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August 2021

Philippine Medical Devices

Rising Cases of Chronic Diseases and Expected Growth in Demand for Cancer Therapy and Dialysis Equipment

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1. Executive Summary

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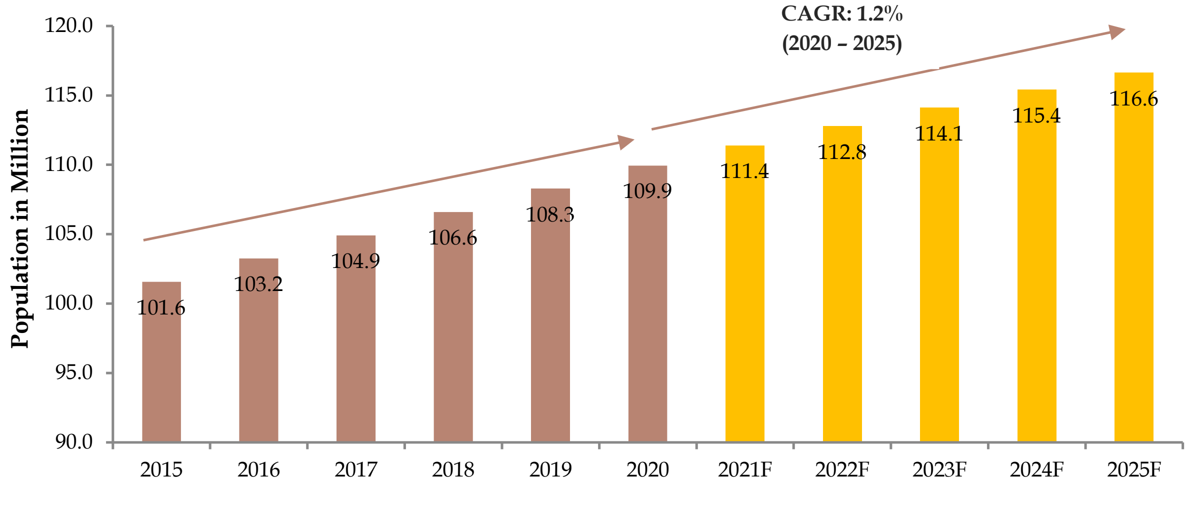
Macroeconomic Indicators in the Philippines:

Economic Sectors: The Philippines is one of the most dynamic economies in the East Asia Pacific region. With increasing urbanization, a growing middle class, and a large and young population, the Philippines' economic dynamism is rooted in strong consumer demand supported by a vibrant labor market and robust remittances. The country is one of the world's largest center for Business Process Outsourcing with strong manufacturing electronics base & other high-tech components. The Philippines is rich in natural resources, such as chromite, nickel, copper, coal & oil.

Socio Demography: Philippines is an archipelago in Southeast Asia with 7,641 islands, only about 2,000 of which are inhabited. It is grouped into three geographic areas: Luzon, Visayas and Mindanao.47% of the population is urban and rising again in last Decennium. Territory is divided into 80 provinces managed through 17 administrative regions. The Philippines population was evaluated at 109.9 million in 2020 and is expected to grow at a CAGR of 1.2% during 2020-2025 to reach 116.6 million by 2025. Currently, life expectancy rate in The Philippines is 71.4 years in the year 2020 and is expected to reach 72.8 years by 2025.

Figure 1-1: The Philippines Population in Million and Growth Rate in Percentage (%), 2015 – 2025F

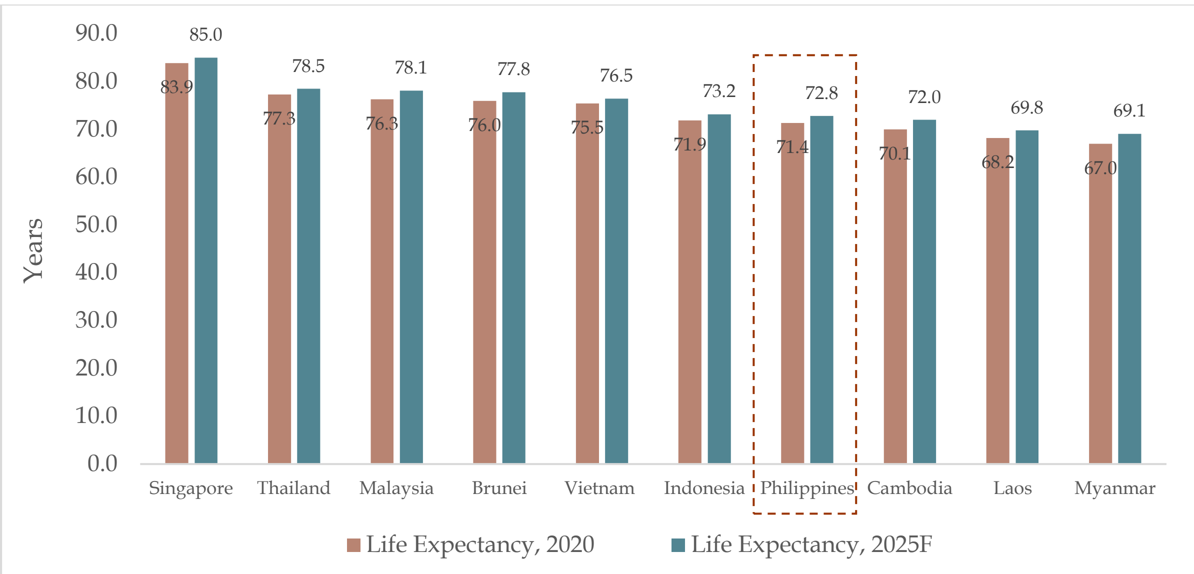


Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Philippine Statistics Authority, Ken Research Analysis

Note: F refers to Forecasted Numbers

Note: Population Projections has been done basis the historical assessment and subjective anticipated population growth

Figure 1-2: Life Expectancy Rate in the Philippines with ASEAN Region on the Basis of Years, 2020 and 2025F



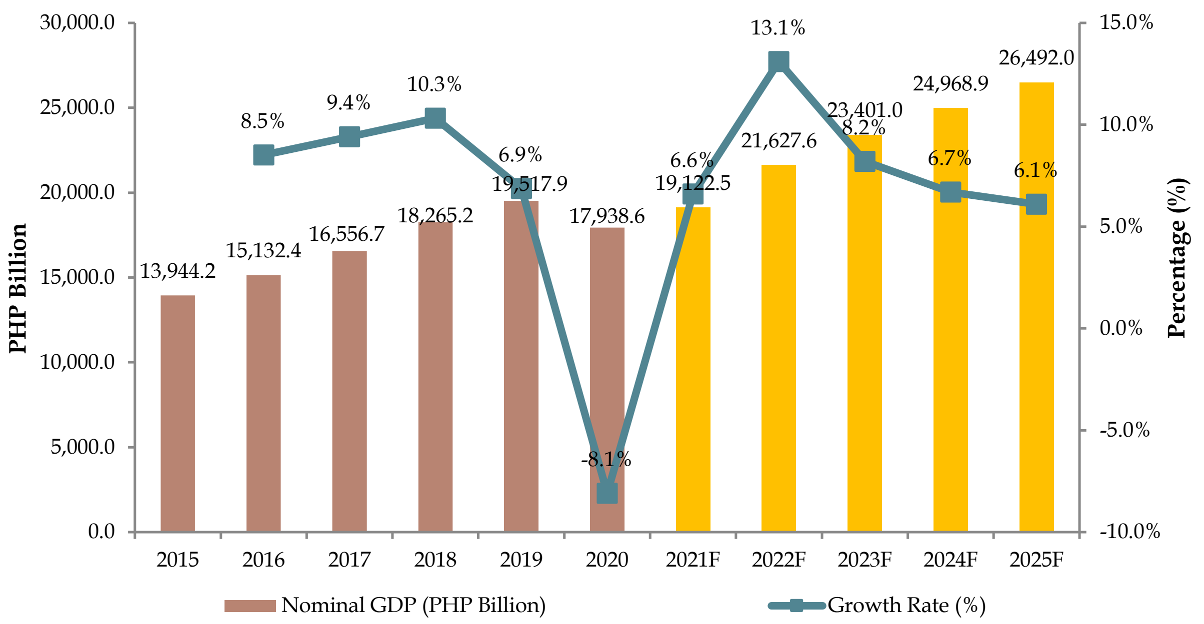
Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Health Ministries of Respective Countries, Ken Research Analysis

Note: F refers to Forecasted Numbers

Note: Life Expectancy Projections has been done basis the historical assessment and subjective anticipated growth and standard of living

GDP Statistics: The Philippines economy suffered a deep recession in 2020 due to the impact of the COVID-19 pandemic, with **GDP contracting by 8.1%** year-on-year in Nominal terms. However, **Nominal GDP (in PHP Billion) grew at a CAGR of 5.2%** from **PHP 13,944.2 Billion in the year 2015 to PHP 17,938.6 billion in the year 2020**. In the near future, it is anticipated that the rising private consumption and services as major growth drivers, further supported by an improvement in consumer spending and investment amid fiscal support are expected to drive The Philippines future growth such that its **Nominal GDP is expected to reach PHP 26,492.0 billion by 2025. GDP growth rate prior Covid-19 was healthy at ~7%** per annum, during 2020. The major regions such as National Capital Region (NCR) contributed highest share in the country's GDP accounting ~32% share in the year 2020, followed by Calabarzon (~14%), Central Luzon (~10%).The Government has put in place a **pandemic stimulus program** to boost its economic recovery. The recovery package consists of a **combination of fiscal, monetary, and financial instruments totaling about PHP 2.8 trillion or 15.4%** of the country's gross domestic product. The implementation of economic recovery package is the second component of the three-pillar strategy to facilitate the economy's recovery by **6-7% in 2021** and return to **pre-pandemic levels by 2022**.

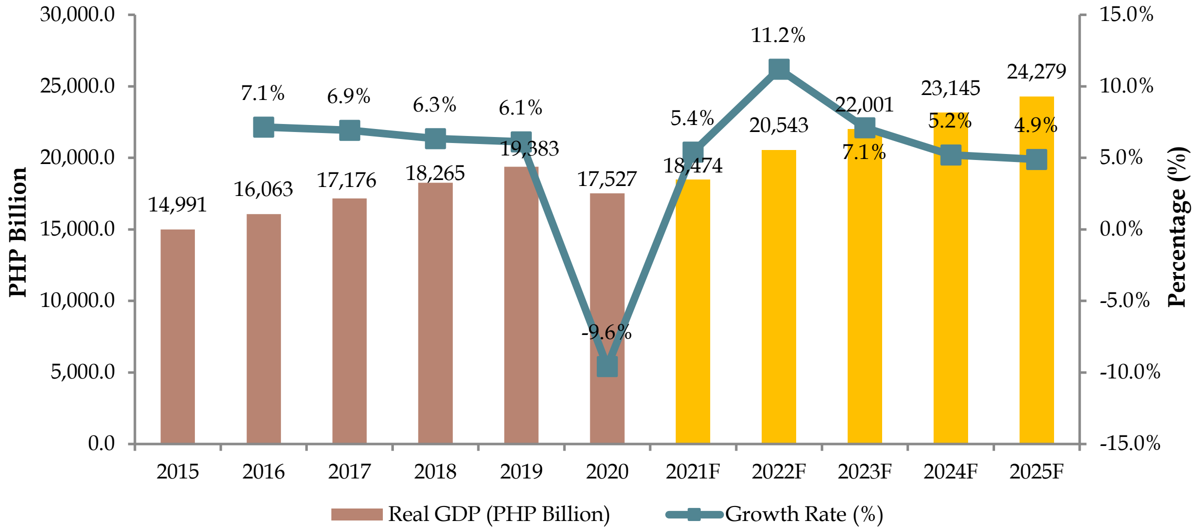
Figure 1-3: The Philippines Nominal GDP in PHP Billion and Growth Rate in Percentage (%), 2015 – 2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Philippine Statistics Authority, Ken Research Analysis
Note: F refers to Forecasted Numbers

Note: GDP Projections has been done basis IMF forecast and associated news releases published by Government Agencies

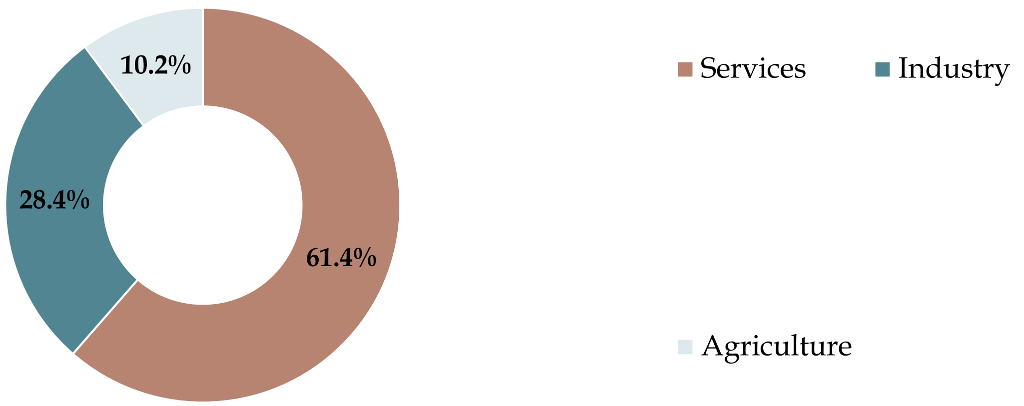
Figure 1-4: The Philippines Real GDP in PHP Billion (Constant Price 2018) and Growth Rate in Percentage (%), 2015 – 2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Philippine Statistics Authority, Ken Research Analysis
Note: F refers to Forecasted Number
Note: GDP Projections has been done basis IMF forecast and associated news releases published by Government Agencies

The composition of the gross domestic product (GDP) is broadly split among the agricultural, industrial, and service sectors. In 2020, agriculture accounted for 10.2% of GDP, marking the lowest contribution to GDP in the country's history. To put that into perspective, agriculture accounted for one-quarter of the country's GDP during the 1980s and almost one-third in the 1970s. Meanwhile, the industrial and service sectors accounted for 28.4% and 61.4%, respectively during 2020. The share of industrial output has steadily fallen as well over time, while the services sector has risen substantially.

Figure 1-5: The Philippines GDP Split by Economic Sectors (Services, Industry and Agriculture) in Percentage (%), 2020



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Philippine Statistics Authority, Ken Research Analysis

Overview of Healthcare Sector in the Philippines

The health sector in the Philippines continues to change after a decade of increased public spending on health care. The sector is characterized by a well-developed private health care sector next to the public sector. National Capital Region (NCR) and Luzon are the economic heart of the country and contain the largest share of both public and private health care infrastructure.

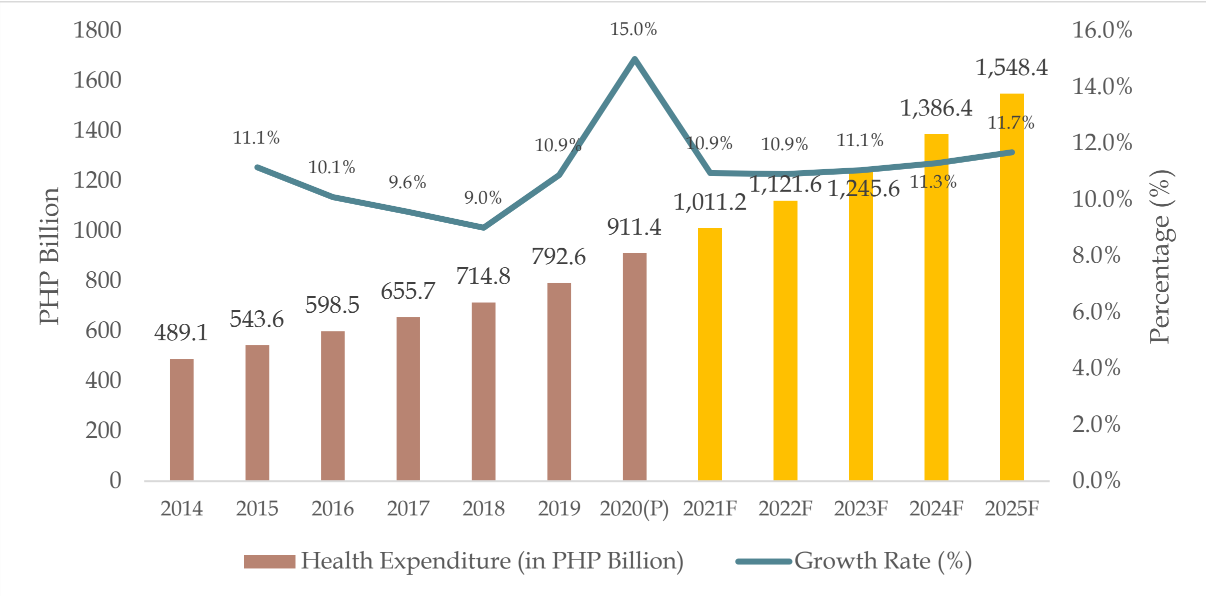
The relatively young population (~65% below the age of 35 years) is still growing and pays almost as much as the government directly to public and private providers as out-of-pocket payments primarily for consultations, diagnostics and lab tests. The Burden of Disease is tilted towards growing Non-Communicable Diseases, such as cardiovascular diseases, Diabetes and Cancer treatment. Respiratory diseases, injuries, accidents and some infectious diseases (Measles, Dengue) are also on the rise.

The government passed the Universal Health Care Act in 2019, automatically enrolling all Filipinos into a new National Health Insurance Programme and making some other structural reforms to the healthcare delivery system. The new measures are broadening healthcare access and shifting the burden of payments away from individuals towards the national health insurer, the Philippine Health Insurance Corporation ("Phil Health").

The Philippines healthcare expenditure has increased at a CAGR of 10.9% from PHP 489.1 billion in 2014 to PHP 911.4 billion in 2020(P). The future for healthcare expenditure seems bullish backed by hospital expansion and spending on healthcare services by government and private entities. The growing healthcare expenditure in the country will lead to increase in the demand of medical devices and diagnostic equipments, to offer better healthcare facilities in the country.

In the future, Government proposes a significant increase in allocation of funds to the Department of Health which will enable authorities to finance the expansion of the country's health insurance scheme and upgrade medical facilities.

Figure 1-6: The Philippines Healthcare Expenditure in PHP Billion and Growth Rate in Percentage (%), 2014 – 2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) The Philippine statistics Authority

Note: P refers to Provisional Numbers and F refers to Forecasted Numbers

Note: The above healthcare expenditure includes overall spending by government and private healthcare units including household out of pocket expenditure

Note: Healthcare expenditure Projections are based on Interviews conducted with Ministry of Health and Government Association to assess the expected growth in budget outlay

Table 1-1: The Philippines Health Expenditure by Health Care Financing Scheme in PHP Million, 2014-2019

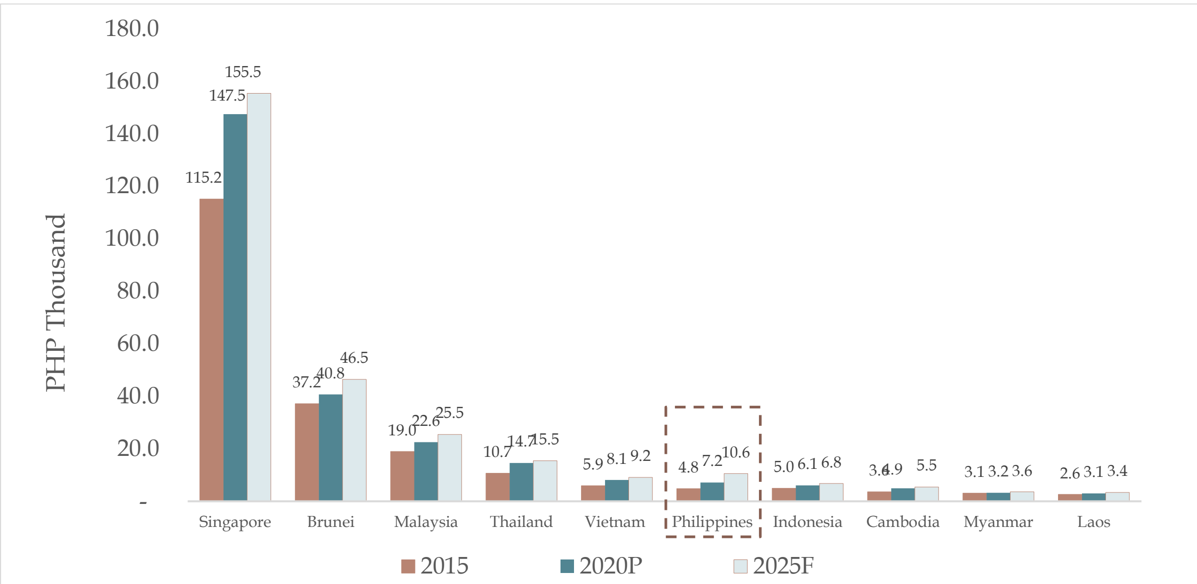
Region Wise (Nominal GDP in PHP Million)	2018	2020
Government schemes and compulsory contributory health care financing schemes	**279,792**	**382,759**
Government schemes	166,835	225,255

1) **Central government schemes**	108,087	148,962
- Domestic revenue-based central govt schemes	106,860	145,124
- Foreign assistance-based central govt schemes	1,227	3,839
2) **State/regional/local government schemes**	58,748	76,293
Compulsory contributory health insurance schemes	112,956	157,504
- Social health insurance schemes	112,956	157,504
Voluntary health care payment schemes	**70,737**	**91,987**
Voluntary health insurance schemes	62,934	82,399
1) **Government-based voluntary insurance**	31	38
2) **Complementary/supplementary insurance schemes**	62,902	82,361
- Life and non-life insurance schemes	14,110	19,801
- Managed health care schemes (HMOs)	48,792	62,560
Enterprise financing schemes	7,804	9,589
Household out-of-pocket payment	**364,241**	**436,691**
Total	**714,770**	**911,437**

Source: The Philippines Health Statistics

Philippine's per capita healthcare expenditure stands substantially lower than its ASEAN Region peers such as Singapore, Brunei, Malaysia, Thailand, and Vietnam which had per capita healthcare expenditures of PHP 147.5 thousand, PHP 40.8 thousand, PHP 22.6 thousand, PHP 14.7 thousand and PHP 8.1 thousand in 2020, respectively. **In the coming future, growth in per capita health expenditure in the Philippines is anticipated to outpace ASEAN growth. This additional spending will contribute to improvements in health outcomes and been an important source of economic growth and jobs.**

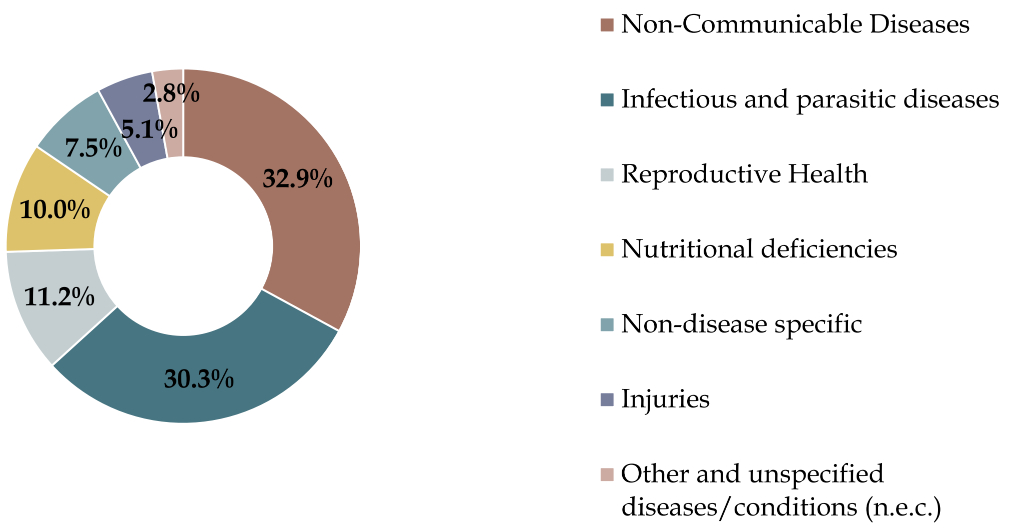
Figure 1-7: The Philippines Health Expenditure per Capita Compared to ASEAN Region in PHP Thousand, 2015, 2020P and 2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Industry Articles, Ken Research Analysis
Note: P refers to Provisional Numbers and F refers to Forecasted Numbers
Note: Healthcare expenditure Projections are based on Interviews conducted with Ministry of Health and Government Association to assess the expected growth in budget outlay

The Philippines' Department of Health lists the following diseases with growing incidence rates: hypertension and heart diseases, diabetes and kidney failure, pulmonary and other respiratory diseases, cancer, HIV and AIDS. Most hospital improvements concentrate on specialized services for radiology, cardiac, lung and kidney examinations, and pathology to address the problem. This is likely to support the growth of diagnostics medical device equipment, Cancer Therapy and Dialysis Equipments.

Figure 1-8: The Philippines Healthcare Expenditure on the Basis of Classification of Diseases and Conditions in Percentage (%), 2020P



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) The Philippine statistics Authority
Note: P refers to Provisional Numbers
Note: The above data is provisional which is estimated basis upon historical statistics and variations due to COVID-19

Organization of the Healthcare System:

The healthcare system in the Philippines continues to change after a decade of increased public spending on health care. The **healthcare industry (Pharmaceuticals, Medical Devices, Vitamin and Dietary Supplements, Hospital Market and Health Insurance Premium)** was valued at **PHP 640.2 Bn in terms of revenue for the year ending 2020**. The health care system is divided into two systems: public and private health care. Private sector is mainly active in hospital care and maternities. Government hospital caters to primary care and first-line facilities. Health facilities are regulated by Department of Health (DOH) - Health Facilities & Services Regulatory Bureau (HFSRB).

