4	40.00	60.00
	Dispatch Officer	0.00	18.60	0.00	81.40	0	8	42.86	57.14
	Health/Sanitary Inspector	0.00	44.19	0.00	55.81	2	11	53.85	46.15
	Nutritionist Inventory Supervisor	0.00	20.93	0.00	79.07	1	6	37.50	62.5
	Orthotic Technician	0.00	11.63	0.00	88.37	0	4	50.00	50.00
	Prosthetic Technician	0.00	9.30	0.00	90.70	0	4	50.00	50.00
	Therapy Assistant	0.00	16.28	0.00	83.72	0	5	33.33	66.67
	Safety Officer	2.13	57.44	2.13	38.30	7	17	56.52	43.48
	Physical Therapy Technician	2.27	27.27	0.00	70.46	2	8	45.45	54.55
	Sanitation and Disinfection Officer	2.27	34.09	0.00	63.64	0	12	50.00	50.00
	Assistant Midwife	2.33	18.60	0.00	79.07	0	5	33.33	66.67
	Mechanical Ventilator Technician	2.33	16.27	0.00	81.40	3	5	75.00	25.00
	Wheelchair Technician	2.33	9.30	0.00	88.37	0	6	66.67	33.33
	Biomedical/Medical Equipment Technician	6.67	33.33	0.00	60.00	9	7	56.25	43.75
	Dental Assistant	6.67	33.33	0.00	60.00	0	13	50.00	50.00

	Ward Assistant	6.67	35.56	0.00	57.77	4	11	58.82	41.18
	Ambulance Driver	8.70	69.56	0.00	21.74	10	18	82.14	17.86
	Laboratory Aide	8.70	56.52	0.00	34.78	2	20	50.00	50.00
	Traditional Midwife	6.82	27.27	0.00	65.91	4	7	41.67	58.33
	Ambulance Care Assistant	6.98	20.93	0.00	72.09	2	7	77.78	22.22
	Ambulance Quality Assurance	6.98	18.60	0.00	74.42	3	6	62.50	37.5
	Pharmacy Technician/Pharmacy Assistant	8.51	44.68	0.00	46.81	7	12	63.16	36.84
	Clinic Assistant	8.89	26.67	0.00	64.44	3	9	50.00	50.00
	Medical X-ray Technician	10.42	52.08	0.00	37.50	7	17	52.00	48.00
	2D Echocardiography Technician	11.11	33.33	0.00	55.56	10	8	58.82	41.18
	Emergency Medical Technician - Advance	11.11	13.33	0.00	75.56	5	3	33.33	66.67
	Emergency Medical Technician - Paramedic	13.33	17.78	0.00	68.89	7	4	58.33	41.67
	Hospital Attendant	15.56	35.56	0.00	48.88	4	15	68.42	31.58
	Radiologic Technologist/Radiology Technician	20.41	59.18	0.00	20.41	14	17	35.48	64.52
	Medical Laboratory Technician	22.92	37.50	2.08	37.50	9	13	43.48	56.52
	Nursing Attendant/Assistant	31.91	51.07	0.00	17.02	11	21	57.58	42.42
	Staff Nurse	55.10	28.57	0.00	16.33	29	6	37.14	62.86
Personal Service and Personal Care Workers	Birth Assistant	0.00	16.28	0.00	83.72	2	3	60.00	40.00
	Logistics Manager	0.00	34.09	0.00	65.91	2	10	33.33	66.67
	Seamstress	0.00	31.11	0.00	68.89	2	8	80.00	20.00
	Supply Chain Officers	0.00	46.67	0.00	53.33	3	13	31.25	68.75