In The Philippines, there are about **9,731 healthcare units out which 5,409 are government owned and 4,322 are owned by private entities, as on December 31st 2020**.Specific to hospitals, the country has 1,915 hospitals, out of which 767 hospitals are owned by the government and remaining 1,148 hospitals are privately owned as of 31st December 2020. Moreover, these hospitals are being further divided on the basis of certain category such as (Level 1, Level 2, Level 3 and Infirmary Dispensary).Of the total beds, almost two thirds are in the NCR and the rest of Luzon (65% of total beds). Only 20% of hospital beds are in Mindanao and 15% in the Visayas. This showcases promising potential for other island groups to develop healthcare infrastructure in the coming years

Table 1-2: The Philippines Hospitals Breakdown on the Basis of Type of Hospitals (Level 1, Level 2, Level 3, Infirmary, and Others) in Number of Units, as of 31st December 2020

Hospitals	Government	Private	Total
Level 1 Hospital	340	490	830
Level 2 Hospital	44	301	345
Level 3 Hospital	54	63	117
Infirmary/Dispensary	329	294	623
Total Hospital (A)	**767**	**1,148**	**1,915**
Others Healthcare Entities			
Animal Bite Treatment Centres	390	33	423
Ambulatory Surgical Units	2	175	177
Community Isolation Units	698	13	711
Drug Abuse Rehabilitation Centres	9	-	9
DOTS Package	1,722	87	1,809
Free Standing Dialysis Clinic	6	427	433
Family Planning Providers	313	719	1,032
SARS COV2 Testing Labs	67	47	114
Maternity Care Package Providers	1,259	1,638	2,897
Outpatient HIV/AIDS Treatment	118	35	153
Outpatient Malaria Package	58	-	58
Total Other Centre Providers (B)	**4,642**	**3,174**	**7,816**
Total Hospitals (A+B)	**5,409**	**4,322**	**9,731**

Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Philippines Health Statistics

Note: Level 1 with minimum healthcare services,

Level 2 that offer extra facilities like intensive care unit and specialist doctors

Level 3 hospitals that have training programs for doctors, rehabilitation, and dialysis units, among others

Consideration of the Philippines as Medical Tourism Destination:
The Philippines has developed as a promising and favoured destination for Medical tourism, given the low cost advantage compared to other ASEAN countries. In fact, it ranked **24th based on the 2020 Medical Tourism Index** (MTI) survey out of 46 countries, and it is one of the **25 Leading Growth Markets** for Wellness Tourism Trips from 2015 to 2017 based on the Global Wellness Tourism Economy Report. The key features include the large pool of English-speaking professionals, its culture of hospitality, the quality of education and skills of health professionals, its young and hospitable workforce, competitive price advantage for healthcare and other services, and popularity as a tourist destination in general, among others. Cancer treatments at a **lower cost** has supported the medical device manufacturers to witness a huge influx of foreign patients in the country

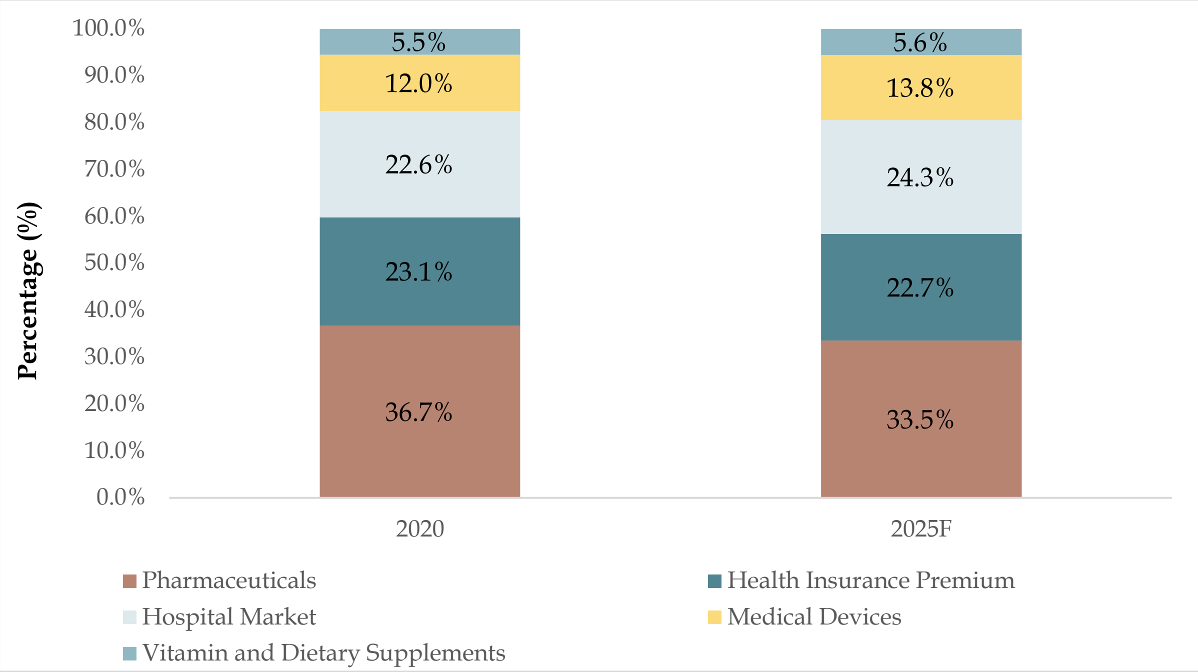
Positioning of Healthcare Industry in the Philippines:
The Philippines is nominated as third-largest **pharmaceutical** market in ASEAN, after Indonesia and Thailand. The pharmaceutical industry in the Philippines has experienced stable growth for the past decade, and this trend is expected to continue supported by Implementation of Universal healthcare coverage. All the Philippines' citizens are entitled to free healthcare under the Philippine Health Insurance Corporation, known as **"Phil Health"**. COVID-19 pandemic has placed extra strain on The Philippines' health care system which resulted in the increased awareness of health risks and eventually a spike in private insurance coverage in the Country. In the Philippines, overall **hospital expenditure** has increased at a **CAGR of 13.1%** during the period 2014 – 2020.

The healthcare market in the Philippines showcases promising growth prospects **for medical device** industry. Since, The Philippines have a **high death rate** due to the diseases such as **respiratory infections, diabetes, hypertension, TB**, and other heart related problems. Furthermore, the nation struggles with **both obesity and malnutrition** at the same time. Therefore, country has a **huge demand of medical device's both equipment and consumables** to treat the patients.

Vitamin &Nutraceuticals market of The Philippines is presently in its growth stage due to the dependence on traditional pharmaceutical medicine system by growing middle class population, which accounts for majority of the Filipino population. **In the forecast period, high growth opportunities are likely to be perceived in functional food ingredients including lutein, lycopene, omega-3 fatty acids, probiotics; soy protein nutrients; essential minerals such as calcium and**

magnesium; herbal extracts including garlic, green tea and non-herbal extracts including chondroitin, glucosamine and coenzyme Q10 in the Philippines.

Figure 1-9: The Philippines Healthcare Market Segmentation by Sub–Industry (Pharmaceuticals, Health Insurance Premium, Hospital Market, Medical Devices, Vitamin and Dietary Supplements) on the Basis of Revenue Percentage (%), 2020 and 2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Interviews with the Philippines Medical Device Market Professionals, Ken Research Analysis
Note: F refers to forecasted Numbers
Note: Future Projections for healthcare Industry has been estimated by understanding the likely growth in each healthcare segment, which is validated by Industry professionals under each segment

Table 1-3: The Philippines Healthcare Market Segmentation by Sub – Industry (Pharmaceuticals, Health Insurance Premium, Hospital Market, Medical Devices, Vitamin and Dietary Supplements) on the Basis of Revenue in PHP Billion and CAGR in Percentage (%), 2020 and 2025F

Healthcare Industry (PHP Billion)	2020	2025F	CAGR (2020 - 2025)
Pharmaceuticals	235.0	310.0	5.7%
Health Insurance Premium	148.2	210.0	7.2%
Hospital Market	145.0	225.0	9.2%
Medical Devices	77.0	127.8	10.7%
Vitamin and Dietary Supplements	35.0	52.0	8.2%
Total	**640.2**	**924.8**	7.6%

Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Interviews with The Philippines Medical Device Market Professionals, Ken Research Analysis
Note: F refers to forecasted Numbers

Note: Future Projections for healthcare Industry has been estimated by understanding the likely growth in each healthcare segment, which is validated by Industry professionals under each segment

Disease Prevalence in the Philippines:

In the Philippines, 8 out of the 10 leading causes of morbidity or illness can be attributed to infectious diseases. Illness related to the respiratory system such as acute respiratory infection, pneumonia and bronchitis are the top 3 leading causes of illness. Acute Respiratory Infection accounts the highest disease prevalence rate of 652.9 per ten thousand population, followed by hypertension at 409.9/10,000 population, Urinary tract infection reported at 142.4/10,000 in the year 2020. Animal bites, skin disease, pneumonia are the other prevalent diseases in the Philippines.

Kidney Failure is one of the major causes for rising morbidity, which enhances the demand for dialysis equipment. In 2020, there are close to 35,000 Filipinos who are undergoing dialysis and treatment for kidney disease in the country. Over the past decade, the number of new cases has increased by about 15% every year; and with uncontrolled diabetes and hypertension as risk factors for kidney disease.

For cancer cases, during 2020, around 153,751 new cases of Cancer have been reported in the country, whereas about 92,606 deaths have been recorded in the country due to cancer in the same year. Breast cancer has been ranked 1st in terms of highest number of cancer cases recorded, followed by Lung cancer and Colon cancer.

High prevalence rate of diseases such as respiratory infection, hypertension, urinary tract infection, pneumonia, bronchitis leads to heavy demand of **medical diagnostic devices** such as **X-ray, CT scan and MRI scan machines in which the client largely deals**. Moreover, **impact of Covid-19** will be a boon for the client as there will be a huge demand for **dialysis (for patients with kidney infections) and cancer therapy equipment** for which they are the leading distributors in the Philippines.

Table 1-4: Cross Comparison of Number of Cases per Disease, Disease Prevalence Rate per Hundred Thousand Populations in the Philippines, Products/Techniques Used to Diagnose Disease, 2020

Diseases	Number of Cases per Disease, 2020	Rate/100,000 Population	Devices/Techniques Used to Diagnose Disease
Acute Respiratory Infection	710,151	652.9	Arterial Blood Gas Test, Chest X-ray, CT Scan, Peak Flow Meter, Pleural Fluid Culture, Pulse Oximetry, Spirometry, Sputum Test
Hypertension	445,834	409.9	Electrocardiogram (EKG), Echocardiogram, Ultrasound, CT Scan or MRI, Ambulatory Blood Pressure Monitoring (APBM), Home Blood Pressure Monitoring (HBPM)
Urinary Tract Infection	154,851	142.4	CT scan or MRI, Analyzing a urine sample at a lab, cystoscopy
Cancer	153,751	139.9	Linear Accelerator, Cyclotron, Brachytherapy
Animal Bites	149,815	137.7	Wound cultures, x-ray, CBC, Blood Cultures, Angiography, Photography
Skin Disease	119,110	109.5	Dermoscopy, Confocal Imagers, Skin biopsy
Acute Lower Respiratory Infection	97,507	89.6	X-ray scan, CT scan and Pulse Oximetry, Blood Test and Lab Test
Pneumonia	87,537	80.5	Chest X-ray, Pulse Oximetry, Sputum Test, CT Scan
Acute Watery Diarrhea	56,710	52.1	Flexible sigmoidoscopy or colonoscopy
Bronchitis	55,657	51.2	Chest X-ray, Sputum Tests, Pulmonary Function Test
TB All Forms	46,917	43.1	Sputum Microscopy, Gastric Washing
Kidney Disease (Undergo Dialysis Treatment)	35,000 – 40,000	35.1	Dialysis Machine and consumables

Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Field Health Services Information System Annual Report 2020

Industry Analysis (Trends & Growth Drivers):

Over the last few years, a number of private sector companies and individuals have **invested in development of hospital Infrastructure** across the Philippines. Several

companies have acquired stake in the healthcare sector, providing much-needed capital for facilities to upgrade and modernize equipment.

The **Department of Health - Office of the Secretary** has made a total allocation of PHP 127.29 billion for CY 2021 **under the National Expenditure Plan,** which is 27% higher than the previous year. On top of this, a total of PHP 608.8 million is to be charged under the Special Account in the General Fund (SAGF). Of this amount, PHP 91.7 million is for the Bureau of Quarantine (BOQ) and PHP 517.0 million for the Food and Drug Administration (FDA).

Current demand reflects healthcare requirements for growing incidence of **hypertension, diabetes/kidney diseases, TB/respiratory ailments, cancer, and some incidence of HIV/AIDS**. Products with high sales potential for suppliers include **electro-cardiographs, computed tomography apparatus (CT scan), magnetic resonance imaging (MRI) equipment, ultrasonic scanning machines (ultrasound), X-ray and radiation equipment, breathing appliances, and linear accelerators.**

With the **onset of Covid-19**, the healthcare industry has started shifting their focus towards highly innovative medical technology for delivering care, which a patient needs indicating positive onset for the medical device industry**.** This is expected to further boost the r**equirements for efficient healthcare services, new technology, and equipment replacement in the market**. All hospitals must continue upgrading facilities to remain competitive.

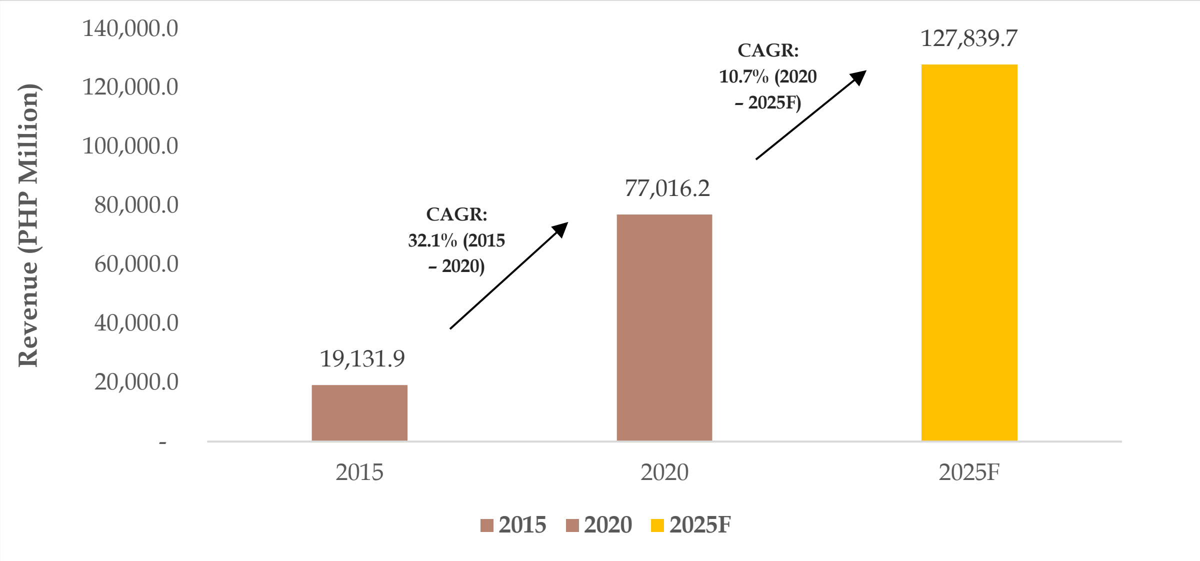
The Philippines Medical Device Market Size & Future Projections:

The Philippines Market Device Industry was valued at **PHP 19,131.9 million in 2015** and registered a growth of **32.1%** during the review period of 2015-2020 reaching to a value of **PHP 77,016.2**million in 2020. The market is currently in **Growth Stage, with an increase in number of hospitals, high prevalence of chronic diseases, rising instances of heart and kidney failures, expanding elderly population, awareness towards health checkups, incoming of medical tourism and onset of COVID-19 pandemic** as some of the key drivers for the market.

Medical Device Industry in the Philippines is currently **import oriented**, especially for **highly technological machineries** such as Diagnostic Imaging, Cardiac Devices, Respiratory products and others. The **local manufacturing industry** is dominant in production of hospital furniture and **medical disposables** such as surgical gloves, syringes and needles. It also supports in prototype units and spare parts production.

The Philippines Medical Device market is expected to reach to a value of PHP **127,839.7 million by 2025**. The market will witness a **CAGR of 10.7% during 2020-2025**. The market is expected to be import dependent in future as well.

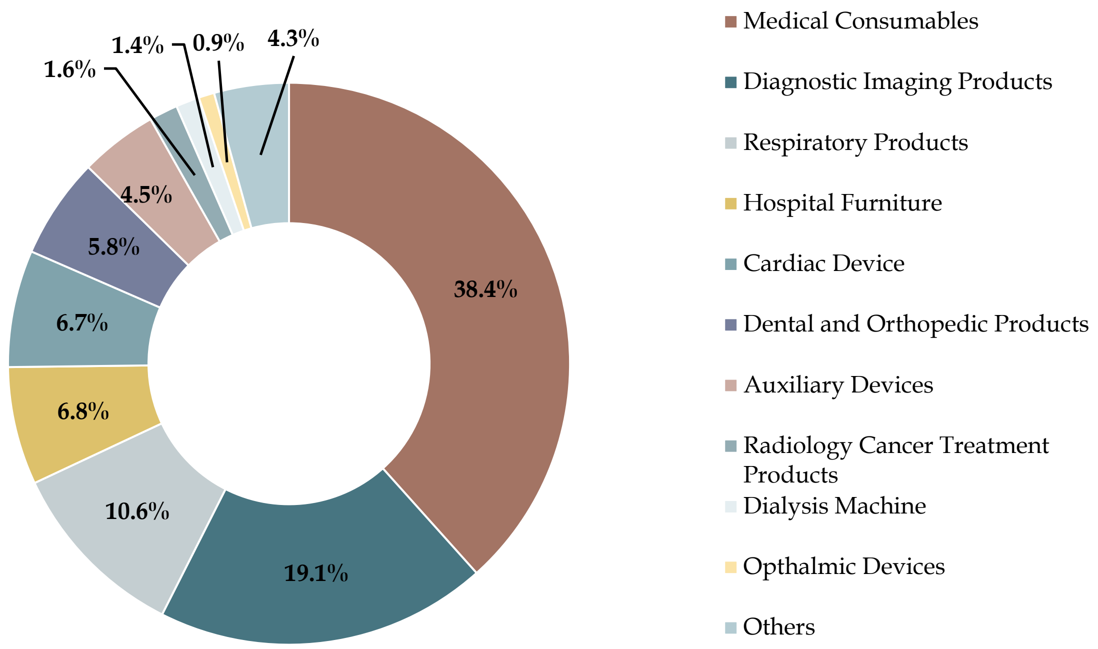
Figure 1-10: The Philippines Medical Device Industry Market Size on the Basis of Revenue in PHP Million, 2015, 2020 &2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021)
Interviews with veterans from The Philippines Medical Devices Industry, Ken Research Analysis
Note: F refers to Forecasted Numbers
Note: The above market size represents spending made by all the end users on medical equipment and consumables/supplies
Note: Future Projections for Medical Devices Industry has validated by Industry professionals under each of the medical device segment

Medical Consumables, Diagnostic Imaging Products, Respiratory Products, Hospital Furniture & Cardiac Devices have contributed highest to the overall revenue for medical devices Industry. **Medical consumables** growth has supplemented during 2020, owing to higher sales for Protective equipment, syringes and other consumables categories. **Diagnostic imaging** products is increasing due to an increase in the number of hospitals specializing in cancer, cardiology and the increase of non-communicable diseases, further supported by growing replacement among healthcare institutions. With the emergence of Covid-19, the number of **respiratory disease cases** in the country have increased significantly in the year 2020 and 2021

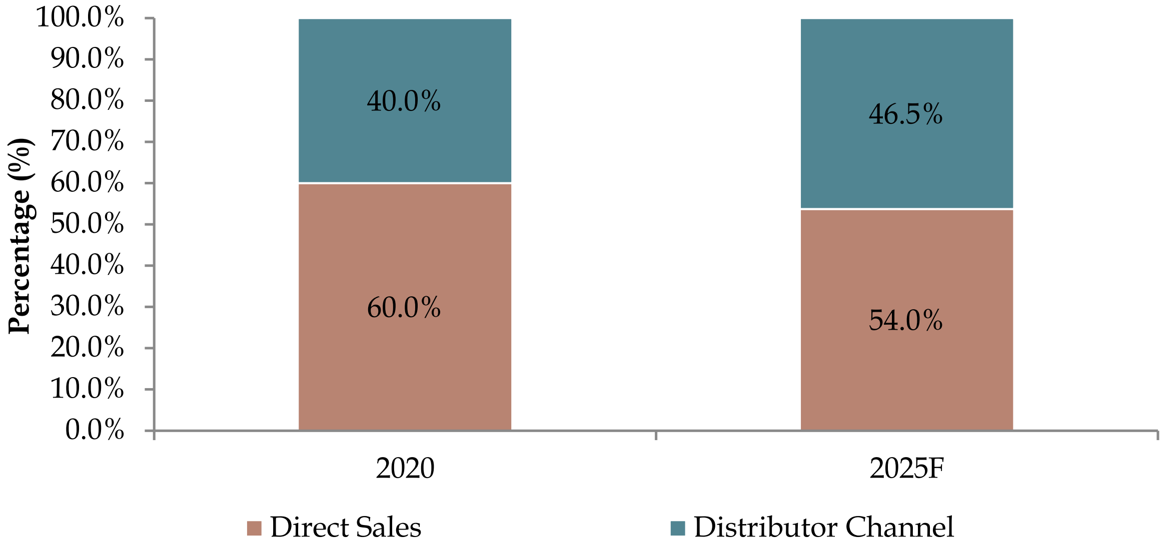
Figure 1-11: The Philippines Medical Devices Market Segmentation by Type of Medical Devices (Medical Consumables, Diagnostic Imaging Products, Dialysis Machine, Cardiac Device, Respiratory Product, Hospital Furniture, Auxiliary Devices, Dental and Orthopedic Products, Ophthalmic Devices and Others) on the Basis of Revenue in Percentage (%), 2020



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021)
Interviews with veterans from The Philippines Medical Devices Industry, Ken Research Analysis
Others include Aesthetic Devices, Physiotherapy devices instruments and appliances for medical use

Currently, the distributors **contribute 40% share towards the sales of Medical equipment during 2020.** In the near future, it is anticipated that the share of distributor in the **equipment market** will increase and **reach to 46.5% by 2025** largely due to better **after sale service, liaison with hospitals and offering technical assistance to hospitals and clinics along with the strong local presence** in the country.

Figure 1-12: The Philippines Medical Equipment Market Segmentation by Sales Channel (Direct Sales & Distributor Channel) on the Basis of Revenue in Percentage (%), 2020 & 2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021)
Interviews with veterans from The Philippines Medical Devices Industry, Ken Research Analysis
Note: Future Projections for Distribution Channels for Medical Equipment has validated by Industry professionals operating under this Industry

Diagnostic Medical Device (Equipment + Consumables) Market:

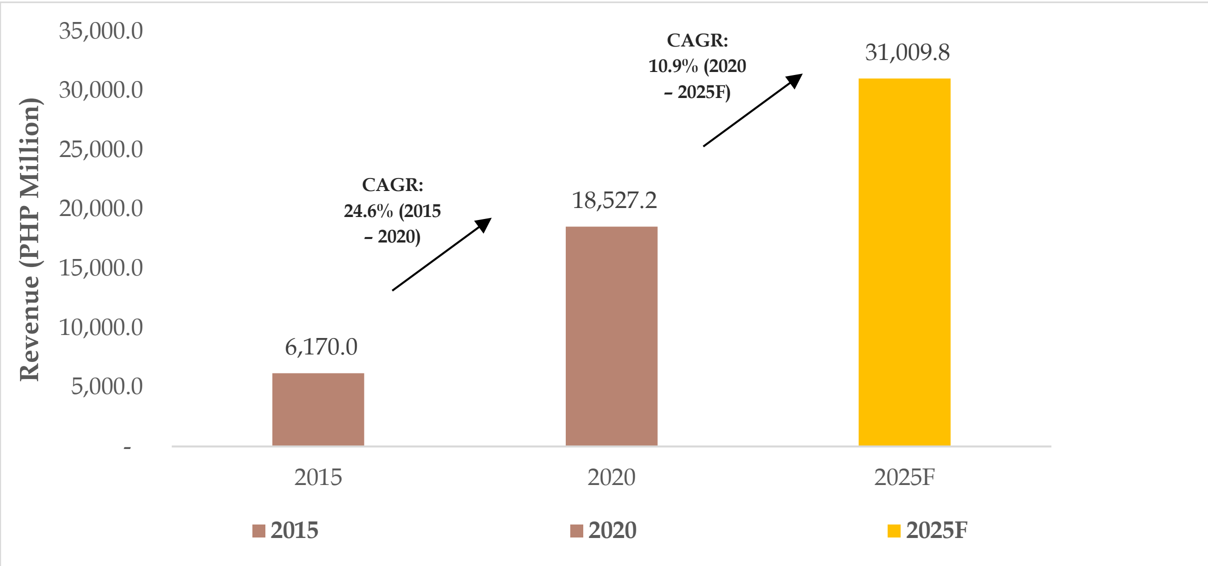
Diagnostic medical device market in terms of revenue was valued at **PHP 6,170.0 million**, which grew at a **double digit CAGR of 24.6%** during the period 2015–2020 and it reached to **PHP 18,527.2 million** in 2020.Some of the diagnostic medical devices include kits, scales, stethoscopes, pulse oximeters, reflex hammers/ tuning forks, otoscopes, ophthalmoscopes, ultrasound, X-ray, and imaging products, catheter, infectious disease testing, test strips, gels, containers, swabs, and more.

Diagnostic Medical Equipment contributed **79.3%** revenue share in the overall diagnostic medical devices market in 2020. The remaining **20.7%** revenue share was contributed by the **diagnostic medical consumables** in 2020. Sales through **Dealerships contributed around 30% share** of the overall diagnostic medical equipment sales during 2020.

In terms of product categories, **X-Ray Equipments have contributed the highest revenue share of 24.5%** in the market during 2020. This is followed by revenue contribution from **Ultrasound (21.7%), CT-Scan (21.4%) & MRI (16.6%)** in the diagnostic segmentation.

The key factors propelling demand of diagnostic medical devices include **growing incidences of infectious and chronic diseases, kidney and liver failure issues, increasing adoption of automated platforms and better access to healthcare facilities by the general population**. Major companies which are currently dominating the market includes **Siemens, GE Healthcare, Philips** and others. New technologies such as **AI, 3-D Printing, IVD, and Digital Twin Technology** have recently been introduced in the market. In future, it is anticipated that the overall diagnostic medical device market in terms of revenue will reach to **PHP 31,009.8 million, at a CAGR of 10.9%** during the period **2020 – 2025**.

Figure 1-13: The Philippines Diagnostic Medical Devices Market Size on the Basis of Revenue in PHP Million, 2015, 2020 & 2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021)
Interviews with veterans from the Philippines Medical Devices Industry, Ken Research Analysis
Note: F refers to Forecasted Numbers
The Philippines Diagnostics Devices has been defined as the overall spending made by end users on Diagnostics Medical Devices and consumables including MRI, CT Scan, Ultrasound, X-Ray, Electro diagnostic Apparatus, ECG and others
Note: Future Projections for Diagnostic Medical Devices segment has validated by Industry professionals operating under this Industry

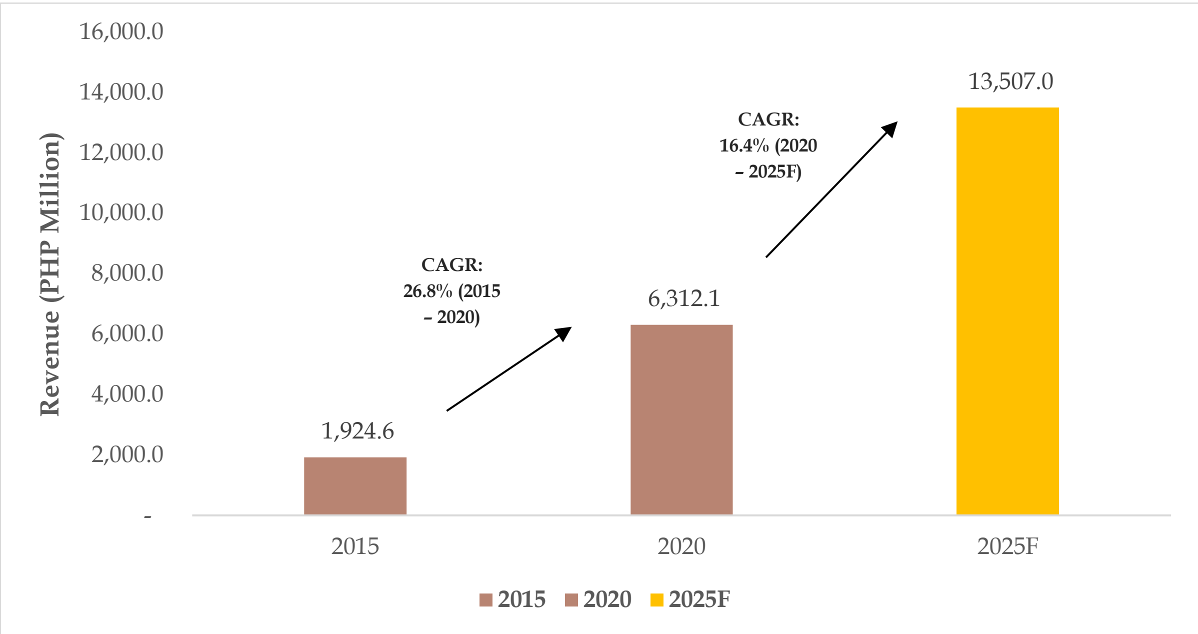
Dialysis Medical Device (Equipment + Consumables) Market:

Dialysis medical device market grew from **PHP 1,924.6 million in 2015 to PHP 6,312.1 million in 2020 at a CAGR of 26.8%**. Some of the dialysis medical equipment and consumables include dialyzers, AV tubing sets, fistula needles, catheters, sodium bicarbonate cartridges and bags, dialysis machine, IV poles, heating pad, automated cycling machines and others. **Dialysis consumables** have contributed the highest share of **83.5% in terms of revenues**, with **equipments** contributed remaining **16.5% share** in the market during 2020.

Growing cases of chronic diseases, increasing demand for home dialysis & increase in dialysis consumables due to COVID outbreak have been the major growth drivers for the dialysis medical devices**.** Fresenius and B Braun are some of the major brands which are currently operating in the dialysis equipment market. New technologies that have emerged in the market include portable dialysis, wearable dialysis and new clot preventing dialysis machines. Companies are focusing on the increased demand for dialysis machines by patients with COVID-19 who have developed acute kidney injury

During this critical time, the growing number of hospitalized patients in need of renal replacement therapy has put pressure on both equipments, supplies, solutions and nursing support in many hospitals across the country. Given the demand scenario, the market for Dialysis medical device is anticipated to grow at a **CAGR of 16.4%** for the period of 2020-2025F

Figure 1-14: The Philippines Dialysis Medical Devices Market Size on the Basis of Revenue in PHP Million, 2015, 2020 & 2025F



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021)
Interviews with veterans from The Philippines Medical Devices Industry, Ken Research Analysis
Note: F refers to Forecasted Numbers
The Philippines Dialysis Medical Devices market has been defined as the total spending made on dialysis equipment (Dialysis machines) and dialysis consumables by all the end users involved in the segment

Note: Future Projections for Dialysis Medical Devices segment has validated by Industry professionals operating under this Industry

Cancer/Radiation Therapy (Equipment + Consumables) Market:

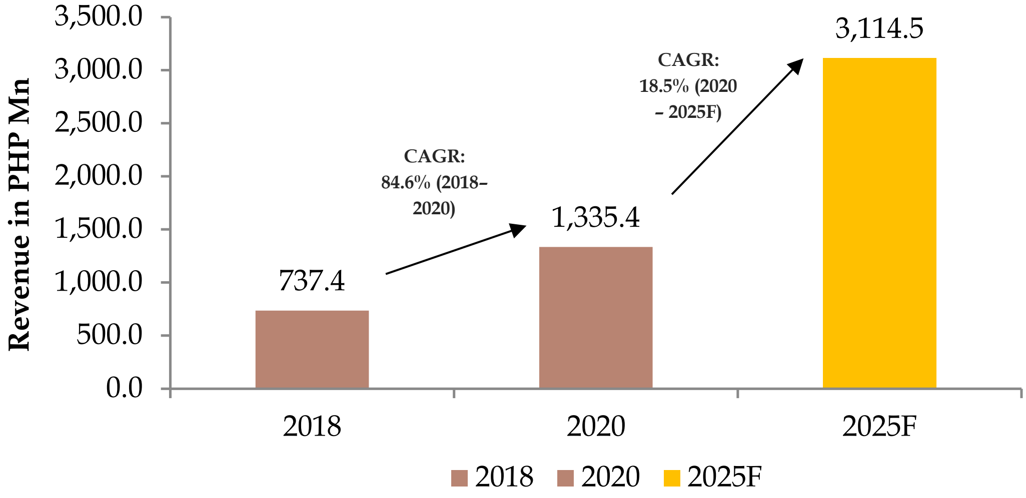
Cancer/radiation therapy medical device manufacturers have entered the Philippines market in the **last 3-4 years** owing to rapid increase in the number of cancer patients. The market grew from **PHP 737.4 million in 2018 to PHP 1,335.4 million in 2020** at a promising **CAGR of 34.6%**. Some of the medical devices include linear accelerator, single-patient physiologic monitoring system, trolley, defibrillator, anesthesia unit, oxygen humidifier, thermoplastic masks dressings, sheets of radiochromic film, infusion pumps, catheter, etc.

Cancer therapy equipments dominated the revenue contribution with a **share** of **95%** in the cancer therapy medical devices market. A small **5% revenue contribution** was through sale of **cancer therapy consumables** in the market **in 2020**. Cancer therapy equipments were **generally sold through dealerships contributing 83.9%** of the overall cancer therapy equipment revenue during 2020.

The key factors propelling the growth include investment on new technology, increasing medical tourism, extending the established product line and rising cases of cancer patients. Major brands which are currently dealing into cancer therapy equipments in the Philippines include Siemens and Elekta. Some of the new technologies introduced in the market include molecular cancer diagnostics, artificial intelligence-based therapy design, DNA cages, precision surgery, pain management, etc.

The number of hospitals, clinics and research centers that provide cancer treatment is growing quickly in India. These healthcare facilities are buying basic and advanced medical devices for cancer therapy, sometimes offering care (primarily at private hospitals) similar to levels found in the West. Demand is also high for portable cancer equipment that can be used in mobile medical units to reach patients in the Philippines rural areas. Given this trend, Cancer/radiation therapy medical device market is anticipated to grow at a **CAGR of 18.5%** for the period of 2020-2025F. The market's revenue for the year 2025F is projected to reach **PHP 3,114.5 million**.

Figure 1-15: The Philippines Cancer/Radiation Therapy Medical Devices Market Size on the Basis of Revenue in PHP Million, 2018, 2020 & 2025F



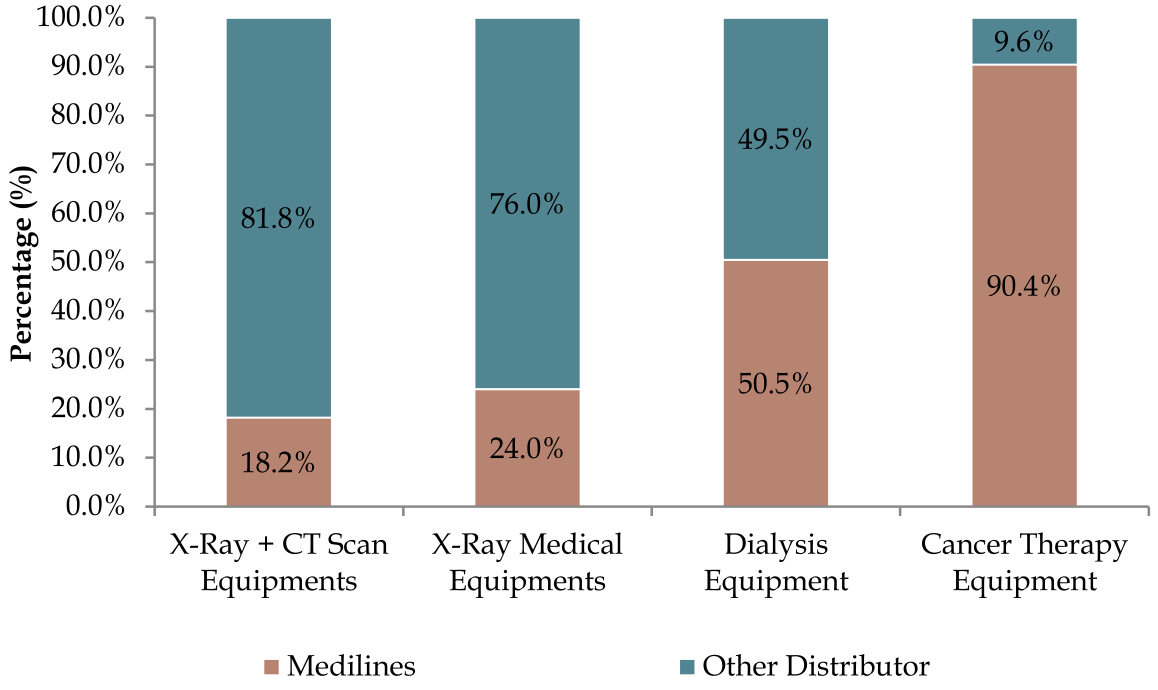
Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021) Interviews with veterans from The Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis
Note: F refers to Forecasted Numbers
Note: Future Projections for Cancer Therapy Medical Devices segment has validated by Industry professionals operating under this Industry

Competition Landscape in the Philippines Medical Device Market:

The competition scenario in the Philippines medical devices market is highly fragmented due to the presence of large number of international companies and local distributors leading to dilution of market share. The international companies including Philips, GE Healthcare, B Braun, Medtronic, BD, Terumo, Fresenius and Siemens distribute their products through authorized distributors located across the country. Medilines, IDS, Zafire, Fernando Medical Enterprise, Health Solution, Lifeline Diagnostics and Patient Care Corporation are the leading medical device distributors in the Philippines. The local companies manufacturing is restricted to production of medical consumables and hospital furniture. The major competitive parameters include product portfolio, price, and distribution network, pricing, after support services and marketing activities.

Medilines out of the distributors present in the market, has established its leadership positioning in the categories where they operate. Out of the categories including Diagnostics equipment, Dialysis and Cancer therapy, Medilines has been the clear individual leader in the distributor segment.

Figure 1-16: Market Share of Medilines in the Philippines Medical Devices Market across Multiple Categories (X-Ray + CT Scan, X-Ray Equipments, Dialysis and Cancer Therapy Equipments) on the Basis of Revenues in Percentage (%), 2020



Source: (The Philippines Medical Devices Market Outlook to 2025, Ken Research, August 2021)
Interviews with The Philippines Medical Device Industry Experts, Ken research Analysis
Note: All the above revenues are inclusive of VAT. The above market share are only for Equipment and exclude Consumables
Note: The above market share is only out of distributor segment for equipment

COVID Impact on the Philippines Medical Device Market:

The COVID-19 pandemic has highlighted the severity of the Philippines' shortfall in healthcare resourcing, particularly in the public healthcare system. Overall, there was a slight decline of **(decline of 1.9% compared to 2019)** witnessed in the medical devices industry size in terms of revenue. The medical consumables market has recorded growth of **18.3% over 2019**in The Philippines owing to the surge in the demand of medical consumables such as surgical masks, N95 masks, PPE Kits, latex or nitrile gloves, face shields, nasal swabs and test kits, needles, syringes, ventilators and many more. However, the medical equipments market has witnessed a decline of 11.3% over 2019, in terms of revenues.

COVID-19 has put the medical device industry on the forefront, with unparalleled demand for some products like diagnostic tests, ventilators, and personal protective equipment (PPE). Purchasing cycles for some equipments used in COVID-19 treatment that requires replacement—such as CT machines, dialysis equipment, or ECMO machines have increased and became part of existing capital expenditure budgets.

With the onset of Covid-19, a multifold increase in the **demand of ventilators and diagnostic imaging devices in the country has been witnessed due to major impact on respiratory systems of humans and CT scan which are being highly used to diagnose the impact on lungs**. It is anticipated that the demand for such medical equipment will grow further in the coming years and aid **Medilines to increase its client portfolio and revenue**.

One area of major change for most companies was the impact on their sales force and service teams. Some degree of restricted access to hospitals and customers was the normal during the pandemic. Most companies engaged physicians and patients differently and some of this may continue in the new world

Post Pandemic Demand Analysis:

The **after effects of Covid-19** recovered patients in some of the severely impacted patients have been observed with multiple organ failures in the body which is expected to support the demand for both **medical imaging devices, dialysis equipments** along with the other medical consumables in the country. Demand for diagnostic medical devices such as **X-Ray, CT Scans, IVD equipments, rapid test kits** is expected to witness maximum surge as healthcare authorities attempted to measure and track the true spread of the virus.

In addition, significant **growth can be witnessed in the cancer therapy equipments** as radiation therapy is used to replace or to delay other treatment modalities with higher infection risk backed by growing number of cancer patients. Patients who have to undergo **dialysis, physiotherapy and chemotherapy prefer health care services at home** which would eventually boost the demand for medical equipments. **Peritonial dialysis**, **automated blood pressure monitors, weighing scales, pulse oximeter** along with **portable and wearable dialysis devices** will also see traction in the near future.

The location and structure of care delivery is likely to change for many companies. This poses new challenges as sales teams adapt to effectively incorporate the appropriate pricing and contracts to support the changes in care services and delivery. Marketing teams will likely continue to us the digital tools developed and scaled during the pandemic, enabling some companies to thrive in the longer term.

2. Research Methodology

2.1. Market Definitions

Philippines Medical Devices Market: This includes the total spending by hospitals and other end users (hospitals, Clinics and Diagnostic Lab Centers and other healthcare institutions) on Medical Consumables Products, Diagnostic Imaging Products, Dialysis Machine, Cardiac Device, Respiratory Products, Hospital Furniture, Auxiliary Devices, Dental and Orthopedic Products, Ophthalmic Devices and other devices in Philippines at trader/distributor price. Imports and domestically manufactured devices have been considered in the market.

Direct Sales: Direct distribution of medical devices primarily represents the sale of medical devices by manufacturers directly to the customer without the help of intermediaries.

Distributor Mediated: Retail distribution primarily represents the sale of medical devices through intermediaries which in turn sell the products to the end customers. Products set in retail make their way to consumers through several intermediaries, including wholesalers and distributors.

Table 2-1: Type of Medical Devices in Philippines Medical Device Market

Particulars	Type of Medical Devices
Medical Consumables	• Syringes, Needles and Catheters • Bandages and Dressings • Sutures • Ostomy • Catgut • Intravenous Admini Sets • Surgical Gloves
Diagnostic Imaging Products	• X-ray Based Products • Ultrasound • CT Scan • MRI • Electro diagnostic apparatus (Functional Examination) • ECG • Product based on UV or infrared application • Products based on Alpha, Beta , Gamma Radiation
Dialysis Machine	• Dialysis Equipment • Product used to dialysis(purify) blood by removing excess water and waste products
Cardiac Device	• Angioplasty Device • Cardiac Rhythm Management

	• ICD • Implants • Pacemakers • Heart-Lung Machines • Valves
Respiratory Products	• Nebulizers • Humidifier • Oxygen Concentrator • Airway Pressure devices • Ventilators • PFT (pulmonary Function Test) • Baloon Test • Oximeters • Partial Pressure Measurement • Respiratory Consumables are not included
Hospital Furniture	• Medical, surgical, dental or veterinary furniture • Operating Tables • Examination Tables • Hospital Beds with Mechanical Fittings and Dentists' Chairs; • Barbers' Chairs and Similar Chairs having Rotating as well as both Reclining and Elevating movement • Other parts of Furniture
Auxiliary Devices	• Hearing Aids • Artificial body parts (excluding artificial teeth and joints) • Implants
Dental and Orthopedic Products	• Orthopedic Appliances • Crutches • Surgical Belts • Trusses • Splints and other fracture appliances • Artificial teeth • Dental Fittings • Dental appliances
Ophthalmic Devices	• Ophthalmoscope • Tonometer • Laser
Cancer Therapy Equipment	• Linear Accelerator • Cyclotron • Brachytherapy.
Others	• Aesthetic Devices • Physiotherapy devices instruments • IV Diagnostics • Other appliances for medical use

Source: Ken Research Analysis

Hospitals: an institution providing medical and surgical treatment and nursing care for sick or injured people. Both the Private and the Public hospitals are included in the definition of Hospitals

Clinics: an establishment or hospital department where outpatients are given medical treatment or advice, especially of a specialist nature.

Diagnostic Lab Center: A medical laboratory or clinical laboratory is a laboratory where clinical pathology tests are carried out on clinical specimens to obtain information about the health of a patient to aid in diagnosis, treatment, and prevention of disease.

Home Healthcare: Home health care is the medical care provided in a patient's home. Home health care includes broad care given by skilled medical professionals, including skilled nursing care, physical therapy, occupational therapy and speech therapy. Home health care also includes skilled, non-medical care, such as medical social services or assistance with daily living from a highly qualified home health aide.

Telemedicine Centers: Telemedicine is the remote delivery of healthcare services, such as health assessments or consultations, over the telecommunications infrastructure. It allows healthcare providers to evaluate, diagnose and treat patients using common technology, such as video conferencing and smart phones, without the need for an in-person visit.

2.2. ABBREVIATIONS

USD: US Dollars
OTC: Over-The-Counter
TB: Tuberculosis
WHO: World Health Organization
CAGR: Compound Annual Growth Rate
MOH: Ministry of Health, Philippines
ASEAN: Association of Southeast Asian Nations
PDAF: Priority Development Assistance Fund
PSCO: Philippine Charity Sweepstakes Office
OTC: Over the Counter
DOH: Department of Health
HUC: Highly Urbanized Cities
NCR: National Capital Region
OPD: Out Patient Department
PCAHO: Philippine Council on Accreditation of Healthcare Organizations
ISO: International Organization for Standardization

NGO: Non-Governmental Organization
ICU: Intensive Care Unit
VSMMC: Vicente Sotto Memorial Medical Center
IRB: Institution Review Board
TB: Tuberculosis
DOTS: Directly Observed Treatment, Short-Course
HFEP: Health Facilities Enhancement Program
OSEC: Office of Secretary

2.3. Market Size and Modeling

CONSOLIDATED RESEARCH APPROACH

Hypothesis Creation: The research team has first framed a hypothesis about the market through analysis of existing industry factors obtained from magazines, journals, broker reports, investor presentations and annual reports of major companies and several articles. The team has used both public and proprietary databases to define and collect each market data point such as overall market size, segmentations and estimated future growth.
Hypothesis Testing: The research team conducted computer assisted telephonic interview (CATI) with several industry professionals including decision makers in medical devices market. The industry professionals included several retailers, wholesalers, importers and distributors of medical devices and other higher level authorities. The analyst at Ken Research collated their insights on the market onboard and to seek justification to the hypothesis framed by the team. Additionally several B2B clients from different sectors including government offices, clinics, diagnostic centers, and hospitals in the ecosystem have been interviewed to understand their perspectives, needs, requirements and the prices they are willing to pay for procuring medical devices.
Sanity Checking: General consensus on data collected from primary research and public and proprietary databases has been reached by conducting in-house decision tree analysis of the data points available and by comparing it with macro-economic factors. Data has been collected and verified through cross-sanity checking between primary and secondary sources. Secondary data sources include the analysis of existing industry factors, obtained from company reports and from magazines, journals and online articles. The secondary data sources are used to form the initial perception and contention on several forces playing their role in determining the future growth in the industry.

Future Forecasting via Poll Opinions and Statistical Tools: Multi-Factor regression and scenario analysis was conducted on the lag variables i.e. on the historical market size of the industry by identifying the independent and quantifiable variables directly affecting the market. The forecasting was done by using SPSS statistical tools. The variables were checked for multi-co-linearity and other bias that could be present in the model. The conclusion from the regression was then double-checked by conducting poll opinions. Structured interviews were conducted through telecom with several industry veterans. These interviews helped the research team to authenticate the data collected from secondary data sources and to reject or accept the hypothesis regarding the future projections.

Interpretation and Proofreading: The final analysis was then interpreted in the research report by our expert team well versed with the Medical Device Sector.

MARKET SIZING – MEDICAL DEVICES MARKET

- We have collated data on imports for medical devices market in the country.
- After conducting CATIs with industry experts and management of the leading medical device manufacturers and traders in Philippines, we were able to get import share of the total customer expenditure on medical devices in the country
- We have also applied gross margin which is charged by the traders/importers on the imported medical devices to estimate the sales value of imported medical devices at retail value
- Additionally, our team has also reviewed several industry publications and proprietary databases to validate the data. We have seek information from Ministry of Health on overall spending made by healthcare units on medical equipment to validate the data
- We have also interviewed management of multiple companies to understand the revenues of certain leading medical devices companies in the country to sanity check the market.

Limitations: The companies which provide medical devices also do offer AMC service to the end users and also generate revenues from repair and maintenance. However, we have not considered this revenue stream into our model

VARIABLES (DEPENDENT AND INDEPENDENT)

Reasons for the selection of the independent variables:

- **Total Healthcare Expenditure in Philippines in Million Pesos**: Increase in budget allocation on healthcare will lead to advanced healthcare infrastructure in the country which will result in direct procurement of devices and will also attract more number of medical tourists and both inbound and outbound patients.

- **Number of Hospitals and Clinics**: An increase in number of healthcare centers will lead to increase accessibility of medical device in the country which will positively affect the revenue of Philippines medical device market
- **Number of Bronchitis Morbidity Cases**: Increase in number of Bronchitis will lead to an increase demand for respiratory products which will positively affect the overall market revenue.
- **Diabetes Prevalence**: Increase in diabetic population will lead to an increase in demand for insulin syringes for the treatment of diabetes. This will positively affect the overall market revenue.

The report applies Correlation and Regression analysis methods to forecast the future of the Philippines Medical Device Market. The capabilities of SPSS and predictive analytics software have been leveraged to determine the relevant indicators used for forecasting this industry.

In the present case, medical device market revenue has been taken as the dependent variable and other variables such as Total health Expenditure in Philippines in Million Pesos, Number of Hospitals and Clinics, Number of Bronchitis Morbidity Cases and Diabetes Prevalence have been taken as independent variables.

MULTI FACTOR BASED SENSITIVITY MODEL

The model first identifies the correlation (whether linear or non-linear) between the dependent and independent variables. After calculating the degree and strength of relationship between the variables, the regression model is used to calculate the sensitivity of each factor on the dependent variable. Finally, the expected value and sensitivity of the independent variable is used to determine the future value of dependent variable. However, we have not considered the SPSS value as our forecast values. For future value, we conducted several telephonic interviews with industry participants and have calculated value on the basis of responses

Table 2-2: Correlation Matrix for Philippines Medical Device Market

		Revenues in USD Million	Total Healthcare Expenditure in Philippines (Million Pesos)	Number of Hospitals and Clinics	Number of Bronchitis Morbidity Cases	Diabetes Prevalence (%)
Revenues in USD Million	Pearson Correlation	1	.972	.948	-.973	.936
	Sig. (2-tailed)		.001	.004	.006	.006
	N	6	6	6	6	6
Total Healthcare Expenditure in Philippines in Million Pesos	Pearson Correlation	.972	1	.993	-.970	.864
	Sig. (2-tailed)	.001		.000	.001	.027
	N	6	6	6	6	6
Number of Hospitals and Clinics	Pearson Correlation	.948	.993	1	-.973	.851
	Sig. (2-tailed)	.004	.000		.001	.032
	N	6	6	6	6	6
Number of Bronchitis Morbidity Cases	Pearson Correlation	-0.937	-.970	-.973	1	-.835
	Sig. (2-tailed)	.006	.001	.001		.038
	N	6	6	6	6	6
Diabetes Prevalence (%)	Pearson Correlation	.936	.864	.851	-.835	1
	Sig. (2-tailed)	.006	.027	.032	.038	
	N	6	6	6	6	6

Source: Ken Research Analysis
Notes: Correlations are significant at the 0.05 level (2-tailed).

From the correlation table, we can conclude that:

- Total Healthcare Expenditure in Philippines in Million Pesos on medical device in Philippines has been the strongest factor with a correlation value of 0.972
- Number of Hospitals and Clinics of Philippines has influenced the medical device market of Philippines positively with a positive correlation value of 0.948
- Diabetes Prevalence in percentage is also a strong factor impacting the Philippines medical device market with a correlation value of 0.936

- Number of Bronchitis Morbidity Cases has a negative correlation with the Philippines medical device with a correlation value of -0.937

REGRESSION MATRIX

A multiple regression model has been used through SPSS statistical tool that analyzes the multiple correlation coefficients, R, its square, and an adjusted version of this coefficient as summary measures of model fit. Further, R-Square is used to explain the validity of the independent variables. R Square, also known as the coefficient of determination, represents the proportion of total variation in the dependent variable explained by the variation in the independent factors.

Applying multiple regression analysis to a set of data leads to regression coefficients, one for each explanatory variable. These coefficients give an estimated change in the response variable associated with a unit change in the corresponding explanatory variable, conditional on the other explanatory variables remaining constant.

Table 2-3: Regression Coefficients Output for Philippines Medical Devices Market

Model	Un Standardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	63634.182	3491.041	
Total Healthcare Expenditure in Philippines in Million Pesos	.002	.000	1.795
Number of Hospitals and Clinics	-36.350	1.905	-1.243
Number of Bronchitis Morbidity Cases	.000	.000	-.117
Diabetes Prevalence (%)	409.558	16.743	.346

Sauce: Ken Research Analysis.
Dependent Variable: Philippines Medical Device Market.

FINAL CONCLUSION

With regard to medical device market, the conclusion regarding the expected value of dependent variable is determined by using time series analysis, primary research and opinions polls since the regression model has been rendered inaccurate with high standard deviation. The time series analysis enables us to filter out the possible noise in each computation method and help us to derive the best possible future projections. However, the study of survey did not support the SPSS results and the final values were decided on the basis of interviews with industry professionals.

3. Ecosystem of Manufacturers and Distributors in Philippines Medical Devices Market

Table 3-1: Philippines Medical Device Ecosystem of Leading Manufacturers and Distributors

Major Entities	Major Companies
Manufacturers	• Philips • GE • Siemens • DRTech • Toshiba • Fuji • Vieworks • Listem • Vila • Drgem • Bontech • Hologic • Genoray • Technix • Shimadzu • B.Braun • Johnson and Johnson • Smith and Nephew • Fresenius • Medtronic • Baxter International • NIPRO Corporation • Terumo Corporation • Dialife • 3M • Medikit • CMA Microdialysis • Medionics International • Renalyx • Toray Medical Co. Ltd. • Asahi Kasei Medical • Varian Medical Systems • Accuray Incorporated • Elekta • Hitachi • Sumitomo
Distributors	• DK Medical System • Philippines Medical System

- Medilines
- Brodlie Medical
- Berovan Marketing, Inc.
- Patient Care Corporation
- Transmedic Group
- RG Meditron Incorporated
- Zafire Distributors
- Zuellig Pharma
- Metro Drugs Inc
- RBGM Medical Express Sales, Inc.
- Saviour MedDevices Incorporated
- Health Solution Enterprises
- IDS Medical System
- Zafire
- Fernando Medical Enterprise
- Shimadzu
- Lifeline Diagnostic Supplies
- Cosmo Medical
- Biosite
- Carestream
- Medicotek
- Biosyn
- Progressive Medical Corporation
- Medical One
- NPK Medical Trading
- Aljeron Medical Enterprise
- Technomed

Source: Ken Research Analysis

4. Macro-Economic Variables in Philippines Medical Devices Market

4.1. Macro-Economic Indicators in Philippines, 2015 – 2025

Table 4-1: Philippines Macroeconomic Indicators including Country's Geographic Overview, Country's Overview, Economic Overview, Impact of Covid-19 on Country's Economy and Country's Healthcare Overview

Particulars	Rationale
Country's Geographic Overview	• The Philippines is an archipelago in Southeast Asia with 7,641 islands, only about 2,000 of which are inhabited. It is bordered by the West Philippine Sea on the west and the Pacific Ocean on the east, with Malaysia to the south-west, Indonesia to the south, Vietnam to the west, and mainland China to the north (World Atlas, 2018). It is grouped into three geographic areas: Luzon, Visayas and Mindanao.
Country's Overview	• The Philippines is one of the most dynamic economies in the East Asia Pacific region. With increasing urbanization, a growing middle class, and a large and young population, the Philippines' economic dynamism is rooted in strong consumer demand supported by a vibrant labour market and robust remittances. Business activities are buoyant with notable performance in the services sector including business process outsourcing, real estate, tourism, and finance and insurance industries.
Economic Overview	• The Philippines have a sound economic fundamentals and a globally recognized competitive workforce which strengthen the growth momentum. Having sustained average annual growth of 6.4% during the period 2010 - 2019 from an average of 4.5% during 2000 – 2009 in Real terms, the country is on its way from a lower middle-income country with a gross national income per capita of PHP 200.1 thousand in 2020P to an upper middle-income country (per capita income range of PHP 204.1 thousand – PHP 632.4 thousand) in the near term. **(Source: World Bank)**
Impact of Covid-19 on Country's Economy	• Real economic growth, however, has been challenged by the COVID-19 (coronavirus) pandemic and the strict community quarantine measures imposed in the country. Growth contracted significantly in 2020, driven by significant declines in consumption and investment growth, and exacerbated by the sharp slowdown in exports, tourism, and remittances.