	Cook	2.17	69.57	0.00	28.26	3	24	67.86	32.14
	Food Preparation Assistant	2.17	56.53	2.17	39.13	3	20	69.57	30.43
	Home Health Aides	2.33	6.97	0.00	90.70	1	2	33.33	66.67
	Pharmacist Aide	4.35	50.00	0.00	45.65	4	15	61.11	38.89
	Contact Tracer	4.44	33.33	0.00	62.23	1	11	66.67	33.33
	Warehouseman/Warehouse Aide	4.35	39.13	0.00	56.52	1	17	82.35	17.65
	Dental Aide/Dental Laboratory Aide	4.44	35.56	0.00	60.00	1	12	61.54	38.46
	Caregiver/Home Health Care Nurse	9.09	13.64	0.00	77.27	2	6	62.50	37.5
	Hospital Housekeeper	10.87	58.70	0.00	30.43	3	22	76.92	23.08
Health Management and Support Personnel	Barangay Health Worker	0.00	9.30	0.00	90.70	0	3	33.33	66.67
	Guidance Counselor	0.00	16.28	0.00	83.72	0	6	16.67	83.33
	Marketing Assistant	0.00	48.94	0.00	51.06	4	17	13.64	86.36
	Medical Records Technician	0.00	48.89	0.00	51.11	2	16	64.71	35.29
	Medical Secretary	0.00	44.19	0.00	55.81	2	13	46.67	53.33
	Mental Health Counselor	0.00	15.91	0.00	84.09	0	5	40.00	60.00
	Preventive Health (HIMS)	0.00	20.00	0.00	80.00	2	6	37.50	62.5
	Workforce Analyst	2.13	23.40	0.00	74.47	3	7	33.33	66.67
	Attorney	2.17	34.78	2.17	60.88	8	7	6.67	93.33
	Laundry Worker	2.17	69.57	0.00	28.26	2	25	70.37	29.63
	UM/UR	2.17	15.22	0.00	82.61	2	4	16.67	83.33
	Health Information Management and Bioinformatics	2.22	24.45	2.22	71.11	4	7	45.45	54.55
	Medical Controller	2.27	13.64	0.00	84.09	0	5	33.33	66.67
	Barangay Nutrition Action Officer	2.33	9.30	0.00	88.37	0	4	50.00	50.00

	Barangay Nutrition Scholar	2.33	9.30	0.00	88.37	0	4	50.00	50.00
	Engineering Assistant	2.33	23.25	0.00	74.42	1	9	44.44	55.56
	Administrative Officer	4.00	82.00	0.00	14.00	9	27	32.43	67.57
	Purchasing Staff	4.08	67.35	0.00	28.57	4	27	32.26	67.74
	Business Intelligence & Product Management Officer	4.35	21.74	2.17	71.74	5	6	25.00	75.00
	Social Welfare Officer	4.35	63.04	0.00	32.61	11	14	40.00	60.00
	Patient Support Service Officer/ Associate	4.44	37.78	2.22	55.56	6	10	41.18	58.82
	Remote Healthcare Management	4.45	11.11	2.22	82.22	2	5	28.57	71.43
	Social Welfare Assistant	4.55	27.27	0.00	68.18	1	11	100	0.00
	Social Welfare Managers	4.55	68.18	0.00	27.27	8	19	23.08	76.92
	Dental Laboratory Technician	4.65	16.28	0.00	79.07	0	5	42.86	57.14
	Medical Claims Representative	6.00	58.00	2.00	34.00	9	19	51.85	48.15
	Financial and Management Officer	6.12	53.06	0.00	40.82	8	18	15.38	84.62
	Talent Acquisition and Development Officer	6.12	30.62	2.04	61.22	6	12	22.22	77.78
	Accounts Officer	6.25	54.17	0.00	39.58	9	16	29.63	70.37
	Data Controller	6.25	45.83	0.00	47.92	9	12	40.91	59.09
	Medical Provider and Membership Relations Officer	6.25	35.42	0.00	58.33	6	12	15.79	84.21
	Call Taker	6.38	31.92	0.00	61.70	7	9	62.50	37.5
	Data Encoder	6.38	61.70	0.00	31.92	3	23	61.54	38.46
	Engineer	6.38	36.17	0.00	57.45	7	9	17.65	82.35
	Medical Liaison	6.38	42.55	2.13	48.94	3	16	31.58	68.42