	• Economic growth is expected to rebound gradually in 2021-2022 assuming a containment of the virus domestically and globally, and with more robust domestic activity bolstered by greater consumer and business confidence and the public investment momentum. • The Philippine's economy contracted by 4.2% Y-o-Y in the first quarter of 2021 amid prolonged implementation of containment measures. The country registered the worst growth performance among peers in the region such as Thailand (-2.6%), Indonesia (-0.7%), Malaysia (-0.5%), and Vietnam (4.5%). The growth contraction was fuelled by weak domestic demand, driven by the combination of containment measures, weak confidence, and rising inflation. **(Source: World Bank)**
Country's Health Care Overview	• **Overview:** The health sector in the Philippines continues to change after a decade of increased public spending on health care. The sector is characterized by a well-developed private health care sector next to the public sector. The sprawling country of over 7,000 islands has a decentralized system of government which is reflected in the governance and structure of the health care system. The **National Capital Region (NCR) and Luzon** are the economic heart of the country and also contain the **largest share of both public and private healthcare infrastructure**. • **Number of Hospitals:** In Philippines, there are about 1,915 hospitals in the region as of 31st December 2020, out of which 59.9% are privately owned and remaining 40.1% are owned and managed by the government. • **Relatively Young Population in the Country:** The population of Philippines was estimated to be **109.9 million in 2020** out of which about **65% of population is below 35 years of age** which is relatively young population. The young population is still growing and pays almost as much as the government directly to public and private providers as out-of-pocket payments primarily for **consultations, diagnostics and lab tests**. • The **Philippine's government has allocated PHP 161.4 Billion to the health sector in the year 2020, a 12% increase from 2019's budget for the health sector**. About half, PHP 65.6 billion allocated for the Philippine Health Insurance Corporation, whilst PHP 55.5 billion for hospital services, and the remaining to public health services in the country. • The budget also allocated **PHP 7,566.8 million for the National Immunization Program, PHP 40,860.5 million for the Health Facilities Operations Program, and PHP 18,664.6 million** for the purchase of drugs, medicines, and vaccines for distribution to various government health facilities in the country.

- In 2021, as per the healthcare ranking provided by Numbeo, **Philippines is positioned at 37th position in the global healthcare ranking with accounting healthcare index of 67.2 and 120.1 healthcare expenditure** index. Whereas, Taiwan accounting the 1st position in the overall healthcare ranking across globe with 86.38 and 158.92 healthcare index and healthcare expenditure index respectively.

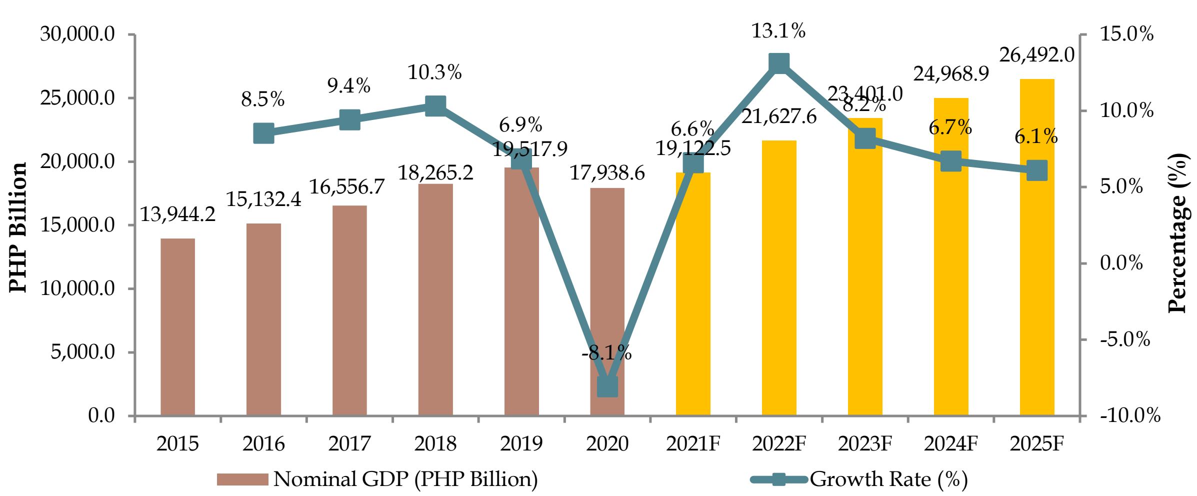
Source: Industry Articles, Philippine Statistics Authority, Ken Research Analysis

REAL AND NOMINAL GDP, 2015 – 2025

Philippines Nominal GDP (in PHP Billion) grew at a CAGR of 5.2% from PHP 13,944.2 Billion in the year 2015 to PHP 17,938.6 billion in the year 2020. On the other hand, Philippines Real GDP increased at a CAGR of 3.2% during the period 2015 – 2020. The Philippines Real GDP grew from PHP 14,990.9 billion in 2015 to PHP 17,527.2 billion in 2020.

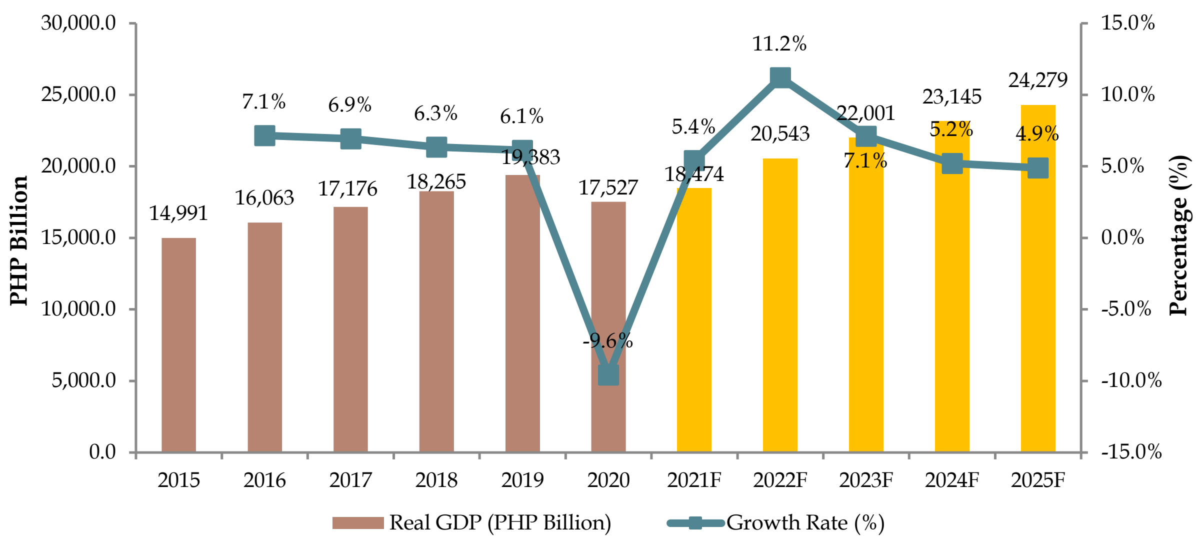
In the near future, it is anticipated that the rising private consumption and services as major growth drivers, further supported by an improvement in consumer spending and investment amid fiscal support are expected to drive nominal and real GDP.

Figure 4-1: Philippines Nominal GDP in PHP Billion and Growth Rate in Percentage (%), 2015 – 2025F



Source: Philippine Statistics Authority, Ken Research Analysis
Note: F refers to Forecasted Numbers

Figure 4-2: Philippines Real GDP in PHP Billion (Constant Price 2018) and Growth Rate in Percentage (%), 2015 – 2025F



Source: Philippine Statistics Authority, Ken Research Analysis
Note: F refers to Forecasted Numbers

Major Regions contributing in Country's GDP: The major regions such as National Capital Region of the Philippines contributed highest share in the country's GDP accounting ~32% share in the year 2020, followed by CALABARZON (~14%), Central Luzon (~10%), are expected to improve affordability, leading to further sustainable demand growth for healthcare services and translate into healthy growth in the medical device industry. Moreover, with rising urban population, high awareness for preventive healthcare is expected to drive the consumption of the wellness segment and the diagnostic services market in the country.

Table 4-2: Philippines Nominal GDP Split on the Basis of Region (National Capital Region, CALABARZON, Central Luzon, Central Visayas, Davao Region, and others) in PHP Billion, 2015 - 2020

Region Wise (Nominal GDP in PHP Billion)	2015	2016	2017	2018	2019	2020
National Capital Region	4,532.4	4,928.2	5,327.1	5,814.4	6,294.2	5,797.1
CALABARZON	2,076.8	2,206.3	2,423.1	2,707.0	2,865.8	2,565.1
Central Luzon	1,511.2	1,640.7	1,860.3	2,062.4	2,184.8	1,862.9
Central Visayas	889.0	977.5	1,067.3	1,180.9	1,270.6	1,164.7

Davao Region	602.9	674.1	748.5	841.4	922.6	889.5
Northern Mindanao	609.0	679.4	737.9	821.1	885.2	861.5
Western Visayas	668.0	720.6	791.3	860.1	919.2	850.7
I locos Region	449.4	490.9	527.8	587.6	630.3	598.0
Bicol Region	395.3	431.8	466.0	522.0	560.8	515.8
Soccsksargen	354.8	381.7	420.1	454.3	474.9	467.9
Eastern Visayas	324.9	376.6	397.4	444.4	455.5	413.3
Zamboanga Peninsula	300.9	322.3	344.7	379.4	399.1	394.6
Cagayan Valley	303.1	323.5	358.7	385.1	399.4	367.1
MIMAROPA Region	274.6	287.3	321.9	370.7	375.6	342.0
Cordillera Administrative Region	243.7	255.6	280.8	308.3	322.1	296.5
Caraga	235.2	251.5	273.1	290.6	302.9	291.7
Bangsamoro Autonomous Region In Muslim Mindanao	172.9	184.6	210.7	235.4	254.8	260.3
Total	**13,944.2**	**15,132.4**	**16,556.7**	**18,265.2**	**19,517.9**	**17,938.6**

Source: Philippine Statistics Authority, Ken Research Analysis

Table 4-3: Philippines Real GDP on the Basis of Region (National Capital Region, CALABARZON, Central Luzon, Central Visayas, Davao Region, and others) in PHP Billion, 2015 - 2020

Region Wise Real GDP in PHP Billion	2015	2016	2017	2018	2019	2020
National Capital Region	4,865.1	5,216.1	5,507.7	5,814.4	6,224.1	5,596.4
CALABARZON	2,196.3	2,346.8	2,527.7	2,707.0	2,831.6	2,535.3
Central Luzon	1,619.1	1,747.6	1,929.2	2,062.4	2,183.8	1,880.1
Central Visayas	958.6	1,029.6	1,102.8	1,180.9	1,254.1	1,129.8
Davao Region	660.5	721.6	785.1	841.4	900.9	832.1
Western Visayas	715.5	758.0	820.8	860.1	913.9	825.4
Northern Mindanao	670.4	723.3	766.4	821.1	867.4	822.6
Ilocos Region	486.1	525.4	554.7	587.6	630.4	581.9
Bicol Region	431.9	462.8	488.4	522.0	564.9	517.5
Soccsksargen	377.2	394.1	425.0	454.3	470.0	450.0
Eastern Visayas	352.7	403.0	415.3	444.4	469.3	433.4
Zamboanga Peninsula	329.3	346.0	356.8	379.4	396.9	376.0
Cagayan Valley	325.7	341.5	368.3	385.1	411.5	370.9
MIMAROPA Region	306.0	321.2	341.5	370.7	386.8	357.4
Cordillera Administrative Region	259.5	266.7	291.8	308.3	321.7	289.9
Caraga	245.4	260.5	276.3	290.6	306.3	284.1
Bangsamoro Autonomous Region In Muslim Mindanao	191.8	198.4	218.5	235.4	249.2	244.4
Total	**14,990.9**	**16,062.7**	**17,176.0**	**18,265.2**	**19,382.8**	**17,527.2**

Source: Philippine Statistics Authority, Ken Research Analysis

POPULATION OF PHILIPPINES – BY AGE GROUP, 2015 – 2025

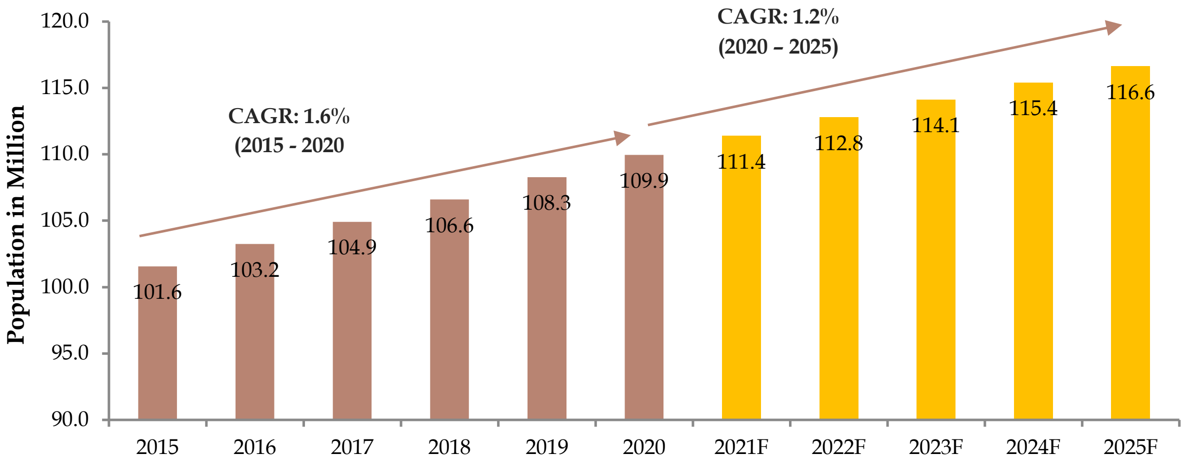
Filipinos population was reported at 109.9 million as on December 31st 2020. Philippines population grew at a CAGR of 1.6% from 2015 to 2020. In the future, Population level is expected to grow at a CAGR of 1.2% during 2020 and 2025 to reach 116.6 million by 31st December 2025.

In Philippines, 39.6% of the population is under the age bracket of (0 – 19 years). Whereas, 43.1% of population lies under the age bracket of (20 – 49 years) which implies that the majority of the population is a working population. They are well aware of the current healthcare facilities and healthcare insurance programmes prevailing in the country. Moreover, population under this age bracket largely opts for **private hospitals for any healthcare check-ups (routine or for any specific disease), also they contribute a very high share in the out of pocket healthcare expenditure in Philippines**. Since, these people are the foremost user of the medical facilities in the country as they either pay on behalf of their children or for their elder one's in their family, for their healthcare care check-ups and healthcare treatments.

On the other hand, **19.8% of the population comes under the age bracket of (50 – 80+ years), which largely requires hospitals to get their treatment done for diabetes, chronic diseases, breathing issues, Orthopaedic surgeries** and others. Population in 2025 is expected to be dominated by the age category (20 – 49 years) accounting for 43.8% and age category (50 – 80+ years) accounting 21.0% in the overall country's population.

Therefore, it is expected that the **ageing population base in Philippines and its predisposition to various chronic diseases will create a huge opportunity for the healthcare sector in the near future** and pose a significant demand on the healthcare infrastructure to provide healthcare access for all.

Figure 4-3: Philippines Population in Million and Growth Rate in Percentage (%), 2015 – 2025F



Source: Philippine Statistics Authority, Ken Research Analysis
Note: F refers to Forecasted Numbers

Table 4-4: Philippines Population on the Basis of Age (0-4 Years, 5-9 Years, 10 – 14 Years, 20 – 24 Years, and Others) in Million, 2015 – 2025F

Age Group	2015	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F
0-4	11.3	11.4	11.4	11.4	11.5	11.5	11.5	11.5	11.5	11.5	11.5
(5-9)	10.7	10.8	10.9	11.0	11.1	11.2	11.3	11.3	11.4	11.4	11.5
(10-14)	10.3	10.4	10.4	10.5	10.5	10.6	10.6	10.6	10.6	10.6	10.6
(15-19)	10.1	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2	10.2
(20-24)	9.6	9.7	9.8	9.9	10.0	10.0	10.2	10.3	10.4	10.5	10.6
(25-29)	8.3	8.6	8.8	9.0	9.3	9.5	9.7	9.9	10.2	10.4	10.6
(30-34)	7.3	7.5	7.7	7.9	8.0	8.2	8.4	8.5	8.6	8.8	8.9
(35-39)	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7
(40-44)	5.9	6.0	6.2	6.3	6.4	6.6	6.7	6.8	6.9	7.0	7.1
(45-49)	5.4	5.4	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.2
(50-54)	4.5	4.7	4.8	4.9	5.1	5.2	5.3	5.4	5.6	5.7	5.8
(55-59)	3.7	3.8	3.9	4.1	4.2	4.3	4.5	4.6	4.8	4.9	5.0
(60-64)	2.8	2.9	3.0	3.2	3.3	3.4	3.6	3.7	3.9	4.0	4.2
(65-69)	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	3.0	3.1
(70-74)	1.2	1.3	1.4	1.5	1.6	1.7	1.7	1.8	1.9	1.9	2.0
(75-79)	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1	1.1
80+	0.8	0.8	0.8	0.9	0.9	1.0	0.9	0.9	0.8	0.7	0.6
Total	**101.6**	**103.2**	**104.9**	**106.6**	**108.3**	**109.9**	**111.4**	**112.8**	**114.1**	**115.4**	**116.6**

Source: Philippine Statistics Authority, 2010 Census-based Population Projections in collaboration with the Inter-Agency Working Group on Population Projections, Ken Research Analysis
Note: F refers to Forecasted Numbers

Table 4-5: Philippines Population on the Basis of Age (0-4 Years, 5-9 Years, 10 – 14 Years, 20 – 24 Years, and Others) in Percentage (%), 2015 – 2025F

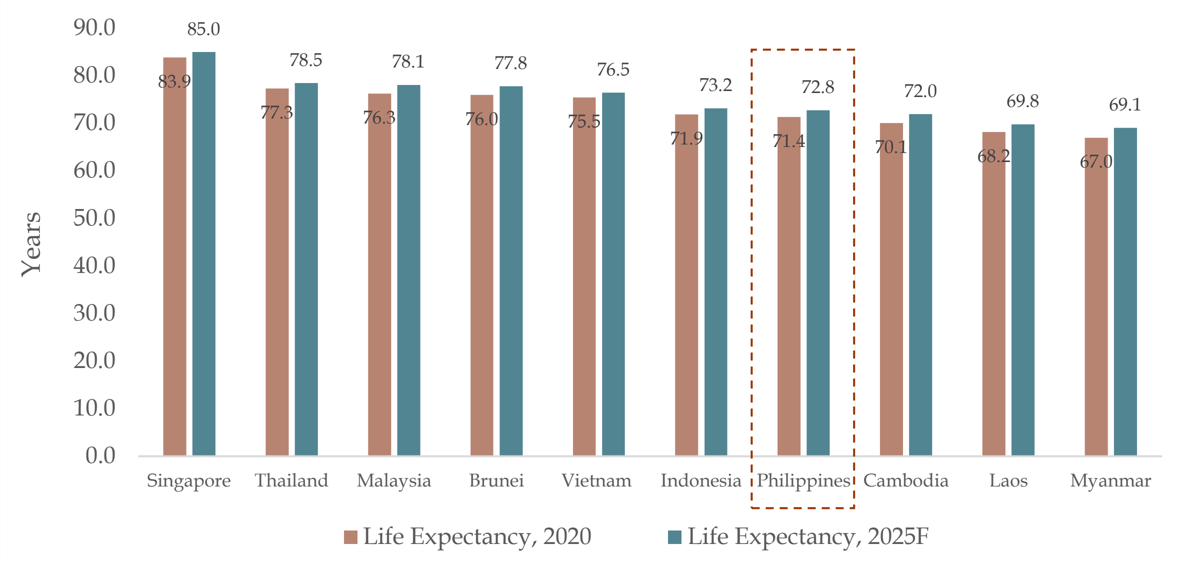
Age Group	2015	2016	2017	2018	2019	2020	2021F	2022F	2023F	2024F	2025F
0-4	11.2%	11.0%	10.9%	10.7%	10.6%	10.4%	10.3%	10.2%	10.1%	10.0%	9.9%
(5-9)	10.5%	10.4%	10.4%	10.3%	10.3%	10.2%	10.1%	10.0%	10.0%	9.9%	9.8%
(10-14)	10.1%	10.0%	9.9%	9.8%	9.7%	9.6%	9.5%	9.4%	9.3%	9.2%	9.1%
(15-19)	10.0%	9.8%	9.7%	9.6%	9.4%	9.3%	9.2%	9.1%	9.0%	8.8%	8.7%
(20-24)	9.5%	9.4%	9.4%	9.3%	9.2%	9.1%	9.1%	9.1%	9.1%	9.1%	9.1%
(25-29)	8.2%	8.3%	8.4%	8.5%	8.6%	8.7%	8.7%	8.8%	8.9%	9.0%	9.1%
(30-34)	7.2%	7.3%	7.3%	7.4%	7.4%	7.5%	7.5%	7.5%	7.6%	7.6%	7.6%
(35-39)	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%
(40-44)	5.8%	5.9%	5.9%	5.9%	5.9%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
(45-49)	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.4%
(50-54)	4.5%	4.5%	4.6%	4.6%	4.7%	4.7%	4.8%	4.8%	4.9%	4.9%	5.0%
(55-59)	3.6%	3.7%	3.8%	3.8%	3.9%	3.9%	4.0%	4.1%	4.2%	4.2%	4.3%
(60-64)	2.7%	2.8%	2.9%	3.0%	3.1%	3.1%	3.2%	3.3%	3.4%	3.5%	3.6%
(65-69)	1.9%	2.0%	2.1%	2.1%	2.2%	2.2%	2.3%	2.4%	2.5%	2.6%	2.6%
(70-74)	1.2%	1.3%	1.3%	1.4%	1.5%	1.5%	1.5%	1.6%	1.6%	1.7%	1.7%
(75-79)	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%
80+	0.8%	0.8%	0.8%	0.8%	0.8%	0.9%	0.8%	0.8%	0.7%	0.6%	0.5%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Philippine Statistics Authority, 2010 Census-based Population Projections in collaboration with the Inter-Agency Working Group on Population Projections, Ken Research Analysis
Note: F refers to Forecasted Numbers

LIFE EXPECTANCY (COMPARED TO ASEAN REGION), 2020 AND 2025F

Currently, life expectancy rate in Philippines is 71.4 years in the year 2020 and it is expected to reach 72.8 years by 2025. On the other hand, life expectancy rate for other countries in the ASEAN Region stood at 76 (Brunei), 70.1 (Cambodia), 71.9 (Indonesia), 68.2 (Laos), 76.3 (Malaysia), 67.0 (Myanmar), 83.9 (Singapore), 77.3 (Thailand), 75.5 (Vietnam). This implies that Philippines have a better life expectancy rate comparatively to other ASEAN Region such as Cambodia, Laos, and Myanmar. Moreover, it is anticipated that in the near future there will be a growth in life expectancy rate of Philippines, backed by improving healthcare infrastructure and improvement in lifestyle

Figure 4-4: Life Expectancy Rate in Philippines with ASEAN Region on the Basis of Years, 2020 and 2025F



Source: Health Ministries of Respective Counties, Ken Research Analysis
Note: F refers to Forecasted Numbers

POPULATION BY INCOME SEGMENT, 2018, 2020 AND 2025

Filipinos population was reported around 106.5 million in the year 2018. However, on the basis of income category about 38.2% of people were falling under the category of low income (but not poor), and middle income accounted only 10.5% of the population, whereas upper income and rich income group combined accounted only 4.8% of over population of the country in 2018.

During **2020, overall population of the country reached to 109.9 million** and a significant increase has been observed in the percentage share of population falling under the **income category of upper income and rich class as it accounted about 5.7%, and also the middle income population increased and reached to 11.7% in 2020**. Moreover, the **income group (poor) accounted just 14.5% of overall population in 2020 from that of 17.3% in 2018**. Therefore, this indicates that the country's working population has increased due to which the shift in income groups have been seen. Also, it indicates that in **Philippines now majority ~85% of the population is**

above the income group category of being poor, therefore they can easily afford the healthcare facilities and expenses. In addition to that, it is even observed that the young and population falling under the income category upper income and rich largely uses the private hospitals for healthcare treatments and spends higher share in the out of pocket expenditure for healthcare expenses (hospital or medical diagnostic expenses). Therefore, we can anticipate that the rising population under the higher income group will drive the expenditure basket across various categories including the healthcare and the diagnostic industry.

Table 4-6: Cross Comparison of Population by Income Segment on the Basis of Definition, Range of Monthly Family Income, Number of Households in Million, Number of Population in Million, 2018 and 2020

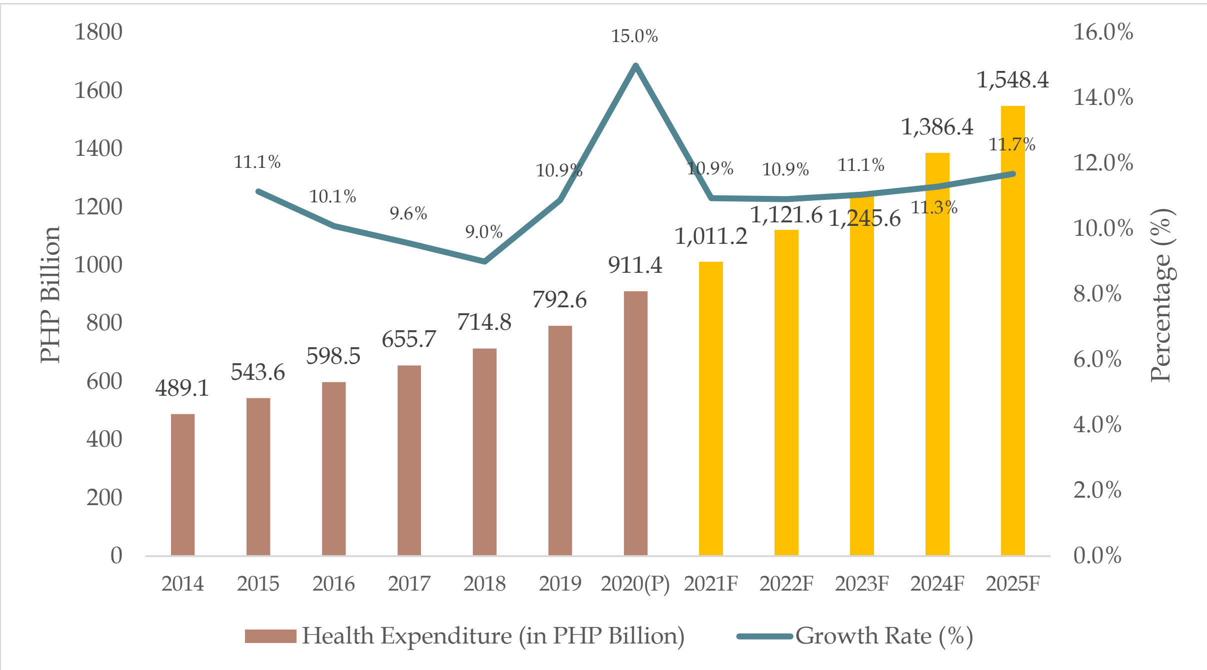
Income Group	Definition	Range of Monthly Family Income (Size of 5 Members), 2018	Number of Households (Mn), 2018	Number of Population (Mn), 2018	Range of Monthly Family Income (Size of 5 Members), 2020	Number of Households (Mn), 2020	Number of Population (Mn), 2020
Poor	Less than Official Poverty Threshold	Less than PHP 11,690/Month	2.9	18.4	Less than PHP 11,690/Month	2.5	15.9
Low Income (Not Poor)	Between Poverty Line and Twice Poverty Line	Between PHP 11,690-23,381/Month	8.4	40.7	Between PHP 11,690-23,381/Month	8.8	42.5
Lower Middle Income	Between Two and Four Times the Poverty Line	Between PHP 23,381-46,761/Month	7.6	31	Between PHP 23,381-46,761/Month	7.9	32.3
Middle Middle Class	Between Four and Seven Times the Poverty Line	Between PHP 46,761-81,832/Month	3.1	11.2	Between PHP 46,761-81,832/Month	3.6	12.9
Upper Middle Income	Between 7 and 12 Times the Poverty Line	Between PHP 81,832-140,284/Month	1.2	3.8	Between PHP 81,832-140,284/Month	1.4	4.3
Upper Income (Not Rich)	Between 12 and 20 Times the Poverty Line	Between PHP 140,284-233,806/Month	0.4	1	Between PHP 140,284-233,806/Month	0.5	1.5
Rich	Above 20 Times the Poverty Line	At least PHP 233,807/Month	0.1	0.36	At least PHP 233,807/Month	0.2	0.5

Source: Family and Income Expenditure Survey (FIES) conducted by the Philippine Statistics Authority, Ken Research Analysis

HEALTHCARE EXPENDITURE IN PHILIPPINES, 2015 – 2025F

The Philippines healthcare expenditure has increased at a CAGR of 10.9% from PHP 489.1 billion in 2014 to PHP 911.4 billion in 2020(P). Moreover, in the near future it is anticipated that the healthcare expenditure will increase at a CAGR of 11.2% during the period 2020 – 2025 and will reach to PHP 1,548.4 billion in 2025. The growing healthcare expenditure in the country will lead to improvement in healthcare infrastructure for public and private facilities, increase in the demand of medical devices and diagnostic equipment, to offer better healthcare facilities in the country.

Figure 4-5: Philippines Healthcare Expenditure in PHP Billion and Growth Rate in Percentage (%), 2014 – 2025F



Source: Philippine Statistics Authority

Note: P refers to Provisional Numbers and F refers to Forecasted Numbers

HEALTHCARE EXPENDITURE SPLIT PER ILLNESS, 2014-2020

The Philippines' Department of Health lists the following diseases with growing incidence rates: hypertension and heart diseases, diabetes and kidney failure, pulmonary and other respiratory diseases, cancer, HIV and AIDS. Most hospital improvements concentrate on specialized services for radiology, cardiac, lung and kidney examinations, and pathology to address the problem. Hospitals are enhancing their pathology services to meet demands for various diagnostic testing, especially for **diabetes, cancer, and HIV/AIDS. Demand for ECGs, CT Scans, X-ray machines, dialysis machines, and other laboratory instruments remain, while dermatology services and clinical aesthetics procedures** continue to grow.

In 2020, Non-communicable diseases such as (Neoplasms, diabetes, cardiovascular diseases and others) accounted highest share of 32.9% in the country's healthcare expenditure majorly due to people in Philippines believe obesity is visual evidence of good economic status.

Filipino population has a habit of overeating, unbalanced and irregular meals, lack of exercise, and self-esteem issues. Being selective about what one eats is not necessarily a priority as in the Filipino culture one must be thankful for the blessings one receives. Food is considered a gift from God. Therefore, people in Philippines are highly exposed to non-communicable diseases and health illnesses.

The Infectious and Parasitic Diseases accounted for 30.3% share in the overall healthcare expenditure. While, Reproductive health accounted 11.2% share and Nutritional Deficiencies accounted 10.0% share in the overall country's healthcare expenditure in 2020.

In Philippines, **PHP 89,764 million has been spent on the cardiovascular diseases in 2020 which has increased at a CAGR of 14.5% during the period 2014-2020; the percentage share of cardiovascular diseases in the overall healthcare expenditure was 9.8% in 2020,** largely due to people have high blood cholesterol, high blood pressure and are diabetic leading to major cause of heart problems among people. Whereas, healthcare expenditure on Endocrine and metabolic disorders (Diabetes) has increased at a CAGR of 9.9% during the above mentioned period and reached up to PHP 7,094 Million.

On the other hand, **Respiratory infections (infectious) accounted healthcare expenditure of PHP 1,12,500 Million in 2020 and in terms of percentage they accounted ~ 12.3% in the overall healthcare expenditure in the country in 2020,** followed by Respiratory Disease (Non-communicable disease) PHP 21,389 Million which accounted 2.3% share in the overall healthcare expenditure.

Philippine's rising expenditure on illnesses such as cardiovascular disease, Diabetes, kidney disease, cancer and pneumonia will lead to surge in the demand of medical equipment's such as diagnostic imaging equipment's, dialysis equipment's, and cancer/radiation therapy equipment's in the near future.

Table 4-7: Philippines Healthcare Expenditure on the Basis of Classification of Diseases and Conditions in PHP Million, 2014 – 2020P

Classification of Diseases/Conditions (PHP Million)	2014	2015	2016	2017	2018	2019	2020(P)
Infectious and parasitic diseases	**118,499**	**129,674**	**142,140**	**207,492**	**167,360**	**245,205**	**276,321**
HIV/AIDS and Other Sexually Transmitted Diseases (STDs)	272	433	517	674	758	393	450
Tuberculosis (TB)	5,429	6,014	9,592	13,358	6,602	7,668	8,340
Malaria	64	310	507	735	163	420	400
Respiratory infections	53,001	56,555	59,070	65,070	71,714	78,333	112,500
Diarrheal diseases	15,080	16,006	17,529	66,702	20,056	21,509	25,300
Neglected tropical	8,536	9,561	10,583	9,045	9,389	9,974	10,230

diseases (dengue)							
Vaccine preventable diseases	19,887	22,025	23,911	27,793	31,170	96,185	86,700
Hepatitis	-	-	-	-	26	24	22
Other and unspecified infectious and parasitic diseases (n.e.c.)	16,231	18,770	20,430	24,114	27,482	30,700	38,430
Reproductive Health	**72,084**	**78,343**	**84,710**	**83,776**	**1,10,807**	**97,681**	**102,323**
Maternal conditions	42,599	42,808	45,733	41,908	63,846	52,741	54,822
Perinatal conditions	19,835	24,056	27,406	30,115	31,213	32,418	33,127
Unspecified reproductive health conditions (n.e.c.)	9,650	11,479	11,571	11,753	15,748	12,522	14,374
Nutritional deficiencies	**56,982**	**62,256**	**68,321**	**77,261**	**85,421**	**88,938**	**91,324**
Non communicable diseases	**165,789**	**189,035**	**204,741**	**190,925**	**238,461**	**238,569**	**300,234**
Neoplasms	14,195	15,862	17,381	14,769	22,978	18,819	17,341
Endocrine and metabolic disorders (diabetes)	4,475	5,148	5,748	6,365	7,094	7,485	7,865
Cardiovascular diseases	39,837	44,056	47,803	52,150	60,994	64,230	89,764
Mental & behavioral disorders, and neurological conditions	2,655	3,612	2,651	2,790	3,286	4,661	5,324
Respiratory diseases	2,997	2,857	3,178	3,599	9,229	9,931	21,389
Diseases of the digestive	2,273	1,951	2,217	2,596	5,782	6,206	4,789
Diseases of the geniro-urinary system (nephritis)	16,618	20,697	22,563	12,731	30,893	20,293	22,345
Sense organ diseases	-	-	-	-	183	187	176
Oral diseases	-	-	-	-	42	44	46

Other and unspecified non communicable diseases (n.e.c.)	82,739	94,853	1,03,200	95,926	97,979	1,06,712	1,31,195
Injuries	**25,668**	**28,239**	**30,865**	**31,722**	**37,497**	**38,424**	**46,780**
Non-disease specific	**39,855**	**42,642**	**54,563**	**53,174**	**61,094**	**66,736**	**68,765**
Other and unspecified diseases/conditions (n.e.c.)	**10,189**	**13,392**	**13,121**	**11,365**	**14,131**	**17,001**	**25,690**
Total Current Health Expenditure	**489,067**	**543,582**	**598,462**	**655,714**	**714,770**	**792,554**	**911,437**

Source: Philippine Statistics Authority
Note: P refers to Provisional Numbers

TOP CAUSES OF MORTALITY IN PHILLIPINES

About seven of the ten leading causes of death are of non-communicable diseases such as cardiovascular diseases (i.e. diseases of the heart, and cerebrovascular diseases); cancers, chronic obstructive pulmonary disease and diabetes are the leading non-communicable diseases. The lingering problems on infectious diseases such as pneumonia and tuberculosis are still evident as they are ranked in the top most leading causes of death.

Current Scenario: It has been witnessed that the Ischemic heart diseases have been one of the key cause of death in Philippines as in 2015 there were about 68,572 deaths due to this disease which later increased to 105,114 in the year 2020. Whereas, death due to Mental and behavioral disorders have increased from 503 in 2015 to 1,312 in 2020. **Diabetes Mellitus** have also severely impacted the Filipinos as there were 34,050 deaths in 2015 due to this disease, however the number of deaths have increased and reached to 39,723 in 2020, grew at a CAGR of 3.1% during the above mentioned period. Also, industry experts say that lack of exercise and decreased activity have further lead to other medical conditions such as obesity, which may develop to Type 2 diabetes mellitus or adult diabetes. Moreover, it has been also observed that the overall healthcare expenditure on the diseases such as Diabetes, Cardiovascular, and Respiratory infections have increased during the period 2015 – 2020, by 9.9% and 14.5% and 13.4% respectively.

In 2020, around 153,751 new cases of Cancer have been reported in the country, whereas about 92,606 deaths has been recorded in the country due to cancer in the same year. Breast cancer has been ranked 1st in terms of highest number of cancer cases recorded, followed by Lung cancer and Colon cancer. On the other hand, Lung cancer has been ranked 1st in terms of highest number of death, followed by Liver cancer and Breast cancer.

Moreover, number of cancer patients having prevalence of cancer from more than 5-year is about 354,398 in 2020, due to which there has been a constant increase in the demand of diagnostic imaging equipment such as MRI machine, CT scan machine along with cancer/radiation therapy equipment such as Linear Accelerator, cyclotron, Brachytherapy.

Relevance of Medlines Products in Current Context of Mortality: The Company **Medline** largely deals under the product category of diagnostic imaging devices such as X-ray based products, Ultrasound, CT scan, MRI, ECG machines and others. Company also deals with dialysis equipment such as dialysis machine and cancer radiology equipment such as Linear Accelerator, Cyclotron and Brachytherapy.

Since the disease such **diabetes, kidney failure and rapid surge in the deaths due to cancer has led to increase in the demand of such medical devices** in the country. Moreover, the growing impact of Covid-19 has further increased the **demand of ventilators and diagnostic imaging devices in the country due to major impact on respiratory systems of humans and CT scan are being highly used to diagnose the impact on lungs**. Therefore, it is anticipated that the **demand for such medical devices and equipment will grew further in the country and will help the company to increase its revenue** in the near future with the current product line itself.

Future Impact: On the other hand, the pandemic and subsequent lockdown have directly affected diabetes control, due to lack of accessibility, limitation of movement and lack of exercise which has further increased the anxiety and fear amongst patients and their families which will become key reason for mental disorders, diabetes and other cardiac problems among people. As a result strong growth in the demand of medical equipment and diagnostic devices in the country is predicted in the near future.

Table 4-8: Philippines Cause of Death (Mortality) on the Basis of Type of Diseases in Numbers, 2015 – 2020P

Cause of Death (Mortality)	2015	2016	2017	2018	2019	2020P
1-001 Certain infectious and parasitic diseases	**42,475**	**44,340**	**41,099**	**40,929**	**42,726**	**32,954**
1-002 Cholera	9	9	10	2	2	-
1-003 Diarrheal and gastroenteritis of presumed infectious origin	3,675	4,801	4,039	3,326	3,335	2,699
1-004 Other intestinal infectious diseases	595	583	557	517	432	413
1-005 Respiratory tuberculosis	24,644	24,462	22,523	22,103	22,568	18,410
1-006 Other tuberculosis	1,403	1,381	1,263	1,306	1,309	1,020
1-007 Plague	3	12	1	-	-	-
1-008 Tetanus	565	592	552	550	516	495
1-009 Diphtheria	23	31	28	27	29	15
1-010 Whooping cough	5	7	15	9	12	-
1-011 Meningococcal infection	82	85	91	98	105	62
1-012 Septicaemia	7,000	7,021	6,552	6,187	6,173	4,761
1-013 Infections with a predominantly sexual mode of transmission	20	11	9	10	10	16
1-014 Acute poliomyelitis	24	22	3	-	3	2
1-015 Rabies	258	229	220	282	283	288
1-016 Yellow fever	-	-	-	-	-	-
1-017 Other arthropod-borne viral	1,345	1,942	1,586	2,080	2,778	1,016

fevers and viral haemorrhagic fevers						
1-018 Measles	13	5	21	338	801	51
1-019 Viral hepatitis	838	888	901	1,009	1,061	898
1-020 Human immunodeficiency virus [HIV]	268	349	392	461	878	916
1-021 Malaria	19	11	8	7	14	7
1-022 Leishmaniosis	-	1	-	-	-	-
1-023 Trypanosomiasis	1	3	-	-	-	-
1-024 Schistosomiasis [bilharziasis]	295	318	327	364	368	327
1-025 Remainder of certain infectious and parasitic diseases	1,390	1,577	2,001	2,253	2,049	1,558
1-026 Neoplasms	**63,003**	**64,594**	**64,125**	**67,138**	**68,657**	**66,179**
1-027 Malignant neoplasm of lip, oral cavity and pharynx	2,286	2,406	2,478	2,579	2,673	2,457
1-028 Malignant neoplasm of oesophagus	546	543	472	522	572	436
1-029 Malignant neoplasm of stomach	1,498	1,604	1,564	1,594	1,576	1,555
1-030 Malignant neoplasm of colon, rectum and anus	6,543	6,593	6,708	7,420	7,731	7,382
1-031 Malignant neoplasm of liver and intrahepatic bile ducts	6,505	6,814	6,318	6,506	6,401	6,008
1-032 Malignant neoplasm of pancreas	1,734	1,820	1,924	2,032	2,011	1,997
1-033 Malignant neoplasm of larynx	503	464	483	520	536	493
1-034 Malignant neoplasm of trachea, bronchus and lung	9,034	9,058	8,945	9,012	9,013	7,736
1-035 Malignant melanoma of skin	154	132	173	172	183	189
1-036 Malignant neoplasm of breast	7,845	8,436	8,732	9,034	9,437	9,674
1-037 Malignant neoplasm of cervix uteri	1,977	2,203	2,145	2,376	2,427	2,387
1-038 Malignant neoplasm of other and	1,140	1,120	1,212	1,249	1,318	1,310

unspecified parts of uterus						
1-039 Malignant neoplasm of ovary	1,730	1,849	1,867	2,056	1,977	2,081
1-040 Malignant neoplasm of prostate	2,968	3,043	3,012	3,038	3,200	3,506
1-041 Malignant neoplasm of bladder	381	424	430	443	415	408
1-042 Malignant neoplasm of meninges, brain and other parts of central nervous system	1,595	1,520	1,358	1,375	1,373	1,384
1-043 Non-Hodgkin lymphoma	1,378	1,451	1,473	1,610	1,518	1,526
1-044 Multiple myeloma and malignant plasma cell neoplasms	282	284	289	287	355	318
1-045 Leukaemia	2,927	3,022	2,979	3,028	3,076	2,793
1-046 Remainder of Malignant Neoplasms	7,689	7,684	8,245	8,601	9,023	8,795
1-047 Remainder of Neoplasms	4,288	4,124	3,318	3,684	3,842	3,744
1-048 Diseases of the blood and blood forming organs and certain disorders involving the immune mechanism	**3,709**	**3,889**	**4,789**	**4,657**	**4,339**	**4,184**
1-049 Anaemias	2,616	2,858	3,146	3,270	3,344	3,277
1-050 Remainder of diseases of the blood and blood forming organs and certain disorders involving the immune mechanism	1,093	1,031	1,643	1,387	995	907
1-051 Endocrine, nutritional and metabolic diseases	**42,728**	**42,571**	**41,642**	**42,654**	**45,449**	**51,562**
1-052 Diabetes Mellitus	34,050	33,295	30,932	32,106	34,570	39,723
1-053 Malnutrition	2,803	3,218	3,582	3,645	3,827	4,213
1-054 Remainder of endocrine, nutritional and metabolic diseases	5,875	6,058	7,128	6,903	7,052	7,626
1-055 Mental and behavioural disorders	**503**	**654**	**1,433**	**1,416**	**1,086**	**1,312**

1-056 Mental and behavioural disorder due to psychoactive substance use	242	257	389	357	367	352
1-057 Remainder of mental and behavioural disorders	261	397	1,044	1,059	719	960
1-058 Diseases of the nervous system	**7,565**	**7,741**	**8,915**	**9,185**	**10,181**	**8,282**
1-059 Meningitis	1,607	1,572	1,157	1,079	1,094	686
1-060 Alzheimer's disease	405	411	701	755	855	893
1-061 Remainder of diseases of the nervous system	5,553	5,758	7,057	7,351	8,232	6,703
1-062 Diseases of the eye and adnexa	**19**	**5**	**45**	**43**	**45**	**54**
1-063 Diseases of the ear and mastoid process	**38**	**10**	**78**	**93**	**75**	**86**
1-064 Diseases of the circulatory system	**198,077**	**198,507**	**196,900**	**201,483**	**213,625**	**225,196**
1-065 Acute rheumatic fever and chronic rheumatic heart diseases	2,073	2,003	2,101	2,112	2,272	1,802
1-066 Hypertensive diseases	34,506	33,452	26,471	26,836	27,764	31,610
1-067 Ischaemic heart diseases	68,572	74,134	84,120	88,433	97,475	105,114
1-068 Other heart diseases	31,729	28,641	22,134	20,042	20,416	20,575
1-069 Cerebrovascular diseases	58,310	56,938	59,774	61,959	63,548	64,104
1-070 Atherosclerosis	1,111	1,315	562	227	246	339
1-071 Remainder of diseases of the circulatory system	1,776	2,024	1,738	1,874	1,904	1,652
1-072 Diseases of the respiratory system	**78,859**	**88,139**	**87,760**	**87,720**	**95,879**	**60,155**
1-073 Influenza	49	56	76	71	58	22
1-074 Pneumonia	49,595	57,809	57,210	56,815	62,719	34,251
1-075 Other acute lower respiratory infections	86	94	102	86	67	115
1-076 Chronic lower respiratory infections	23,760	24,365	24,818	24,820	26,576	20,553

1-077 Remainder of diseases of the respiratory system	5,369	5,815	5,554	5,928	6,459	5,214
1-078 Diseases of the digestive system	**22,456**	**22,803**	**24,168**	**24,341**	**25,165**	**24,533**
1-079 Gastric and duodenal ulcer	5,698	5,537	5,169	5,258	5,437	5,537
1-080 Diseases of the liver	9,040	8,990	9,425	9,968	10,359	9,810
1-081 Remainder of diseases of the digestive system	7,718	8,276	9,574	9,115	9,369	9,186
1-082 Diseases of the skin and subcutaneous tissue	**2,327**	**2,191**	**2,803**	**3,339**	**3,718**	**3,625**
1-083 Diseases of the musculoskeletal system and connective tissue	**2,210**	**2,580**	**3,521**	**3,959**	**4,358**	**4,398**
1-084 Diseases of the genitourinary system	**22,031**	**23,526**	**18,759**	**19,227**	**20,603**	**21,584**
1-085 Glomerular and renal tubulo-interstitial diseases	3,970	3,767	3,042	3,198	3,388	3,101
1-086 Remainder of diseases of the genitourinary system	18,061	19,759	15,717	16,029	17,215	18,483
1-087 Pregnancy, childbirth and the puerperium	**1,721**	**1,483**	**1,484**	**1,616**	**1,458**	**1,965**
1-088 Pregnancy with abortive outcome	174	147	157	135	122	179
1-089 Other direct obstetric deaths	1,431	1,251	1,193	1,230	1,122	1,501
1-090 Indirect obstetric deaths	109	82	118	192	173	277
1-091 Remainder of pregnancy, childbirth and the puerperium	7	3	16	59	41	8
1-092 Certain conditions originating in the perinatal period	**9,831**	**9,785**	**11,054**	**11,768**	**11,260**	**9,535**
1-093 Congenital malformations, deformations and chromosomal abnormalities	**5,138**	**5,100**	**5,336**	**5,415**	**5,912**	**4,718**
1-094 Symptoms, signs and abnormal clinical and laboratory findings, NEC	**18,659**	**19,839**	**20,680**	**21,918**	**22,918**	**26,230**
1-095 External causes of morbidity and mortality	**39,256**	**44,426**	**44,646**	**43,808**	**42,960**	**36,343**

1-096 Transport accidents	10,033	11,292	11,399	12,536	12,799	8,699
1-096a Land transport accidents	10,012	11,274	11,360	12,487	12,764	8,686
1-096b Water Transport accidents	11	13	26	14	8	1
1-096c Air and space transport accidents	4	4	2	13	3	-
1-096d Other and unspecified transport accidents	6	1	11	22	24	12
1-097 Falls	2,391	2,780	2,730	3,074	3,144	3,473
1-098 Accidental drowning and submersion	3,186	3,202	3,810	3,534	3,295	2,753
1-099 Exposure to smoke, fire and flames	501	469	446	429	446	327
1-100 Accidental poisoning by and exposure to noxious substances	204	151	386	433	640	622
1-101 Intentional self-harm	2,481	2,413	2,463	2,984	2,808	4,418
1-102 Assault	11,096	14,869	11,845	9,916	8,831	6,775
1-103 All other external causes	9,364	9,250	11,567	10,902	10,997	9,276
1–901 SARS U04	-	-	-	-	-	-
Vaping-related disorder U07.0	-	-	-	-	-	-
COVID-19 U07.1-U07.2	*	*	*	*	*	**30,140**
COVID-19 Virus identified U07.1	*	*	*	*	*	**9,300**
COVID-19 Virus not identified U07.2	*	*	*	*	*	**20,840**
Total	**560,605**	**582,183**	**579,237**	**590,709**	**620,414**	**613,035**

Source: Philippine Statistics Authority (Data on deaths are those registered at the Office of the City/Municipal Registrars throughout the country and submitted to the Office of the Civil Registrar General using Certificate of Death-Municipal Form 103)

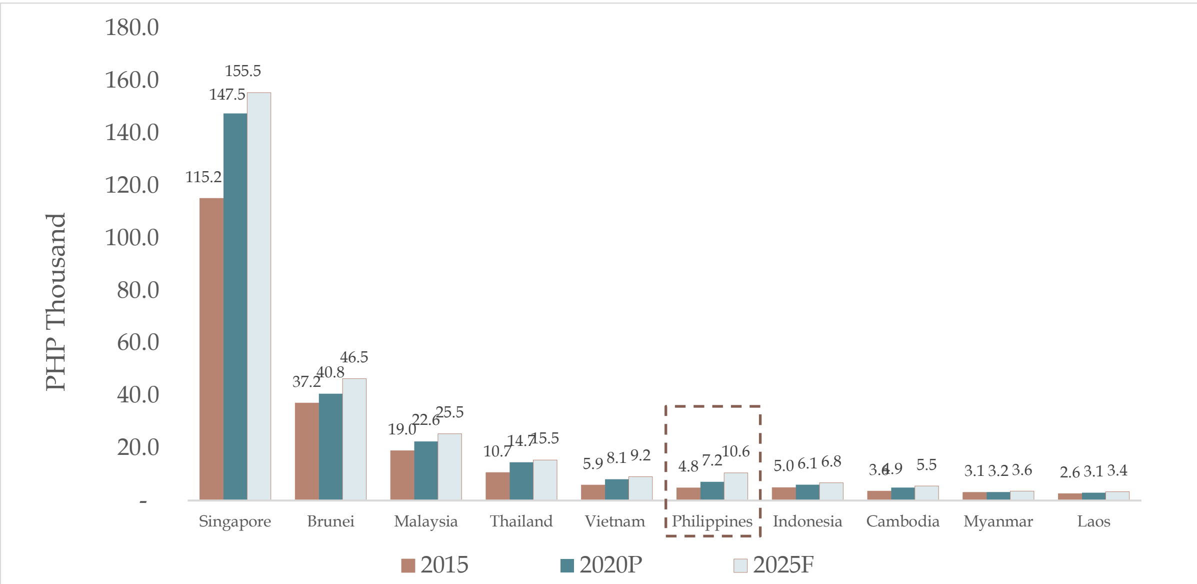
Notes: P 2020 figures are preliminary and may change. Updates as of 17 June 2021.

Note: Regarding Covid-19 deaths, please note that Covid-19 virus identified refers to confirmed cases of deaths when the person died, while for covid-19 virus not identified refers to those not yet confirmed when the person died. Thus, the figures here are not the same with the figures released by DOH. Although DOH released confirmed cases only it still varies with the confirmed cases here since DOH have further validation for those unconfirmed cases, while PSA is based on the date it was registered and no further validation if said person is confirmed after his/her death.

HEALTHCARE EXPENDITURE PER CAPITA (COMPARED TO ASEAN REGION), 2015, 2020 AND 2025

Despite the growth in Philippines per capita healthcare expenditure from PHP 4.8 Thousand in 2015 to PHP 7.2 Thousand in 2020, the Philippine's per capita healthcare expenditure stands substantially lower than its ASEAN Region peers such as Singapore, Brunei, Malaysia, Thailand, and Vietnam which had per capita healthcare expenditures of PHP 147.5, PHP 40.8, PHP 22.6, PHP 14.7 and PHP 8.1 Thousand in 2020, respectively. The major reason for low healthcare expenditure in Philippines in comparison to ASEAN region peers is due to less number of hospital infrastructures in the country and low percentage of healthcare expenditure in overall country's GDP.

Figure 4-6: Philippines Health Expenditure per Capita Compared to ASEAN Region in PHP Thousand, 2015, 2020P and 2025F



Source: Industry Articles, Ken Research Analysis
Note: P refers to Provisional Numbers and F refers to Forecasted Numbers

Table 4-9: Philippines Healthcare Expenditure on the Basis of Gender (Male and Female) and Age Group (less the 1 year old, 1-4 years, 5 – 9 years and others) in PHP Million, 2014 – 2019

Age/Gender	2014	2015	2016	2017	2018	2019
Health Expenditure By Age Group - Male						
Male	**222,140**	**247,689**	**274,189**	**301,300**	**328,847**	**364,963**
< 1 year old	15,819	17,508	19,768	22,100	26,033	27,940
1-4	23,989	25,821	28,758	31,228	33,406	37,435
5-9	15,915	17,769	20,034	21,968	23,177	26,435
10-14	10,966	12,770	14,718	16,375	16,971	19,773
15-19	10,183	12,215	14,335	16,370	20,963	19,722
20-29	18,552	21,189	24,336	27,376	28,680	32,844
30-39	21,568	23,935	26,669	29,340	31,165	35,391
40-49	22,600	25,135	27,556	29,943	32,141	36,228
50-59	26,030	29,037	31,755	34,543	37,337	41,952
60-64	26,789	28,281	29,906	31,881	35,538	38,068
65 and over	29,728	34,028	36,355	40,175	43,438	49,174
Health Expenditure By Age Group - Female						
Female	**266,927**	**295,893**	**324,273**	**354,414**	**385,923**	**427,591**
< 1 year old	12,630	14,179	16,197	18,259	21,531	23,266
1-4	20,191	21,864	24,552	26,802	28,613	32,125
5-9	13,662	15,386	17,515	19,297	20,303	23,220
10-14	9,478	11,233	13,160	14,813	15,236	17,878
15-19	12,158	14,773	17,320	20,058	20,599	24,343
20-29	41,643	45,698	49,779	54,309	60,248	66,047
30-39	43,440	46,359	49,093	51,892	58,781	62,858
40-49	27,965	30,918	33,724	36,684	39,762	44,111
50-59	24,879	28,127	31,245	34,623	36,708	41,470
60-64	22,054	23,880	25,683	27,750	30,120	32,724
65 and over	38,828	43,475	46,003	49,927	54,021	59,549
Total Current Health Expenditure	**489,067**	**543,582**	**598,462**	**655,714**	**714,770**	**792,554**

Source: Philippine Statistics Authority

Table 4-10: Philippines Healthcare Expenditure on the Basis of Income Quintile (First Quintile, Second Quintile, Third Quintile, Fourth Quintile and Fifth Quintile) in PHP Million, 2014 – 2019

Income Quintile	2014	2015	2016	2017	2018	2019
First Quintile	77,779	92,808	100,861	114,063	123,132	145,344
Second Quintile	56,961	65,008	71,810	76,148	83,750	94,286
Third Quintile	68,602	76,839	84,758	91,648	100,255	111,443
Fourth Quintile	89,383	98,433	108,617	118,900	129,811	142,340
Fifth Quintile	196,342	210,493	232,416	254,954	277,822	299,141

Total Current Healthcare Expenditure	**489,067**	**543,582**	**598,462**	**655,714**	**714,770**	**792,554**

Source: Philippine Statistics Authority

Definition: Income quintile groups are computed on the basis of the total equalized disposable income attributed to each member of the household.

The data (of each person) are ordered according to the value of the total equalized disposable income. Four cut-point values (the so-called quintile cut-off points) of income are identified, dividing the population into five groups equally represented by 20 % of individuals each:

***First quintile** group of equalized income*

***Second quintile** group of equalized income*

***Third quintile** group of equalized income*

***Fourth quintile** group of equalized income*

***Fifth quintile** group of equalized income*

The first quintile group represents 20% of the population with the lowest income (an income smaller or equal to the first cut-off value), and the fifth quintile group represents the 20% of population with the highest income (an income greater than the fourth cut-off value).