	Human Resource Officer	7.84	62.75	1.96	27.45	10	22	43.75	56.25
	Medical Claims Associate	7.84	45.10	3.92	43.14	7	18	50.00	50.00
	Administrative Assistant	8.16	75.51	0.00	16.33	4	30	42.86	57.14
	In-Patient Coordinator	8.16	40.82	2.04	48.98	8	15	43.48	56.52
	MIS Technical Support	8.51	29.79	2.13	59.57	9	7	66.67	33.33
	Administrative Aide	8.70	54.35	2.17	34.78	2	22	56.00	44.00
	Swabber	9.09	52.27	0.00	38.64	8	12	75.00	25.00
	Medical Coding and Billing	10.20	63.27	2.04	24.49	12	20	63.33	36.67
	Customer Service Representative/Helpdesk	11.76	43.14	0.00	45.10	5	21	40.00	60.00
	Computer Maintenance Technologist	12.77	29.79	0.00	57.44	8	10	64.71	35.29
	IT Assistant Supervisor	12.77	17.02	2.13	68.08	8	6	61.54	38.46
	Actuarial Assistant	14.89	10.64	0.00	74.47	9	1	45.45	54.55
	IT Supervisor	16.00	36.00	2.00	46.00	11	14	52.00	48.00
	Programmer	17.02	27.66	2.13	53.19	12	6	57.89	42.11
	IT Personnel	22.00	46.00	4.00	28.00	14	16	65.52	34.48

ANNEX B

Identified Additional Skills Requirements

Notes:
[a] Skills/Jobs requiring higher education
[b] Other jobs/skills requirements mentioned that are not included in C11

Category	Jobs/Skills
Hard to fill (others) [b]	Senior Clinical Specialist [a] Social Media Manager Certified Public Accountant [a] Financial Analyst [a]
Identified by the facilities to have fast turnover and/or will be difficult to replace within three months upon resignation	Accountants (CPA/Finance) [a] Accounting Clerk Actuarial [a] Administrative Aide Administrative Officer IV [a] Administrative Officer V [a] Allied Health (Rad. Tech, Med. Tech, Pulmo, Occupational Therapist, Physical Therapist, Pharmacist)[a] AR Executive [a] Auditor [a] Call Center Personnel Cardio-Respiratory Therapist [a] Cardiovascular Technologist Chief Accountant [a] Chief of Hospital [a] Chief Nurse [a] Claims Analyst Clinic/Company Nurses [a] Clinical Documentation Specialist Coder Customer Care Manager [a] Dentist [a] Developers Dialysis Nurse [a] Dialysis Technician Doctor [a] Echo Technicians Engineering Staff [a] Financial Planning HR Officer/HR Recruitment Personnel Information Technology Personnel Internal Audit Staff IT Technical Support Personnel Medical Director [a]

	Medical Liaison Officer (RN) [a] Member Relations Assistant Midwife Municipal Health Officer [a] Nurse/Public Health Nurse [a] Nurse Assistant Nutritionist [a] Programmers Project Lead Psychologist [a] Quality Assurance Medical Coder Respiratory Therapists Specialized Care/Clinic Nurses [a] Staff Nurses [a] Staff Medical Social Worker Staff Pharmacist / Clinical Pharmacist [a] Statistician [a] Trainer Medical Coder USRN Trainer Vascular Technicians
Specialized Technical Skills (Health)	Blood Extraction (e.g. arterial blood gas) Computer and Basic Software Literacy (e.g. Excel) Critical Care Nursing Database Management ECG Reading Endotracheal Intubation ICU Nurses [a] IV Insertion Programmers
Advanced Technical Skills (Health)	2D Echo Basic Life Support and Advance Cardiovascular Life Support Hemodialysis Operating Room and Delivery Room Nursing Skills Specialized Service of Health Care Accounts
Soft Skills and Socio-emotional Skills	Adaptability Ability to respond to the emotional needs of patients Ability to take constructive criticism Biohazard Complex Problem Solving Cooperation and Coordination Critical Thinking Customer Service Dedication, Determination, Diligence, and Commitment Effective Patient Communication Emotional Intelligence (EQ) Flexibility Foreign Language Skills (e.g. ability to speak properly in English or

	Spanish) Honesty Judgment and Decision Making Leadership Skill Organizational Skills Problem Solving Skills Respectful Strong Work Ethics