In Philippines, Metro Manila region accounted the highest share of 23.4% in the Healthcare expenditure in the year 2019, followed by Central Luzon region accounting 10.8% share. These regions contributed highest share in healthcare expenditure of the country due to the National Capital Region (NCR) and Luzon are the economic heart of the country and also contain the largest share of both public and private healthcare infrastructure. Also, they together accounted ~44% share in terms of Real GDP contribution.

Table 4-11: Philippines Healthcare Expenditure on the Basis of Region (Metro Manila, Cordillera, Ilocos, Cagayan, Central Luzon, CALABARZON, MIMAROPA, Bicol, Western Visayas, and others) in PHP Million, 2014 – 2019

Region	2014	2015	2016	2017	2018	2019
Metro Manila	120,731	125,034	134,929	144,645	158,450	185,740
Cordillera	10,048	11,189	12,296	13,655	14,586	16,490
Ilocos	19,568	21,986	24,072	26,535	28,331	30,071
Cagayan	11,437	13,022	14,397	15,124	16,900	19,037
Central Luzon	53,102	58,359	64,715	69,622	77,708	85,700
CALABARZON	13,947	14,197	17,542	18,294	25,515	24,408
MIMAROPA	6,005	6,600	7,276	8,917	5,216	10,904
Bicol	20,304	22,272	24,491	25,888	28,975	32,461
Western Visayas	31,472	33,861	37,637	41,057	45,652	46,642

Central Visayas	28,619	30,372	33,305	37,244	41,305	46,006
Eastern Visayas	15,267	16,408	18,676	19,434	20,742	23,815
Zamboanga Peninsula	10,564	11,727	12,922	13,454	14,852	17,388
Northern Mindanao	16,599	18,393	19,716	21,618	22,960	27,088
Davao Region	17,939	20,357	21,594	23,093	25,122	28,900
Soccsksargen	19,007	20,975	22,152	23,507	25,703	25,261
Caraga	8,394	9,254	10,231	11,115	11,462	13,460
Muslim Mindanao	3,944	4,624	4,752	5,057	5,990	6,712
Nationwide	82,120	104,953	117,758	137,455	145,300	152,470
Total	**489,067**	**543,582**	**598,462**	**655,714**	**714,770**	**792,554**

Source: Philippine Statistics Authority

5. Healthcare Industry

5.1. Overview and Genesis for Healthcare Industry in Philippines

Table 5-1: Introduction for Philippines Healthcare Market including Market Overview and Genesis

Particulars	Description
Market Overview and Genesis	• **Overview:** The healthcare sector in Philippines continues to change after a decade of increased public spending on health care. The sector is characterized by a well-developed private health care sector next to the public sector. The sprawling country of over 7,000 islands has a decentralized system of government which is reflected in the governance and structure of the health care system. The **National Capital Region (NCR) and Luzon** are the economic heart of the country and also contain the **largest share of both public and private healthcare infrastructure**. • **Relatively Young Population in the Country:** Population of Philippines was estimated to be **109.9 million in 2020** out of which about **65% of population is below 35 years of age** which is relatively young population. The young population is still growing and pays almost as much as the government directly to public and private providers as out-of-pocket payments primarily for **consultations, diagnostics and labtests**. • **Country's Healthcare Expenditure:** Philippines' health expenditure has been growing at a rapid CAGR of 10.9% between 2014and 2020P. The expansion in healthcare spending has outstripped the Philippines' economic growth rate, thereby bringing health expenditure, as a percentage of GDP, from 4.35% in 2015 to 4.64% in2019. • Unlike most other ASEAN countries, the primary burden for paying for healthcare falls squarely on the shoulders of the patients and their families. According to the data compiled in the Department of Health ("DoH") National Health Accounts, **OOP payments comprised 52.8% of the Philippines' current healthcare expenditure as at the end of 2019**. Nevertheless, the proportion of OOP payments is trending downwards. • The government passed the **Universal Health Care Act in 2019**, automatically enrolling all Filipinos into a new National Health Insurance Programme and making some other structural reforms to the healthcare delivery system. The new measures are broadening healthcare access and shifting the burden of payments away from individuals towards the national health

insurer, the **Philippine Health Insurance Corporation ("Phil Health")**.

- In Philippines, responsibility for delivering healthcare services is shared between the government and private health operators. **Public healthcare** in the Philippines has been devolved since the passage of the Local Government Code in 1991. Thus, most primary and secondary care services are delivered by healthcare facilities run by LGUs. The DoH maintains a limited number of tertiary and specialist care hospitals but primarily plays a coordinating role in the public healthcare system.
- **Private health** operators play the dominant role in the Philippines healthcare system, rendering approximately two-thirds of all healthcare services. The government has gradually opened the healthcare services subsector to private and foreign investment. Thus, the country's dominant conglomerates and international investors have been increasing their participation in the private healthcare industry, drawn to it by the outsized growth opportunity.
- **Medical facilities in the Philippines:** Country is heavily dependent on imported medical devices. The Philippines medical devices industry is **highly fragmented**. Therefore, no medical devices manufacturers' have developed sufficient scale to develop the production capabilities required to manufacture sophisticated medical equipment.
  The existing medical device manufacturers mostly focus on making prototype units and medical consumables such as surgical gloves, syringes, and needles. Thus, Filipino hospitals tend to **purchase medical equipment from the developed countries**, notably the USA, Germany, Japan, and Singapore.
- **Import of Pharmaceuticals:** The Philippines is similarly dependent on imported pharmaceuticals. Notably, **the Philippines cannot produce its own pharmaceutical raw materials and must import them, primarily from China**. The Philippines' generic drugs market is growing as the government's efforts to promote the use of generic medicines to control healthcare expenditures are gradually beginning to take effect. **The Philippines purchases most of its generic drugs from India**.
- **Growth Drivers for Healthcare sector in Philippines:**
  a. **Strong Growth in Medical Tourism**: Philippines is emerging as the top destination for medical tourism. Major reasons contributing for the growth in Medical Tourism includes large pool of English-speaking professionals, its culture of hospitality, the quality of education and skills of health professionals, its young and hospitable workforce, its competitive price advantage for healthcare and other services, and its popularity as a tourist destination.

b. **Increase in Healthcare Facilities**: The increasing demand for health services is not being met by the current number of health facilities and medical workers. Therefore, the government is planning to build more health facilities in the countryside and train or hire more healthcare professionals. Increase in Healthcare Facilities will gradually increase the demand for overall healthcare sector in the country.

c. **Surge in Non – Communicable Disease:** The Burden of Disease tilts increasingly towards Non-Communicable Diseases, such as cardiovascular diseases, Diabetes and Cancers. Respiratory diseases, injuries, accidents and some infectious diseases (Measles, Dengue) are increasing rapidly and these diseases have become the key reasons for cause of deaths in the country. Therefore, to tackle such diseases government will adopt technologically advanced medical equipment and devices to control the death rate for the above mentioned diseases.

- **Future Healthcare Industry Scenario:** The healthcare services along with sub-sector will likely to remain on an accelerated growth trajectory as the passage of **the Universal Health Care Law in 2019** will impact a growing proportion of the Philippines population, increasing healthcare access.
  Moreover, **Private healthcare providers will continue to drive growth in healthcare access in the Philippines**, especially since several industry players have undergone significant corporate exercises in recent years to expand their networks.
  The **COVID-19 pandemic has highlighted the severity of the Philippines' shortfall in healthcare resourcing**, particularly in the public healthcare system. While the government has raised the DoH's budget allocations for 2021, it remains to be seen if the Philippines will make the necessary investments post-COVID-19 to address its healthcare resource shortfall permanently.

Source: Interviews with Philippines Medical Device Market Professionals, Ken Research Analysis

5.2. Market Segmentation by Healthcare Segments, 2020 and 2025

5.2.1. By Sub Category (Healthcare (Pharmaceuticals, Medical Devices, Food Supplements, Hospital Market and Others)

Table 5-2: Philippines Healthcare Market Segmentation by Sub – Industry (Pharmaceuticals, Health Insurance Premium, Hospital Market, Medical Devices, Vitamin and Dietary Supplements) on the Basis of Revenue, 2020 and 2025

Healthcare (Sub – Industries)	Rationale
Pharmaceuticals	• **Overview:** Philippines is the third-largest pharmaceutical market in ASEAN, after Indonesia and Thailand. Over 14 of the world's top 20 pharmaceutical companies have manufacturing facilities in the Philippines. The country has over 130 Pharmaceutical manufacturers in the country. • The pharmaceutical industry in the Philippines has experienced stable growth for the past decade, and this trend is expected to continue as greater consumption power allows for more purchases (both from the lower and higher ends of the spectrum), and as the Universal Healthcare System is implemented. • **Market Size:** Pharmaceutical Industry is estimated to contribute about 36.7% share in the overall revenue generation of the healthcare industry in Philippines. In 2020, Pharmaceutical Industry generated revenue of about PHP 235.0 Billion. • **Growth in Sector:** The pharmaceutical shows strong growth prospects. The government's passage of the Universal Health Care Act in 2019 will extend healthcare access to a greater proportion of the Philippines population, thereby growing the demand for the drugs used to treat their illnesses. • **Rapid Economic Growth:** The Philippines' rapid economic growth has expanded the middle-class, who can afford private healthcare services. According to the World Bank, the Philippines middle-class increased by 2.6 million people from 2006 to 2015, while the number of economically secure citizens grew by 11.1 million people, this has further led to increase in demand of medical services in the country coupled with the rise in the opening up of new standalone pharmacies and pharmacy chains in the country to cater larger target audience.

	• **High Dependency on Imports:** Philippines produces only ~30% of its pharmacy demands locally and is dependent on other countries for the rest of the part. Moreover, it is witnessed that Philippines purchases most of its generic drugs from India. • **Issues and Challenges:** Due to the pandemic, the Department of Health has delayed many intended procurements and is facing budget challenges. Ongoing policy changes including a new Health Technology Assessment Policy and a new Maximum Drug Retail Pricing Policy continue to present challenges for firms. • **Fragmented Market:** There are few local manufacturers for pharmaceuticals making the industry a fragmented space as per the competition framework concerned. Therefore, making the nation extremely import dependent. • **Future Market Size:** In future, it is anticipated that the Philippines pharmaceutical market in terms of revenue will reach to PHP 310.0 Billion at a CAGR of 5.7% during the period 2020 – 2025. • **Future Growth Driver:** Generic drugs usage will likely to drive sales in the pharmaceuticals industry. Also, awareness of the efficacy of these medications is increasing, suggesting that self-paying patients will turn to generic drugs in greater numbers to reduce their overall healthcare spending. Further, as the Universal Health Care Act will allow a growing proportion of less affluent Filipinos to access healthcare at state-run facilities, they will be more likely to be prescribed generic drugs to treat their conditions.
Health Insurance Premium	• **Overview:** All Philippines' citizens are entitled to free healthcare under the Philippine Health Insurance Corporation, known as "Phil Health", wherein some people can pay premiums and some are unable to do so. For all expats who are employed in the Philippines, enrollment in Phil Health is mandatory wherein premiums are automatically deducted from payrolls, and employees and employers share the cost. • **Market Size:** Health Insurance Premium Industry in Philippines is estimated to contribute about 23.1% share in the overall revenue generation of the healthcare industry in Philippines. The Industry generated revenue of about PHP 148.2 Billion during the year 2020. • **Growth Driver:** The national government of Philippines procures vaccines and devices for its programs and hospital networks wherein U.S. firms have shown success in such tenders. Private hospitals provide latest innovative treatments and are tend to be where U.S. firms target their business. Patients at such hospitals are willing to pay out of pocket and do not need to have treatments covered by Universal Healthcare.

	• COVID-19 pandemic has placed extra strain on the Philippines' health care system which resulted in the increased awareness of health risks and eventually a spike in private insurance coverage in the Country. • **Strategies by Players:** Igloo, a Singapore-based insurance provider, partnered with Union Bank of the Philippines and e-commerce firm Akalaku to offer a series of micro-insurance products in 2020. On the other hand, Insurer Singlife Philippines teamed up with mobile wallet GCash to offer basic micro-insurance policies to people without bank accounts or access to other financial services in September 2020. • **Future Market Size:** Health Insurance Premium Market in Philippines in terms of revenue will reach PHP 210.0 Billion by the end of 2025 at a CAGR of 7.2% during the period 2020–2025. • **Future Growth Driver:** The signed Universal Health Care Bill into law in 2019, enrolled more citizens in the National Health Insurance Programme. The law aims for the state-owned Philippine Health Insurance Corporation, known as PhilHealth, and focuses on covering at least 50% of all medical expenses by 2022, up from the current levels of 15-17% in 2019. • Moreover, Covid-19 which has created greater awareness of the benefits of insurance among individual in Philippines, could shape future demand for coverage and Insurance products.
Hospital Market	• **Market Size and Overview:** Philippines hospital market observed to be the third biggest sub-healthcare industry as it contributed about 22.6% in the overall revenue generation for the country's healthcare market. In 2020, it has been witnessed that the Philippines hospital market contributed about PHP 145.0 Billion in terms of revenue. • **Number of Hospital:** There are about, 1,915 hospitals in the country as of 31st December 2020, out of which 40.1% of the hospitals are owned and managed by the government, and the remaining 59.9% of the hospitals are privately owned. • **Hospital Expenditure:** In Philippines, overall hospital expenditure has increased at a CAGR of 13.1% during the period 2014 – 2020. Moreover, it is anticipated that the hospital expenditure will grew at a CAGR of 9.8% during the period 2020 – 2025 and reach to PHP 668,911 Million. • **Region wise Hospital Split:** Majority of the hospitals have been situated in the three major regions such as CALABARZON (228 hospitals), Central Luzon (196) and National Capital Region (186 hospitals) as of 30th June 2021. • **Rising Prevalence of Diseases:** This has been one of the key drivers for the hospital market. As, the increase in the cases of disease category such as Respiratory, Hypertension, Cancer

	Patients, Pneumonia, TB, skin disease and others have positively lead to surge in the demand of hospital facilities required in the country. • **Impact of Covid-19:** The impact of Covid-19 has further led to surge in the demand of COVID specialized hospitals in the country, as the Covid-19 virus spreads rapidly from human to human contact and from other COVID infected objects to humans as well. Therefore, fully isolated COVID – hospital are required to tackle and lower down the spread of the virus in the country. • **Future Market Size: In future, it is anticipated that the** Hospital Market will contribute second highest share in terms of revenue generation in Philippines. The revenue contribution from hospital market will reach PHP 225.0 Billion by the end of 2025 at a CAGR of 9.2% during the period 2020–2025.
Medical Devices	• **Overview:** The Philippine medical device market is majorly dependent on imports and continues to present opportunities for U.S. manufacturers and distributors of high-value, low-volume products. • **Market Size:** Medical Device Industry is estimated to contribute about 12.0% share in the overall revenue generation of the healthcare industry in Philippines. In 2020, Medical Device Industry generated revenue of about PHP 77.0 Billion. • **Major Growth Opportunity:** The healthcare market in the Philippines has very high opportunities for medical device industry. Since, Philippines have a high death rate due to the diseases such as respiratory infections, diabetes, hypertension, TB, and other heart related problems. Also, the nation struggles with both obesity and malnutrition at the same time. Therefore, country has a huge demand of medical device's both equipment and consumables to treat the patients. • **High Disease Prevalence Rate:** In Philippines, it has been witnessed that the highest number of disease cases have been observed for Acute Respiratory Infection around 7,10,151 cases, followed by Hypertension around 4,45,834 cases in 2020. This led to rapid surge in the demand of medical equipment such as CT scan machines, X-ray machine, MRI machines and others in the country. • **Highly fragmented Market:** There are few local manufacturers for medical equipment and consumables which leads to a highly fragmented market space in the country. Moreover, less number of local manufacturing companies led the nation to be extremely import dependent. For high value products, the nation has no choice but to procure from foreign sources, and U.S. products continue to be the most popular choice in the country. However, imported medical equipment products market share has been increasing steadily for Germany, Japan, China and Singapore.

	• **Major Imported Products:** Products which are largely imported includes electro-medical devices, imaging equipment, radiation equipment, dialysis devices, and linear accelerators. These are the areas where U.S. technologies tend to be competitive. In 2020, in terms of revenue around 99.2% of medical devices are being imported in the country. Whereas, locally produces medical device contributes remaining share of 0.8% in 2020. The Local produced medical devices are limited to accessories, spare parts (including customized parts), and disposables such as surgical gloves, syringes, and needles. • **Regulations:** The Philippines largely follows the US regulatory system for medical devices. The principal regulatory authority is the U.S. Food and Drug Administration (FDA), with oversight from the Philippines Department of Health. • **Major Brands:** Most popular brands for Medical Devices imports are GE Medical, Medtronic, Terumo, and BD Medical. • **Future Market Size:** In future, it is anticipated that the Philippines medical device market in terms of revenue will reach to PHP 127.8 Billion at a CAGR of 10.7% during the period 2020 – 2025. • **Future Growth Driver:** In future, the medical device market is anticipated to grow largely due to substantial impact on the respiratory system of the people due to of Covid-19.Moreover, the post symptoms of Covid-19 in some of the severely impacted covid-19 patients have been observed the multiple organ failure's in the body which will further lead to surge in the demand of both medical imaging devices, dialysis equipment along with the other medical consumables such as N-95 masks, gloves, Syringes, PPE Kits and others in the country.
Vitamin and Dietary Supplements	• **Market Size:** Vitamin and Dietary Supplements Industry recorded a mere share of 5.5% in the overall revenue of the healthcare industry in Philippines in 2020 i.e. revenue of about PHP 35.0 Billion in 2020. • **Market Stage:** Nutraceuticals market of Philippines is presently in its growth stage due to the dependence on traditional pharmaceutical medicine system by growing middle class population, which accounts for majority of the Filipino population. • **Growth Drivers:** Philippines Health Department in Central Visayas region bought Vitamin C supplements for school children to boost their immunity as a result of COVID-19 pandemic in April 2020. PHP 500K was allocated by the department in the region to provide these supplements in the school. Hence, resulted in higher demand for these products in the country.

- Proportion of daily consumption of dietary supplements or nutraceuticals in the Philippines was recorded 88% of the total consumption i.e. highest in >55 years age group individuals. On the other hand, 77% to 79% of the people within age group 35-55 take them daily as on June 2020. However, for 16-24 age group individuals, more than 40% consumption is spread across multiple factors such as consumption in a week, only when feeling unwell, to boost performance etc.
- **Market Trend:** Majority of the work-force in Philippines have been contributing to the expanding capability and desire of Filipino consumers to improve both mental and physical health through nutraceuticals. Emergence of domestic brands and foreign based multinational corporations selling unique variants of vitamins and dietary supplements is also augmenting the sales for Vitamins and Dietary Supplements market of Philippines.
- **Future Market Size:** Vitamins and Dietary Supplements Market is anticipated to reach PHP 52.0 Billion by 2025 with a CAGR of 8.2% during 2020-2025. The growth and popularity of this industry will witness a positive augmentation wherein consumers will witness inclination towards health and wellness.
- **Future Growth Driver:** Sales of popular vitamin brands increased by 10 times as a result of pandemic in April-May 2020. Growth is anticipated in Philippines as a result of post pandemic effects, wherein the country will also manage to keep the inventory of the supplements in stock as they witnessed shortage in the initial phase of COVID in March 2020. Demand will increase for popular items such as Multivitamins, Vitamin D, Supplements containing 500mg of Vitamin C etc.
- Moreover, the continuous growth in fitness among Filipinos has boosted the total number of gym-goers across the country. Hence, growth in consumption of Health Supplements will be witnessed in the country.

Source: Interviews with Philippines Medical Device Market Professionals, Ken Research Analysis

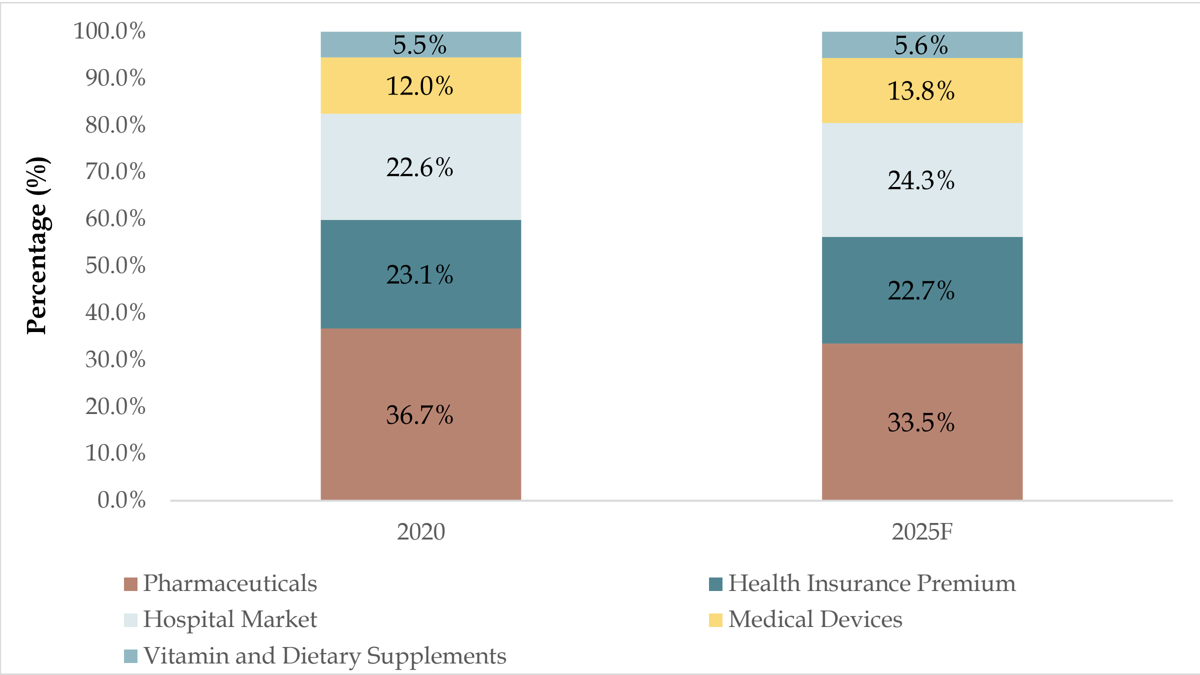
Table 5-3: Philippines Healthcare Market Segmentation by Sub – Industry (Pharmaceuticals, Health Insurance Premium, Hospital Market, Medical Devices, Vitamin and Dietary Supplements) on the Basis of Revenue in PHP Billion and CAGR in Percentage (%), 2020 and 2025F

Healthcare Industry (PHP Billion)	2020	2025F	CAGR (2020 - 2025)
Pharmaceuticals	235.0	310.0	5.7%
Health Insurance Premium	148.2	210.0	7.2%
Hospital Market	145.0	225.0	9.2%
Medical Devices	77.0	127.8	10.7%

Vitamin and Dietary Supplements	35.0	52.0	8.2%
Total	**640.2**	**924.8**	7.6%

Source: Interviews with Philippines Medical Device Market Professionals, Ken Research Analysis
Note: F refers to forecasted Numbers

Figure 5-1: Philippines Healthcare Market Segmentation by Sub – Industry (Pharmaceuticals, Health Insurance Premium, Hospital Market, Medical Devices, Vitamin and Dietary Supplements) on the Basis of Revenue in Percentage (%), 2020 and 2025F



Source: Interviews with Philippines Medical Device Market Professionals, Ken Research Analysis
Note: F refers to forecasted Numbers

5.3. By Disease, 2020

DISEASE PREVALANCE

In the Philippines, eight out of the ten leading causes of morbidity or illness can be attributed to infectious diseases. Illnesses related to the respiratory system such as acute respiratory infection, pneumonia and bronchitis are the top three leading cause of illness.

Acute Respiratory Infection accounted for the highest disease prevalence rate of 652.9 per hundred thousand population, followed by hypertension accounting 409.9/10,000 people, Urinary tract infection accounting for 142.4/10,000 people in the year 2020.

Moreover, there were 710,151 disease cases of Respiratory infection, followed by 445,834 disease cases of hypertension, which were reported in the year 2020.

Therefore, high prevalence rate of diseases such as respiratory infection, hypertension, urinary tract infection, Pneumonia, Bronchitis leads to heavy demand of medical diagnostic devices such as X-ray, CT scan and MRI scan machines in the Philippines market.

Table 5-4: Cross Comparison of Number of Cases per Disease, Disease Prevalence Rate per Hundred Thousand Populations in Philippines, Products/Techniques Used to Diagnose Disease, 2020

Diseases	Number of Cases per Disease, 2020	Rate/ 100,000 Population	Devices/Techniques Used to Diagnose Disease
Acute Respiratory Infection	710,151	652.9	Arterial Blood Gas Test, Chest X-ray, CT Scan, Peak Flow Meter, Pleural Fluid Culture, Pulse Oximetry, Spirometry, Sputum Test
Hypertension	445,834	409.9	Electrocardiogram (EKG), Echocardiogram, Ultrasound, CT Scan or MRI, Ambulatory Blood Pressure Monitoring (APBM), Home Blood Pressure Monitoring (HBPM)
Urinary Tract Infection	154,851	142.4	CT scan or MRI, Analyzing a urine sample at a lab, cystoscopy
Cancer	153,751	139.9	Linear Accelerator, Cyclotron, Brachytherapy

Animal Bites	149,815	137.7	Wound cultures, x-ray, CBC, Blood Cultures, Angiography, Photography
Skin Disease	119,110	109.5	Dermoscopy, Confocal Imagers, Skin biopsy
Acute Lower Respiratory Infection	97,507	89.6	X-ray scan, CT scan and Pulse Oximetry, Blood Test and Lab Test
Pneumonia	87,537	80.5	Chest X-ray, Pulse Oximetry, Sputum Test, CT Scan
Acute Watery Diarrhea	56,710	52.1	Flexible sigmoidoscopy or colonoscopy
Bronchitis	55,657	51.2	Chest X-ray, Sputum Tests, Pulmonary Function Test
TB All Forms	46,917	43.1	Sputum Microscopy, Gastric Washing
Kidney Disease (Undergo Dialysis Treatment)	35,000 – 40,000	35.1	Dialysis Machine and consumables

Source: Field Health Services Information System Annual Report 2020

CANCER PREVALENCE CASES IN PHILIPPINES

In Philippines, 139.9 people are suffering from cancer out of every hundred thousand people as of 2020. Moreover, the number of deaths recorded due to cancer reached to 92,606 in the country, whereas new cancer cases detected in 2020 reached to 153,751. On the other hand, 5-year prevalence rate of cancer (all age population) reached to 323.4 per hundred thousand people.

Subsequently, **Medilines have been one of the major leader in the segment providing various cancer radiation therapy equipment such as Linear Accelerator, Cyclotron and Brachytherapy and others, also accounted 90.4% share in the market in terms of revenue under the cancer therapy equipment market. Thereby, due to above rising prevalence of cancer sites in the country will lead to surge in the demand for cancer radiation therapy equipment in the country which will further lead to growth in demand of Medilines products in this segment**.

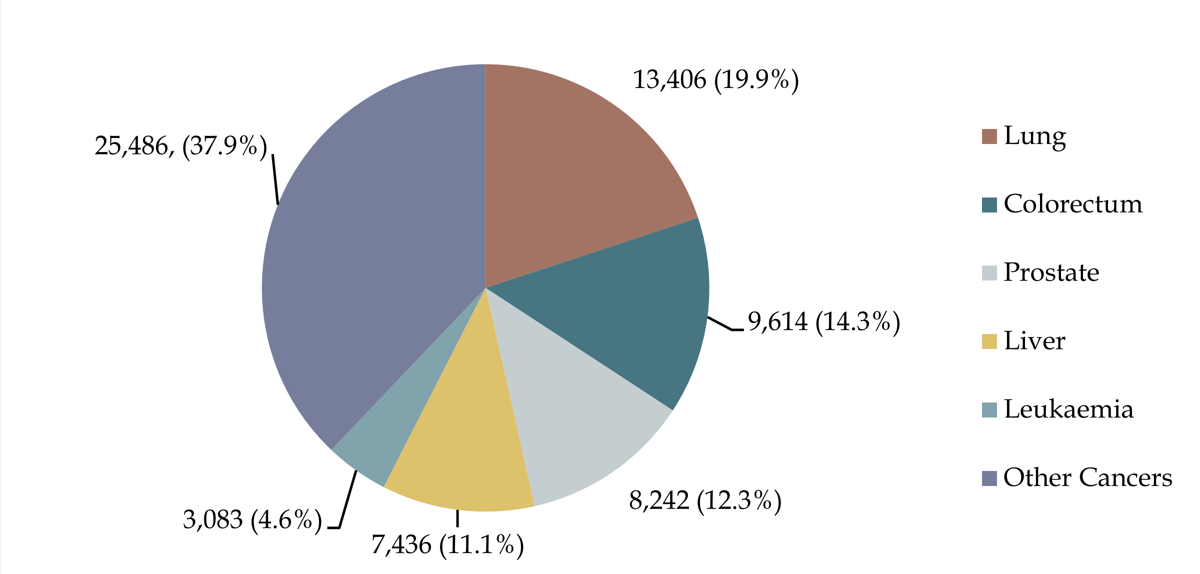
Table 5-5: Philippines Incidence, Mortality and Prevalence by Cancer Site on the Basis of New Cases, Deaths and 5-Year Prevalence (All Ages) in Number and Percentage (%), 2020

Type of Cancer Cancer	New Cases			Deaths			5-Year Prevalence (All Ages)	
	Number	Rank	(%)	Number	Rank	(%)	Number	Prop. (per 100 000)
Breast	27,163	1	17.7	9,926	3	10.7	85,206	156.19
Lung	19,180	2	12.5	17,063	1	18.4	20,625	18.82
Colon	11,315	3	7.4	6,109	4	6.6	25,916	23.65
Liver	10,594	4	6.9	9,953	2	10.7	10,964	10.01
Prostate	8,242	5	5.4	3,164	9	3.4	26,942	48.96
Cervix uteri	7,897	6	5.1	4,052	6	4.4	19,933	36.54
Thyroid	6,345	7	4.1	743	21	0.80	19,260	17.58
Rectum	5,846	8	3.8	2,982	10	3.2	14,577	13.30
Leukemia	5,795	9	3.8	4,370	5	4.7	16,835	15.36
Ovary	5,395	10	3.5	3,379	7	3.6	13,667	25.05
Corpus uteri	4,374	11	2.8	1,306	15	1.4	12,417	22.76
Non-Hodgkin lymphoma	4,140	12	2.7	2,415	12	2.6	11,065	10.10
Stomach	3,381	13	2.2	2,860	11	3.1	4,531	4.13
Pancreas	3,349	14	2.2	3,283	8	3.5	2,804	2.56
Nasopharynx	3,006	15	2.0	1,947	13	2.1	8,370	7.64
Kidney	2,384	16	1.6	1,229	16	1.3	5,785	5.28
Brain, central nervous system	2,037	17	1.3	1,752	14	1.9	5,311	4.85
Bladder	1,714	18	1.1	996	19	1.1	4,391	4.01
Lip, oral cavity	1,561	19	1.0	870	20	0.94	3,902	3.56
Larynx	1,550	20	1.0	1,020	18	1.1	4,124	3.76
Oesophagus	1,144	21	0.74	1,122	17	1.2	1,228	1.12
Multiple myeloma	766	22	0.50	649	22	0.70	1,754	1.60
Salivary glands	578	23	0.38	244	25	0.26	1,641	1.50
Hodgkin lymphoma	514	24	0.33	152	27	0.16	1,632	1.49
Oropharynx	465	25	0.30	272	23	0.29	1,106	1.01
Melanoma of skin	418	26	0.27	251	24	0.27	1,131	1.03
Testis	358	27	0.23	74	30	0.08	1,157	2.10
Gallbladder	286	28	0.19	215	26	0.23	355	0.32
Anus	203	29	0.13	92	29	0.10	495	0.45
Hypopharynx	184	30	0.12	107	28	0.12	284	0.26
Vulva	158	31	0.10	61	31	0.07	423	0.78
Penis	126	32	0.08	45	34	0.05	345	0.63
Vagina	97	33	0.06	49	33	0.05	249	0.46
Mesothelioma	63	34	0.04	57	32	0.06	69	0.06

Kaposi sarcoma	11	35	0.01	5	35	0.01	31	0.03
All cancer sites	**153,751**	**-**	**-**	**92,606**	**-**	**-**	**354,398**	**323.4**

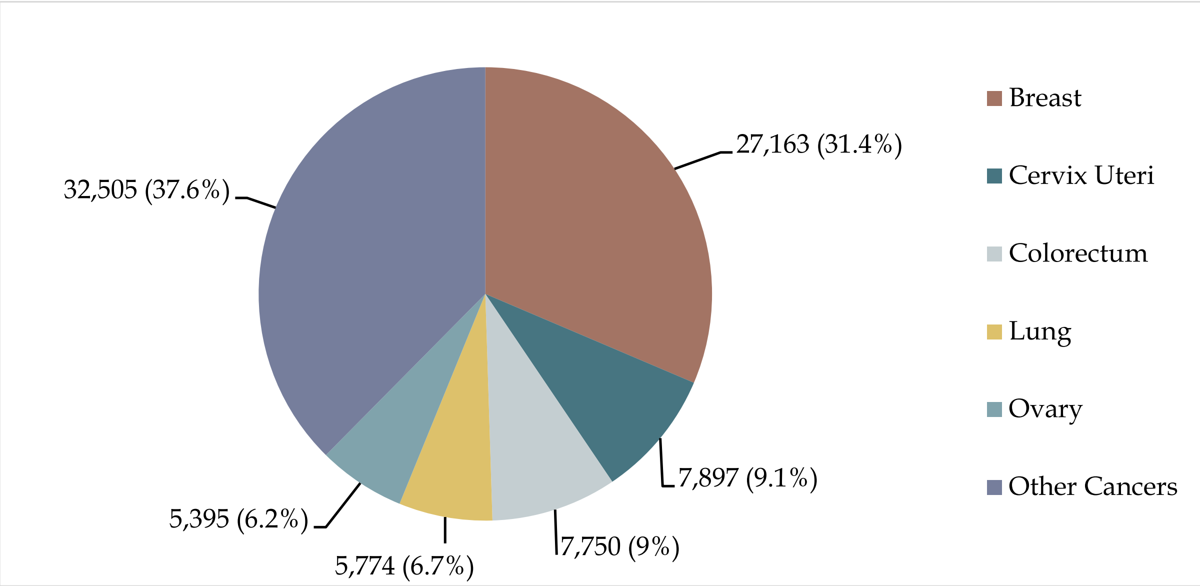
Source: International Agency for Research on Cancer (World Health Organization)

Figure 5-2: Philippines Cancer New Cases on the Basis of Type of Cancer in Males (All Ages) in Numbers and in Percentage (%), 2020



Source: International Agency for Research on Cancer (World Health Organization)

Figure 5-3: Philippines Cancer New Cases on the Basis of Type of Cancer in Females (All Ages) in Numbers and in Percentage (%), 2020



Source: International Agency for Research on Cancer (World Health Organization)

HOSPITAL EXPENDITURE – HEALTHCARE CATEGORY WISE (2014 – 2025)

General hospital constitute with both public and private hospitals and accounted for 80.3% share in the overall healthcare expenditure in Philippines in the year 2020. Out of this, Public general hospitals has contributed highest share of 43.5% in the general hospital healthcare expenditure about PHP 182,476 million in 2020, followed by the private general hospitals contributing remaining share of 36.8% around PHP 154,196 million in 2020. On the other hand, mental hospitals contributed a mere share of 0.4% in overall country's healthcare expenditure in 2020.

Moreover, in the near future it is anticipated that the healthcare expenditure share from general hospitals will increase and reach up to 80.4% by 2025. Henceforth, a higher demand of medical devices and equipment in Philippines will arise from the general hospitals, including both public and private.

Table 5-6: Philippines Hospital Expenditure on the Basis of Healthcare Category (General Hospital, Mental Health Hospital, Specialized Hospital, and Unspecified Hospital) in PHP Million, 2014 – 2020P

Hospital Expenditure (PHP Million)	2014	2015	2016	2017	2018	2019	2020P
General hospitals	**159,528**	**189,110**	**199,210**	**215,717**	**240,462**	**278,879**	**336,672**
Public general hospitals	77,611	94,729	99,703	109,634	128,313	150,930	182,476
Private general hospitals	81,918	94,381	99,507	106,083	112,149	127,949	154,196
Mental health hospitals	**767**	**938**	**939**	**999**	**1,177**	**1,431**	**1,635**
Specialized hospitals (Other than mental health hospitals)	**11,852**	**14,516**	**14,968**	**15,886**	**18,672**	**20,934**	**25,395**
Unspecified hospitals (n.e.c.)	**28,556**	**28,998**	**31,491**	**37,273**	**40,516**	**44,288**	**55,559**
Total	**200,703**	**233,563**	**246,608**	**269,875**	**300,827**	**345,532**	**419,261**

Source: Philippine Statistics Authority

Note: P refers to Provisional Numbers

Table 5-7: Philippines Hospital Expenditure on the Basis of Healthcare Category (General Hospital, Mental Health Hospital, Specialized Hospital, and Unspecified Hospital) in PHP Million, 2020P – 2025F

Hospital Expenditure (PHP Million)	2020P	2021F	2022F	2023F	2024F	2025F
General hospitals	**336,672**	**341,707**	**386,047**	**426,739**	**478,331**	**537,816**
Public general hospitals	182,476	185,889	211,168	235,133	264,517	299,026
Private general hospitals	154,196	155,818	174,879	191,606	213,814	238,790
Mental health hospitals	**1,635**	**1,663**	**1,872**	**2,079**	**2,349**	**2,643**
Specialized hospitals (Other than mental health hospitals)	**25,395**	**25,838**	**29,117**	**32,206**	**36,245**	**40,585**
Unspecified hospitals (n.e.c.)	**55,559**	**55,603**	**63,426**	**70,557**	**78,496**	**87,867**
Total	**419,261**	**424,811**	**480,462**	**531,581**	**595,422**	**668,911**

Source: Philippine Statistics Authority, Ken Research Analysis
Note: P refers to Provisional Numbers and F refers to Forecasted Numbers

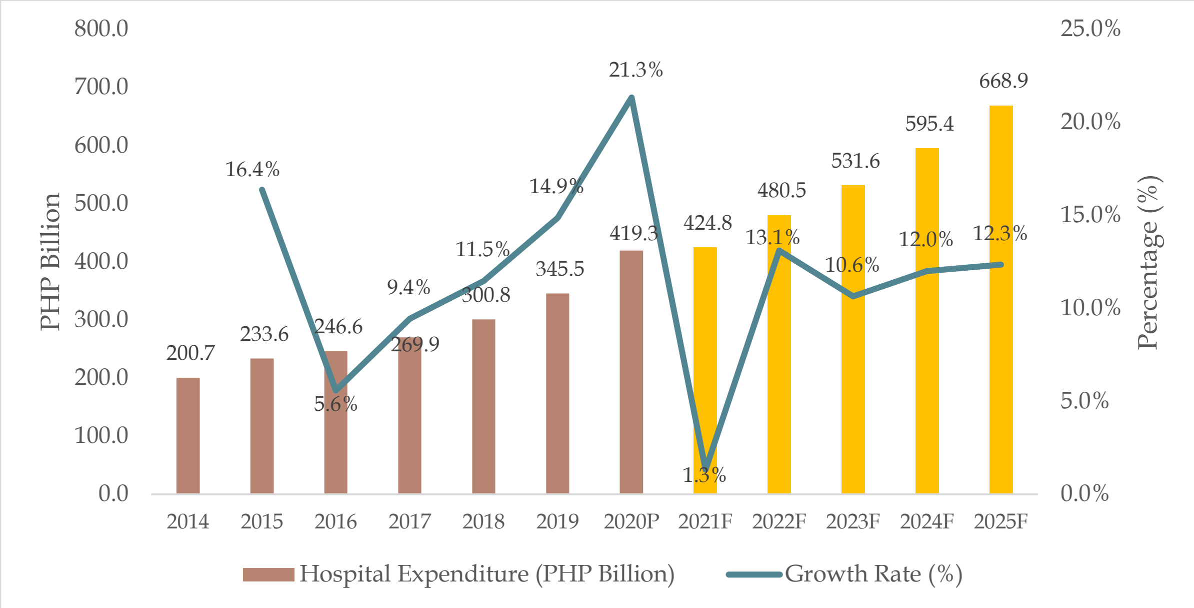
HOSPITAL EXPENDITURE, 2014 – 2025F

Hospital Expenditure in Philippines was evaluated at PHP 419.3 billion in 2020 at a YoY growth of 21.3%, largely due to rising government support with respect to Philhealth Scheme, and FOURmula One Plus for Health Strategy Map adopted by the Philippines Department of Health (DOH) in the year 2018.

Emergence of Covid-19 has further led to increase in the hospital expenditure in the country in the year 2020 at a YoY growth of 21.3%, largely due to increasing impact on the respiratory system of the humans through Covid-19 virus, which has forced the hospitals to increase their budget allocation for the purchase of medical equipment and consumables such as ventilators, gloves, face masks and shields, PPE Kits, coupled with other diagnostic equipment such as diagnostic monitor, anesthesia devices, mobile X-ray and ultrasound equipment.

In the near future, it is anticipated that the healthcare expenditure will increase and reach up to PHP 668.9 Billion at a CAGR of 9.8% (2020-2025). Growth in hospital expenditure will positively drive the fixed capital expenditure on medical equipment and diagnostic devices in the country. Furthermore, the impact of Covid-19 has further lead to surge in the demand of CT and MRI scan machines to detect the percentage impact of virus on respiratory organ (lungs) in a human body.

Figure 5-4: Philippines Hospital Expenditure in PHP Billion, 2014 – 2025F



Source: Philippine Statistics Authority, Ken Research Analysis

Note: P refers to Provisional Numbers and F refers to Forecasted Number

5.4. Market Outlook

HOSPITAL COUNT (GOVERNMNET AND PRIVATE), 2015 – 2020 AND 2025F

In Philippines, there are about 9,731 total healthcare units out which 5,409 are government owned and 4,322 are owned by private entities. Whereas, 1,915 hospitals are there in the country out of which 767 hospital are owned by the government and remaining 1,148 hospitals are privately owned as of 31st December 2020. Moreover, these hospitals are being further divided on the basis of certain category such as (Level 1, Level 2, Level 3 and Infirmary Dispensary).

There are 830 Level 1 hospitals in the country followed by 345 Level 2 hospitals and 117 Level 3 hospitals. While, there are about 623 dispensaries available in the country for treating people. On the other hand, in Philippines there are 2,897 Maternity Care Package Providers out of which 1,259 are of government type and remaining are the privately owned and operated.

Table 5-8: Philippines Hospitals Breakdown on the Basis of Type of Hospitals (Level 1, Level 2, Level 3, Infirmary, and Others) in Numbers, as of 31st December 2020

Hospitals	Government	Private	Total
Level 1 Hospital	340	490	830
Level 2 Hospital	44	301	345
Level 3 Hospital	54	63	117
Infirmary/Dispensary	329	294	623
Total Hospital (A)	**767**	**1,148**	**1,915**
Others Hospitals			
Animal Bite Treatment Centres	390	33	423
Ambulatory Surgical Units	2	175	177
Community Isolation Units	698	13	711
Drug Abuse Rehabilitation Centres	9	-	9
DOTS Package	1,722	87	1,809
Free Standing Dialysis Clinic	6	427	433
Family Planning Providers	313	719	1,032
SARS COV2 Testing Labs	67	47	114
Maternity Care Package Providers	1,259	1,638	2,897
Outpatient HIV/AIDS Treatment	118	35	153

Outpatient Malaria Package	58	-	58
Total Other Centre Providers (B)	**4,642**	**3,174**	**7,816**
Total Hospitals (A+B)	**5,409**	**4,322**	**9,731**

Source: Philippines Health Statistics

Note: Level 1 with minimum healthcare services,

Level 2 that offer extra facilities like intensive care unit and specialist doctors

Level 3 hospitals that have training programs for doctors, rehabilitation, and dialysis units, among others

NUMBER OF HOSPITALS BY REGION, 2015 – 2020 AND 2025F

As of June'21, there are about 1,384 hospitals in Philippines, out of which maximum numbers of hospitals are located in the Region IV-A (CALABARZON) around 228, followed by Central Luzon accounting 196 hospitals and 186 hospitals situated in National Capital Region (NCR).

In the near future, it is anticipated that the regions such as Autonomous Region in Muslim Mindanao, Cordillera Administrative Region (CAR), MIMAROPA, Soccsksa Region, and Caraga region will have high growth rate above ~28% in terms of opening up of new hospitals during the period by 2025.

Table 5-9: Philippines Hospitals Breakdown on the Basis of Region in Numbers, 2015, as of June'21, and 2025F

Region Name	2015	Jun-21	2025F
Autonomous Region In Muslim Mindanao (Armm)	19	31	41
Cordillera Administra Tive Region (Car)	23	34	45
National Capital Region (Ncr)	160	186	206
Region I (Ilocos Region)	86	80	84
Region II (Cagayan Valley)	59	71	81
Region III (Central Luzon)	168	196	223
Region IV-A (CALABARZON)	208	228	237
Region IV-B (MIMAROPA)	23	32	42
Region V (Bicol Region)	51	55	59
Region VI (Western Visayas)	62	65	69
Region VII (Central Visayas)	57	64	70
Region VIII (Eastern Visayas)	43	51	59
Region IX (Zamboanga Peninsula)	44	44	47
Region X (Northern Mindanao)	65	78	89
Region XI (Davao Region)	54	67	76

Region XII (Soccsksa Rgen)	56	79	101
Region XIII (Caraga)	17	23	30
Total	**1,195**	**1,384**	**1,558**

Source: Philippine Statistics Authority, Ken Research Analysis
Note: F refers to Forecasted Numbers

KEY GROWTH DRIVERS

Table 5-10: Philippines Healthcare Industry Key Growth Drivers

Key Growth Drivers	Rationale
Growing Demand for Radiography Devices	• General radiography devices and aids are in high demand in the Philippines. **High incident rates** of lung diseases, heart diseases, kidney diseases, hypertension, and other respiratory diseases prompt hospitals to make enhancements for medical equipment, thus, **increasing the demand for general radiography devices such as linear accelerators, electro-cardiographs, ultrasonic scanning machines** (ultrasound), magnetic resonance imaging, x-ray and radiation equipment, breathing appliances, electrocardiogram equipment, dialysis machines, and computed tomography apparatuses.
Medical Tourism	• The **price competitive medical tourism** market of the Philippines has witnessed more healthcare services being provided to people in the recent past. Lack of infrastructure made the market underdeveloped; which is now positively changing due to skilled physicians, accredited hospitals, English speaking nurses and relatively inexpensive medical facilities of the country which makes it a global hub for medical tourism. **Philippines is ranked 24th among the world's top medical tourism destinations in 2020 with 64.99 MTI** (medical tourism Index) as per Global Healthcare Resources & International Healthcare Resource Center. • **About, 80,000 to 250,000 foreign patients** annually come from various countries such as Sri Lanka, East Asia, the Gulf States, Europe, North and South America, the Pacific Islands, Australia and the Pacific Islands. Moreover, Filipino workers and expatriates travel back home to the Philippines to have their medical procedures. • In addition, in order to promote medical tourism of the Philippines, the Department of Health of the government along with Department of Tourism of the Philippines initiated Philippine Medical Tourism Program in 2006 so as to attract foreign patients to the medical services of the country. **Government even collaborated with various private medical institutions for the purpose of quality healthcare and safety of international patients**.

Growth in Telemedicine Industry of Philippines	• There has been a significant expansion in the telemedicine industry of the Philippines. National Telehealth Center, led by University of the Philippines Manila and National Institutes of Health, has played a crucial role by bringing in modern technological solutions to the rural and urban areas of the country. • **The National Telehealth Service Program of the Telehealth Center involves physicians available in rural or remote areas to connect to tertiary hospitals of the metro cities via emails and calls for the purpose of tele-consulting**. Globe Telecom offers such medical consultations with a telemedicine hotline, KonsultaMD to the rural population residing in the country and busy professionals. • St. Luke's Medical Center has its own application, MedConnect which enables the patients to book appointments from their place and access health information using their smartphones. • Telemedicine industry of the **Philippines has played a crucial role in connecting primary hospitals and clinics of remote areas with specialty hospitals set up in metro cities**. This allows the hospitals to expand their catchment area and make more people use the advanced medical procedures of tertiary and specialty hospitals, thereby driving the overall medical device market of the Philippines. **Moreover, Covid-19 has further led to rapid surge in the usage of application of Telemedicine, such as:** a) **Bayanihan Operations Centre in University** of The Philippines planning COVID bed capacity across the country. b) **E-Prescription services have come into use**, where people started opting for virtual consultation with the doctors regarding their health issues as doctors are providing E-prescriptions through which one can get the medicine from the pharmacy store, rather than visiting the hospitals for consultations and waiting for their turn in OPD's (outpatient department lobby), as spread of Covid-19 have been a major fear among the people.

Source: Ken Research Analysis

Table 5-11: Comparison of Most Prevalent Medical Procedures in Various Countries on the Basis of Price in USD, 2020

Procedures	Philippines	US	India	Thailand	Singapore
Heart Bypass	8,000 -26,000	85,000 - 140,000	6,700 - 9,300	11,000	16,500
Angioplasty	4,200-21,000	~60,000	5,000 - 7,000	13,000	11,200
Hip Replacement	5,500 – 7,000	45,000	5,800 - 7,100	12,000	9,200
Knee Replacement	5,500 - 8400	40,000 – 45,000	6,200 - 8,500	10,000	11,100

Source: Ken Research Analysis

KEY CONSTRAINTS

Table 5-12: Philippines Healthcare Industry Key Constraints

Key Constraints	Rationale
Coping with Newer Technology	• The other challenge faced by **Philippines medical device market is tackling the emerging technologies in the medical equipment market**, as most of the medical devices consumed in Philippines are manufactured and imported from foreign countries. Hence, the **new devices which are being developed domestically have to compete with the current devices available in the markets** by providing better facility at lower cost and advance technology. Therefore, the newly innovated devices must be able to overcome this market barrier as the success of the product will be based on its market positioning.
Continual Change in Price of the Medical Devices	• The fact that medical devices undergo continuous research and development, they have a **much shorter product life-cycle compared to pharmaceutical products**. This is especially true for electronic medical devices, where the product life-cycle is now around one to three years. • One **drawback of the continuous development of medical devices is that older technologies can sometimes appear more cost-effective** since prices of older technologies drop considerably once a new technology has been introduced. This means that there are significant methodological difficulties with conducting economic evaluations for medical devices.
Distribution Challenges For Medical Equipment & Devices In Philippines	• **Fragmented Distribution:** There are very few distributors that have nationwide coverage in Philippines. Companies need to forge multiple relationships to establish a nation-wide network spanning urban as well as rural areas. Many of the suppliers currently, has limited reach to only urban regions such as Metro Manila, Luzon and others. • **Non performing distributors:** Medical device companies, particularly the smaller ones, often forge "exclusive" relationships with distributors in the regions allotted to them. A non-performing distributor can prove disastrous for the company. Some distributors (of low technology products) have even leveraged their understanding of the product and the market to manufacture "copied" versions of the products. Evaluation of distributors is therefore extremely critical. • **Unethical practices:** An additional consideration is the existence of unethical practices in the distribution of medical devices. Distributors are known to bribe decision makers and doctors at hospitals to buy their products, which are sold at very high margins. In some cases distributorships are owned

	by doctors themselves. Recently a couple of MNCs were penalized for looking the other way, while their distributors paid bribes paid to doctors. • **Customer intimacy:** Suppliers often cannot rely on a network of distributors alone. In a new market, they need to gain a deep understanding of how their products are being used, customer dynamics, end-user pricing, and others, in order to fine-tune their strategies. Distributors do not always share this detailed information with the company. So, many companies have their own sales force in addition to a network of distributors. • **After-sales service:** Availability of good after sales service is very important for hospitals. Medical device and equipment manufacturers have found this to be a big challenge. Having a trained maintenance engineer who can address the issues fairly quickly is expensive unless the installed base of the equipment in a particular area is large enough. In semi urban and rural areas, this is a huge pain point, but even in the large cities it is difficult.
Migration of health professionals	• Philippine's is a well-known supplier of doctors and nurses worldwide, based on qualifications and command of the English language. However, health worker's migration is also jeopardizing the development of Philippines own health system. **Despite many different policy efforts to reduce the flow, in recent years still an average of 13,000 nurses migrate every year. Many stay for substantial periods overseas before returning or try to naturaliz**e (in particular in the USA). • Both push (for instance: wages, job positions) and pull-factors (wages and overseas experience) contribute to ongoing migration. **In 2020, migration was put on hold due to pandemic situation.**

Source: Ken Research Analysis

6. Industry Analysis

6.1. Trends and Developments

NEW HEALTHCARE INFRASTRUCTURE PROJECTS

Over the last few years, **a number of private sector companies and individuals have invested in hospital development across the Philippines**. Several investment companies have acquired stakes in the healthcare sector, providing much-needed capital for facilities to upgrade and modernize equipment. Real estate developers have also partnered with well-known healthcare providers to construct health and wellness centers in and around communities that they are building, to attract customers, thus, also providing demand for medical equipment and devices.

Moreover, **the University of the Philippines – Philippine General Hospital aims to expand medical services by building new Cancer Center and a world-class 700-bed hospital**. Both projects are a part of the government's line-up of critical healthcare projects under PPP scheme, providing world-class medical facilities especially for vulnerable citizens.

The first project is the Cancer Center with 200 to 300-bed, will be located in the Philippine General Hospital Manila and will be the first dedicated cancer hospital in the national capital region. The Cancer Center will be equipped with surgical oncology operating rooms, diagnostic imaging and laboratories with multi-specialty outpatient care.

The second project is Diliman Project, a world-class 700-bed hospital with integrated healthcare, teaching and research facilities and specialized services that are not usually available in other public hospitals.

Moreover, existing hospital groups, such as Metro Pacific Group and Ayala Corp, are on an expansion binge either through acquisitions of existing facilities or construction of new hospital projects, which is likely to provide new opportunities for purchases of quality medical equipment. For instance, Conglomerate Metro Pacific Group, which is a strategic partner of Singapore's sovereign wealth fund, is actively looking for more investments in the Philippine healthcare sector.

The conglomerate is seeking to acquire **about 15 more hospitals to achieve the benchmark of 5,000 beds**. The company in 2016 said it would invest in 10 to 15 hospitals to add around **2,000 more beds and expand existing medical facilities by another 700 to 800 beds** to increase its presence in the sector across the country.

The Qualimed Hospital Network, a network of healthcare facilities owned by the **Ayala Corp, is also expanding. The company plans to expand its portfolio to 10 hospitals by 2020,** and it is considering locations, such as **Davao, Cebu, Cavite, Balintawak, and Arca South. In the short term, it is also planning to build a 200 to 300-room hospital in Balintawak in the northern part of Metro Manila**, and another similarly-sized hospital in Arca South in the southern part of Metro Manila. The upcoming hospital and health facilities modernization and construction projects are likely to drive demand for new medical equipment.

Furthermore, it is anticipated that by **2025 there would be about 174 hospitals would be added in the country**, out which some of the key regions will have more than 20 hospitals opening up in the near future includes – Central **Luzon (27 hospitals), Soccsksa Rgen (22 hospitals), and National Capital Region (20 Hospitals)**.

IMPACT OF COVID-19 ON PHILIPPINES MEDTECH INDUSTRY

COVID-19 has put the medtech industry at center stage with unparalleled demand for diagnostic tests, personal protective equipment (PPE), ventilators, and other critical medical supplies. In addition to the extraordinary measures underway to rapidly ramp up manufacturing capacity and capabilities, medtech leaders has also started looking outside their normal sector boundaries to explore creative solutions to further supplement capacity, such as partnerships with companies outside the sector, increasing partnerships with distributors, open-source equipment design, and deployment of medically trained employees to support public-health needs.

The medtech industry is also being affected by the dramatic drop in elective medical procedures, many of which are being postponed or cancelled so that hospitals can focus resources on treating COVID-19 patients. In fact, it has been observed that, there has been a 40–50% decline in elective procedures in Philippines in the year 2020 ***(Source: Interviews with the Medical Device Industry Experts)***.