ANNEX C

List of Emerging Skills Expected to be More Demanded in the Next Five Years by Subsector, by Industry Development

Emerging Skills	Subsector					
	Primary Care Facility	Health Care Facility - General 1	Health Care Facility - General 2	Health Care Facility - General 3	Supporting Services - Finance (Health Maintenance Organization)	Supporting Services - Health Information Management Services (Clinical and Documentation Service Providers)
FOURTH INDUSTRIAL REVOLUTION						
Data Science and Analytics	66.67	45.45	44.44	83.33	66.67	100.00
Data Management and Governance	100.00	54.55	44.44	83.33	77.78	66.67
Artificial Intelligence and Machine Learning	0.00	36.36	55.56	66.67	66.67	100.00
Internet of Things (IoT)	33.33	59.09	33.33	50.00	88.89	66.67
Nanotechnology	33.33	22.73	44.44	33.33	33.33	66.67
Environmental and Occupational Health and Hygiene	33.33	59.09	55.56	66.67	77.78	66.67
Information Security	66.67	50.00	77.78	83.33	77.78	100.00
Social Science Research	66.67	31.82	55.56	33.33	55.56	66.67
Digital Marketing and Strategy	33.33	27.27	88.89	83.33	77.78	66.67
Health Information System Navigation and Management	66.67	54.55	77.78	66.67	88.89	100.00

Electronic Medical Records Management	66.67	68.18	77.78	83.33	77.78	66.67
Pharmacy Benefit	33.33	36.36	55.56	50.00	11.11	66.67
Digital Pharmacies / E-Pharmacy Service	33.33	45.45	55.56	66.67	22.22	33.33
Clinical Research	66.67	45.45	66.67	100.00	11.11	66.67
Remote Patient Monitoring	66.67	45.45	55.56	100.00	77.78	66.67
Health Surveillance and Monitoring	66.67	45.45	66.67	83.33	88.89	66.67
Complex Information Processing and Interpretation	66.67	36.36	55.56	66.67	88.89	66.67
NEW NORMAL						
Telemedicine / Telehealth	66.67	59.09	55.56	83.33	100.00	66.67
Psychological First Aid	100.00	50.00	22.22	66.67	77.78	66.67
Basic Counselling (listening, interviewing, probing)	33.33	45.45	22.22	66.67	55.56	66.67
Mobile Health Application Navigation	33.33	40.91	44.44	83.33	77.78	66.67
Customer Service/Customer Relations	33.33	36.36	33.33	50.00	100.00	66.67
Technology Use for Disease Prevention and Control	66.67	63.64	66.67	83.33	66.67	33.33
Workplace Disinfection and Sanitation	33.33	45.45	44.44	50.00	88.89	33.33

Use of Online/Digital Communication Tools (i.e Video Conferencing Platforms)	33.33	50.00	44.44	66.67	88.89	100.00
Health Care Waste Management	33.33	54.55	55.56	50.00	33.33	0.00

ANNEX D

List of Emerging Green Skills/Jobs by Subsector

Subsector	Emerging Green Jobs	Emerging Green Skills
Primary Care Facility		○ Waste Management ○ Clean Air Act ○ Water Conservation
Health Care Facility - General Level 1	○ Safety Officer ○ Designated Pollution Control Officer ○ Alternate Pollution Control Officer ○ Sewage Treatment Plant Operator ○ Medical Health Waste Officer	○ Hospital Waste Management ○ Environmental Awareness ○ Sustainable Development ○ Leadership Skills ○ Water Treatment ○ Recycling
Health Care Facility - General Level 2		○ Environmental Awareness ○ Leadership Skills ○ Willingness to Learn
Health Care Facility - General Level 3	○ Solar Photovoltaic Installers ○ Wind Turbine Specialist ○ Hydropower Technicians	○ Materials Recovery and Reuse ○ Reduction of Carbon Footprin ○ Hazardous Waste Management
Supporting Services - Finance (HMO)		○ Energy Efficiency
Supporting Services - HIMS (Clinical and Documentation Service Providers)		○ Analytics ○ Data Science ○ Data Management

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