Pandemic has influenced capital purchases across several major medtech product categories in the hospitals. Three categories of capital equipment purchasing behaviors currently emerging in the hospitals includes:

Accelerated Capacity: This applies to equipment that is essential to save the lives of critical COVID-19 patients. This equipment primarily includes ventilators and PPE Kits. These equipment have faced universal shortages. Likewise, equipment to diagnose, monitor, and treat COVID-19 patients such as anesthesia devices, mobile X-ray and ultrasound equipment, and infusion pumps have faced localized shortages in supply. Therefore, hospitals have increased their budgets in purchasing these equipment.

Maintained Capacity: This applies to equipment used in COVID-19 treatment or that requires replacement such as CT machines, dialysis equipment, or ECMO machines. Purchasing cycles for these equipment are generally already planned and part of existing capital expenditure budgets.

Deprioritization: This applies to equipment which are not useful in COVID-19 treatment such as MRI, surgical (both minimally invasive and robotic), and mammography equipment and likely at sufficient capacity in the hospitals.

EQUIPMENT AND DEVICES FOR CANCER CENTERS

There are around 24 hospitals under the Department of Health (DoH) that will be upgraded and turn into regional centers for cancer as mandated by the National Integrated Cancer Control Act (NICCA), according to Dr. Beverly Lorraine C. Ho, director for the Disease Prevention and Control Bureau of DoH (as of July 2021). The new centers are expected to have linear accelerators, treatment planning systems, computerized tomography stimulators and brachytherapy units. The strategy to establish new centers provides entry opportunities for other companies with the technological solutions for cancer treatment.

DEMAND FOR REFURBISHED/USED EQUIPMENT

There is a growing demand for refurbished medical equipment in the Philippines. While **public and government-owned hospitals tend to purchase only new equipment, the private sector is divided between the market segments of new and refurbished medical equipment**. Private hospitals and clinics outside metropolitan Manila often tend to purchase used and refurbished equipment, such as x-rays, cardiology and surgery devices, given their limited budgets. To date, **approximately 55% of all medical equipment supplied to hospitals and clinics are refurbished** ***(Source: Interviews with Principal and Distributor for Medical Devices)***. With the growing demand for extensive healthcare coverage outside the main urban centers, Philippines provide opportunities to tap into this emerging market segment.

EQUIPMENT REPLACEMENT & ENHANCEMENT

There is also a market demand for medical equipment replacement. **The Philippine Health Insurance Corp's (PhilHealth) mandate to increase its coverage from 94% to 100% of the population**, as it is expected to drive demand for quality healthcare that is both affordable and accessible. In anticipation of surge in demand for healthcare services, the Philippines have launched an ambitious programme to develop and upgrade its healthcare facilities to ensure equitable access to healthcare across the country.

The Department of Health - Office of the Secretary has a total allocation of PHP 127.29 billion for CY'2021 under the National Expenditure Plan. This is 27% higher than the CY'2020 General Appropriations Act. On top of this, a total of PHP 608.8 million is to be charged under the Special Account in the General Fund (SAGF). Of this amount, PHP 91.7 million is for the Bureau of Quarantine (BOQ) and PHP 517.03 million for the Food and Drug Administration (FDA).

About **25 public hospitals listed under the Public-Private Partnership (PPP)** programme are expected to benefit from the modernization. Some requirements of the hospitals under the PPP programme are linear accelerators for twenty four cancer centers, dialysis units, various imaging equipment, and devices for treating kidney, heart, respiratory, and diabetes diseases. **The first beneficiary is the Philippine Orthopedic Hospital, which PPP hopes to transform into the country's primary center for bone and joint diseases on par with global standards**. To achieve this, the requirements are for more efficient healthcare services, new technology and equipment replacement. As, the Philippines are almost entirely reliant on imports of medical devices, abundant opportunities are available for medical device companies to meet the country's growing demand.

CURRENT HEALTHCARE REQUIREMENT

The Philippines **has made significant investments and advances in health in recent years. Rapid economic growth and strong country capacity have contributed to Filipinos living longer and healthier lives**.

Current demand reflects healthcare requirements for growing incidences of hypertension, diabetes/kidney diseases, TB/respiratory ailments, cancer, and some incidence of HIV/AIDS. Products with high sales potential for suppliers include electro-cardiographs, computed tomography apparatus (CT scan), magnetic resonance imaging (MRI) equipment, ultrasonic scanning machines (ultrasound), X-ray and radiation equipment, breathing appliances, and linear accelerators. **Demand for diagnostic laboratory products, supplies, and biological rapid test kits also exist.**

Requirements for efficient healthcare services, new technology, and equipment replacement drive market growth. All hospitals must continue upgrading facilities to remain competitive.

6.2. Issues and Challenges in Philippines Medical Devices Market

SHORTAGE OF NURSES IN HOSPITALS

The Philippines is a major exporter of healthcare professionals (6th largest contributor of doctors and top contributor of nurses to OECD countries), **but struggles to ensure adequate availability within the country, with an estimated shortage of 23,000 nurses in the Philippines in 2020.** Major Push factors include low salary and poor working conditions, but tele-health offers potential to connect this diaspora of healthcare professionals with needs back in the Philippines.

According to a national study published in 2018, as many as three out of four local government units lack health workers. **The Philippines' average nurse to population ratio is one to 5,000. But in some geographically isolated areas, it is one to 20,000 in the year 2020**. Moreover, conditions got worse when the pandemic hit and COVID-positive nurses needed to be quarantined.

On the other hand, during April 2021, the World Health Organization expressed alarm at the situation, as about **13% of the country's COVID-19 cases were healthcare workers, compared with the region's average of 2% to 3%, and a year later, 141 health workers in the Philippines** have lost their lives in the line of duty, according to Department of Health statistics as of 30th April 2021.

INCOME DISPARITY

In Philippines, poor salary compensation is not a new issue for nurses offering services in the country, as they have fought for higher wages for almost two decades.

Under the Nursing Act of 2002, nurses' minimum base pay was pegged at salary grade 15, this works out at PHP 33,575 (USD 674.5) a month, a mid-range grade in a 33-grade table used to determine government employees' pay.

But for **18 years, junior nurses entered public hospitals at salary grade 11, or PHP 21,000 (USD 421.9)/month.**
On the other hand, in the United Kingdom, they can earn between £1,950 (PHP 136.4 Thousand) and £2,250 (PHP 157.4 Thousand)/month, according to Philippine recruitment agency Abba Personnel Services. In the United States, they can potentially earn around **USD 4,000 (PHP 201.8 Thousand) to USD 8,000 (PHP 403.5 Thousand)/month**, together with overtime pay.

RISING OUT-OF-POCKET EXPENDITURES

One of the most important barriers to healthcare is the frequent need for **households to pay out of pocket for healthcare expenditure which were about 53.9% of health expenditure in 2018** ***(Source: World Bank)***, compared **to 37% in Indonesia and 12% in Thailand. PhilHealth-covered services focus on inpatient care,** hence medicines are the main driver of out-of-pocket spending.
These payments not only deter the use of needed services but also impoverish families. In much of the region, public funding of healthcare is low, forcing most households to pay essential healthcare bills out of their own pockets.
These payments hit the poor particularly hard. The poor tend to have more children, and those children often suffer from worse health. **These costs not only impoverish but can also increase inequity in healthcare utilization and in overall health outcomes.** Understanding to what extent financial costs burden and impoverish families, as well as their importance in reducing access to critical services, can help the country to identify the scale and intensity of the problem, possible policy responses, and likely budgetary implications for improving equity and access to essential health care which in turn will increase the use of medical devices in the country.

6.3. Regulatory Environment in Philippines Medical Device Market

The regulations of Philippine medical device industry are in compliance with the norms of the United States. The medical device market is primarily regulated by the Bureau of Food and Drug Administration, which was created to oversee the efficacy, quality, safety, and purity of health products. The bureau regulates the trade and distribution of medical device products as well as the approval of medical device establishments - whether a distributor, importer, wholesaler, exporter, or manufacturer. In order to have products sold efficiently in Philippines, it is important for companies to find a good dealer. According to local regulations, all dealers and all foreign medical devices must be registered with the bureau.

MEDICAL DEVICE REGULATIONS

The FDA, formerly the Bureau of Food and Drugs, was created under the Department of Health to license, monitor, and regulate the flow of food, drugs, cosmetics, medical devices, and household hazardous waste in the Philippines.

Department of Health defines medical device in the Philippines as any instrument, apparatus, implement, machine, appliance, implant, in vitro reagent or calibrator, software, material or other similar or related article intended by the manufacturer to be used, alone or in combination, for human beings for one or more of the specific purpose(s) of:

- diagnosis, prevention, monitoring, treatment or alleviation of disease,
- diagnosis, monitoring, treatment, alleviation of or compensation for an injury
- investigation, replacement, modification or support of the anatomy or of a physiological process,

- supporting or sustaining life
- control of conception
- disinfection of medical devices
- providing information for medical or diagnostic purposes by means of in-vitro examination of specimens derived from the human body; and
- Which does not achieve its primary intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted in its intended function by such means.

Center for Device Regulation, Radiation Health and Research (CDRRHR) is the FDA arm created to oversee the regulation of medical equipment and devices.

The classification system of medical devices in the Philippines is categorized as Class A, B, C, and D, where class A is the classification for the low risk medical devices and class D for the highest risk medical devices. The CDRRHR is authorized to reclassify certain devices when the level of risk of the device is changed by a certain incident in the manufacture, distribution or use of the device upon proper consultation with the advisory committee set forth by the FDA. The classification is based on the intended purpose of the medical device, mode of operation and the user, and also the device technologies. The table below provides a broad overview of the classification system with some examples:

Table 6-1: Classification of Medical Devices by Risk Category on the Basis of Risk Level (Low, Medium and High) and Devices Examples

Category	Risk Level	Devices Examples
Class A	Low	Bandages/ Wheelchairs/ Face masks/ Cotton balls
Class B	Low – Mid	Mid Contact lenses/ dental crowns/ Hearing aids
Class C	Mid – High	High X-ray machines/ Lung ventilators/ Hip implants
Class D	High	Pacemakers/ Heart stents/ Breast implants

Source: Asean.org, Ken Research Analysis

A foreign company must provide complete documentation for its equipment to the distributor who will register them. Complete and correct documentation determines the outcome of registration and the length of registration process. Companies wishing to export their medical devices to the Philippines should also review the list of devices, which are subject to registration, under the FDA Memorandum Circular 2014-005.

GENERAL IMPORT PROCEDURES

All articles, when imported to the Philippines, are subject to duty upon each importation, even though previously exported there except as otherwise specifically provided for in the Tariff and Customs Code. Importation begins when the carrying vessel or aircraft enters the jurisdiction of the Philippines with the intention to unlade therein. Importation is deemed terminated upon payment of the relevant duties, taxes and other charges, either related to the imported articles, or to the charges and taxes related to the entry into the Philippines. Duties are usually calculated ad valorem, and specified in the Philippines Customs Code. For the calculation of import duties, the Philippines currently use the system of value based on the price of domestic consumption. Import taxes vary from 3 to 50% according to the product.

CERTIFICATE OF LISTING:

Importers can apply for a Certificate of Listing that is issued to a medical device intended for research, clinical trial, exhibit, donation, etc. and that is not intended for sale in the Philippines. The requirements for the Certificate of Listing include:

- Notarized Application Form
- Notarized letter to the Director, Centre for Device Regulation, Radiation Health and Research, stating that the medical device will be used solely for personal use, research, analysis, exhibit, or is being

donated by a certain organization and is not intended for sale.

- Certificate of Product Notification or Certificate of Product Registration or any equivalent document attesting to the safety and effectiveness of the device issued by the regulatory agency in the country where the device will come from.
- For a donated medical device, a certified true copy of the deed of donation and deed of acceptance.
- Copy of bill of lading, proforma invoice, or official receipt of purchase.

MEDICAL DEVICE IMPORT LICENSE

A company importing medical devices into Philippines is required to have a License to Operate and a Certificate of Product Registration. If the company complies with the requirements and passed the inspection, a license to operate will be issued. The company is given sixty days to comply with all the deficiencies. Non-compliance will result to temporary stoppage of the selling of medical devices.

Companies with a valid license to operate as a medical device distributor/ importer/wholesaler can file an application for product registration. The application will be reviewed and evaluated in accordance with the requirements. All complying applications will be issued a certificate of product registration. All non-complying applications will be issued a notice of deficiency. Each company is given a non-extendable ninety (90) days compliance period. All those who will not be able to comply will be disapproved but will be given a period of sixty (60) days to file for re-application and comply with all the deficiencies. In the case that after this period the application did not satisfactorily comply with all the requirements, the application will be disapproved, and the company needs to file again for an initial application.

The Centre for Device Regulation, Radiation Health, and Research (CDRRHR) under the Food and Drug

Administration (FDA) is the recommending office for approval of the certificate of product registration.

Foreign suppliers usually appoint a licensed distributor to represent their interests in the Philippines. Usually, distributors handle all aspects of importation from registration of the products, to obtaining a license and a clearance. Distributors become responsible for the equipment (capability, safety, market performance, and after-sales service) and, thus, prefer exclusive contracts with foreign suppliers.

The average tariff rate for Medical equipment is 3% plus a 12% value-added tax. The VAT is based on the valuation determined by the Bureau of Customs for the application of customs duties, plus those duties themselves, excise taxes, and other charges (i.e. charges on imports prior to release from customs custody, demurrage fees, including insurance and commissions). The Bureau of Customs is responsible for customs valuation, classification, and clearance functions.

IMPORT DOCUMENTATIONS

Import documents required for shipments to the Philippines include:

- Commercial Invoice/Pro-forma invoice;
- Bill of Lading (for sea freight) or air waybill (for air freight);
- Certificate of Origin (if requested);
- Packing list;
- Duly notarized Supplemental Declaration on Valuation (SDV);
- Documents as may be required by rules and regulations, such as:
- Import Permit or Clearance;
- Authority to Release Imported Goods (ATRIG);
- Proof of Origin for Free Trade Agreements (FTAs);
- Copy of an Advance Ruling, if the ruling was used in the goods declaration;

- Load Port Survey Reports or Discharge Port Survey Reports for bulk or break bulk importations;
- Document evidencing exemption from duties and taxes;
- Others, e.g. Tax Credit Certificate (TCC) or Tax Debit Memo (TDM).

For a Letter of Credit (L/C) transaction, a duly accomplished L/C, including a Pro-forma Invoice and Single Administrative Document (SAD) for Advance Customs Import Duty (ACID) is required. A Pro-forma Invoice is required for a non-L/C transaction e.g. Draft Documents against Acceptance (D/A), Documents against Payment (D/P), Open Account (OA) or Self-funded documentation.

Consumer Protection

Consumer Protection

The Consumer Act of the Philippines is the policy of the State that protects the interests of the consumer, promotes his general welfare and, establishes standards of conduct for business and industry. The Department of Health is the implementing and regulating agency under the Consumer Act for food, drugs, cosmetics and medical devices.

Any consumer product offered for importation into the Philippines shall be refused if such product:

- Fails to comply with an applicable consumer and product quality and safety standard.
- Is or has been determined injurious, unsafe and dangerous.
- Is substandard and has material defect.

Two separate bureaus under the Department of Trade and Industry, namely the Bureau of Philippine Standards (BPS) and the Philippine Accreditation Bureau (PAB), oversee quality standards and accreditation in the country.

The BPS develops, promulgates, implements, and promotes standardization activities as mandated by Republic Act No. 4109 (Standards Law) and Republic Act No. 7394 (Consumer Act of the Philippines). The BPS

maintains its certification to ISO 9001 from Certification International Philippines, Inc.
The PAB, formerly Philippine Accreditation Office, is responsible for the accreditation of conformity assessment bodies in the Philippines.

QUALITY STANDARDS

Standards Development

The BPS formulates Philippine National Standards or adopts relevant international or foreign standards to help industries produce quality products or services and raise productivity. These standards also help consumers evaluate product performance and safety. Some of these include the family of international standards on Quality Management System (ISO 9000), Environmental Management System (ISO 14000), and Quality System for Calibration and Testing Laboratories (ISO 17025) that apply to both the manufacturing and services sectors. The Philippines is a member to the International Organization for Standardization or ISO, the world's largest developer of voluntary international standards, composed of 161 member countries which are national standards bodies around the world. ISO develops international standards on quality, safety and efficiency of products, services, and systems from technology to food safety, agriculture and healthcare.

Product Testing

BPS offers third-party testing of electrical, electronic, chemical, mechanical, calibration, and consumer products through its BPS Testing Centre to verify conformity to Philippine National Standards requirements that support the Philippine Standard (PS) and Import Commodity Clearance (ICC) product certification schemes.

Labeling and Marking

To guide the consumers in the purchase of products, including electrical, and electronics, consumer and chemical and construction and building materials, consumers are encouraged to look for the PS and ICC marks on the product or, if not feasible because of the nature and/ or size of the product, on its accompanying packaging.

Product Certification

The BPS implements mandatory product certification schemes for certain products divided into categories, namely, building and construction, electrical and electronics, chemical and consumer products. The BPS subjects these products under its list of Philippine National Standards for mandatory certification to inspection and testing methods prior to distribution and sale in the Philippine market with the necessary PS or ICC marks.

Accreditation

The PAB is responsible for the accreditation of conformity assessment bodies in the Philippines. It is recognized internationally with its membership to the International Accreditation Forum (IAF), International Laboratory Accreditation Cooperation (ILAC), Pacific Accreditation Cooperation (PAC), and Asia Pacific Laboratory Accreditation Cooperation (APLAC). PAB is also a signatory to the Multilateral Recognition Arrangement for Quality Management System and Environmental Management System of PAC and IAF; and Mutual Recognition Arrangement for testing and calibration of APLAC and ILAC.

Quality Standard for Medical Devices

All importers and distributors of medical devices in the Philippines are required to submit a Government certificate attesting to the status of the manufacturer's competency and reliability of the personnel and facilities or Quality Systems Certificate of approval or compliance certificate with ISO 9000 series or ISO 13485. For imported medical devices, the certificate shall be duly authenticated by the territorial Philippine Consulate.

The certificate of medical device notification and certificate of medical device registration are documents issued by the CDRRHR for the importation and distribution of medical devices in the Philippines.

- Certificate of Medical Device Notification – refers to the authorization issued to a medical device that complies with all the requirements for the import and distribution of Class A medical devices in the Philippines.
- Certificate of Medical Device Registration– refers to the authorization issued to a medical device that complies with all the requirements for the import and distribution of Class B, C, and D medical devices in the Philippines.

GOVERNMENT TENDERS

The Philippine Government Electronic Procurement System (PhilGEPS) is the single, centralized electronic portal that serves as the primary and definitive source of information on government procurement in the Philippines. Government agencies, as well as suppliers, contractors, manufacturers, distributors and consultants, are mandated to register and use the system in the conduct of procurement of goods, civil works and consulting services. PhilGEPS makes available information on all government procurement and bid opportunities, allows obtaining bid documents electronically, gives access to government agencies' annual procurement plans, uploads product catalogue advertisements, sends automatic notifications for new opportunities and lets suppliers print their own PhilGEPS Certificate of Registration.

As a general rule, eligible bidders should be at least 60% Filipino Equity. The exception however is that foreign bidders are eligible to participate when provided for under treaty or international agreement; when the foreign supplier is a citizen, corporation, association of a country, the laws or regulations of which grant reciprocal rights or privileges to citizens, corporations, associations of the Philippines; when the goods sought to be procured are not available from local suppliers; or when there is a need to prevent situations that defeat competition or restrain trade.

Government Procurement

The national government, its departments, bureaus, offices and agencies, including state universities and colleges, government-owned and/or-controlled corporations, government financial institutions and local government units are in charge of procuring their own good services. To promote transparency and efficiency, information and communications technology shall be utilized in the conduct of procurement procedures. Procuring entities are required to post all procurement opportunities, results of bidding and related information in the PhilGEPS bulletin board.

The Procuring Entity or its duly authorized representative, in order to promote economy and efficiency, may resort to any of the following methods of procurement:

- Competitive Bidding - a method of procurement which is open to participation by any interested party and which consists of the following processes: advertisement, pre-bid conference, eligibility screening of prospective bidders, receipt and opening of bids, evaluation of bids, post-qualification, and award of contract. This is the usual method of procurement by government entities.
- Limited Source Bidding, otherwise known as Selective Bidding – a method of procurement that involves direct invitation to bid by the procuring entity from a set of preselected suppliers or consultants with known experience and proven capability relative to the requirements of a particular contract.
- Direct Contracting, otherwise known as Single Source Procurement – a method of procurement

that does not require elaborate bidding documents because the supplier is simply asked to submit a price quotation or a pro-forma invoice together with the conditions of sale, which may be accepted immediately or after some negotiations.

- Repeat Order – a method of procurement that involves a direct procurement of goods from the previous winning bidder, whenever there is a need to replenish goods procured under a contract previously awarded through competitive bidding. ***(The list of recent government tenders for medical devices has been provided below in the Appendix section for this research)***

BARRIERS

Zero Barriers: There are no barriers to the sale or purchase of medical equipment of acceptable international standards. However, there are some policy changes happening in the near future that will affect the international firms.

Newly Approved DOH AO: The newly approved DOH AO 2018-0002 will apply to all medical devices (and many consumer products typically not classified as medical devices) to be sold, imported, manufactured, or used in the Philippines, except in-vitro diagnostic and refurbished medical devices, which will be covered by separate AOs.

Prior to its approval, AO 2018-0002 was pending for several years, thus, most medical device companies are prepared and able to deal with the changes. However, the AO initially classified some consumer products (baby diapers, adult diapers, manual toothbrushes, and electric toothbrushes) as medical devices, triggering confusion among manufacturers/suppliers of these products. While baby diapers and manual toothbrushes have been removed from the medical device list through an FDA Memorandum (which all hope is permanent) adult diapers and electric toothbrushes still will be classified as medical devices.

Medical Devices were Freely Importable: Medical devices were considered freely importable and "non-registrable" prior to this AO and did not require Certificate of Product Registration (CPR). Since the new AO will take effect in March 2019, medical device imports are still subject to existing FDA regulations and request the FDA's Center for Device Regulation, Radiation Health and Research (CDRRHR) to issue a Certificate of Exemption (COE) to facilitate the release of imported medical equipment from Bureau of Customs custody.

Awaiting Approval for Another AO: Another AO awaiting approval from the DOH Secretary concerns the proposed fee increases for FDA licensing and registration and other services to stakeholders in the following sectors: Medical Devices, Pharmaceutical, Food and Beverage, Nutraceuticals, Herbal/Organic/Natural Products, Cosmetics, Food and Beverage, and Household Hazardous products (room sprays, deodorizers, other aerosol products). Industry has been expecting fee increases since fees have not changed since 2001 and it is quite obvious that they need to be updated. However, the initially proposed draft of fees circulated to industry has included some surprising figures. In some cases, the fee increases are over 500% and the discrimination in fee structures between local and foreign manufacturers is of great concern. Industry is currently submitting position papers to the FDA and all are looking to see whether the schedule for implementation will begin in the third quarter of 2018 as initially conveyed.

NEW REGULATIONS IMPLEMENTED APRIL 1, 2019)

Medical device product registration in the Philippines is managed by the Center for Device Regulation, Radiation Health and Research (CDRRHR) within the Department of Health. With efforts to harmonize the Philippine Regulatory Guidelines in accordance with the ASEAN Medical Devices Directive, the Philippines Department of

Health recently released Administrative Order 2018-0002. The Administrative Order introduces risk classification of medical devices, as well as new requirements for initial device registration and renewal.

Medical Device Status

Instruments, machines, in vitro reagents, software and similar or related articles that make therapeutic or medical claims are considered Medical Devices in the Philippines.

Product Classification

The current product classifications are harmonized according to the ASEAN Medical Devices Directive with four classes A, B, C and D ranked from low to high risk categorization. The new review time and registration fees vary by risk categorization

Table 6-2: Registration Fees for Philippines Medical Device on the basis of Classification Type, Risk Level, Review Time, Application Fee, Evaluation Fee and Annual Retention Fee, 2019

Classification Type	Risk Level	Review Time	Application Fee	Evaluation Fee	Annual Retention Fee
Class A Notification (CMDN)	Low	4 to 12 weeks for authentication	PHP 7,500	PHP 750	PHP 5,150
Class B Registration (CMDR)	Low-moderate	Within 180 days	PHP 7,500	PHP 750	PHP 5,150
Class C Registration (CMDR)	Moderate-high	Within 180 days	PHP 7,500	PHP 750	PHP 5,150
Class D Registration (CMDR)	High	Within 180 days	PHP 7,500	PHP 750	PHP 5,150

Source: Philippines Department of Health, Ken Research Analysis
Note: PHP 7,500 = ~USD160

IVDs are not included in this classification. A separate Administrative Order is set to be issued regarding IVDs.

Device Conformity Assessment

New regulations implemented on April 1, 2019 require Class A, B, C and D medical devices to attain a Certificate of Medical Device Notification (CMDN) in order to be imported and placed on the market in the Philippines. The new regulations will be implemented in three phases:

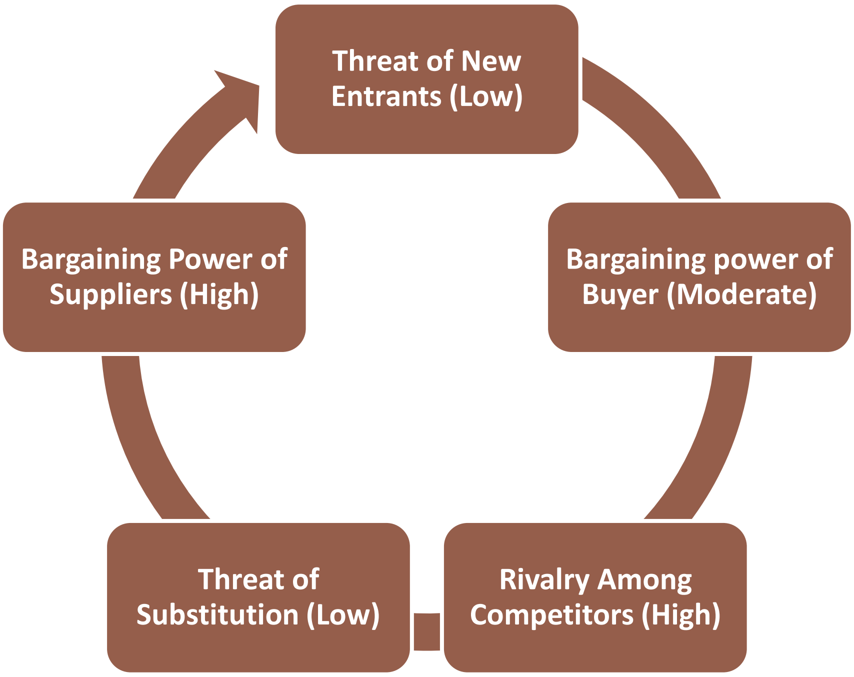
- All Class B, C, and D devices will be required to obtain a CMDN.
- Will require Class D devices to meet Certificate of Product Registration (CMDR) standards.
- All Class B and C devices will be required to obtain a CMDR.

The Notification Number or Registration Number will be issued to the device with an approved CMDN or CMDR.

Home country approval or reference country approval is required for all classes of devices.

6.4. Porter Five Forces Analysis in Philippines Medical Device Market

Figure 6-1: Porter's Five Forces Analysis for Philippines Medical Device Market



Source: Ken Research Analysis

Table 6-3: Porter's Five Forces Analysis on Philippines Medical Device Market

Parameters	Key Points	Recommendations
Rivalry Among Competitors	• Rivalry among competitors is ranked high as there are several players operating in the market such as GE Healthcare, Siemens, Fresenius, Philips and Terumo offering medical devices with similar attributes and specifications. • These players compete on the basis of new product variety in terms of price, usage and demand. Also they compete with each other on the basis of continuous innovations in design and customized offerings along with	• More focus should be led upon innovation of medical devices. In order to develop innovative technologies, emerging companies must compete with each other for Venture Capital Dollars. • The collaboration with international brands also help the companies in gaining a greater share in the market revenue as they bring with them investment and technology needed

	promotional offers & discounts on bulk purchases. • Entry of new players into the market with new innovative devices with minimal invasive technologies further augments competition in the market.	for business expansion.
Bargaining Power of Suppliers	• Bargaining power of supplier is high as there is less presence of manufacturing units in order to develop medical devices in Philippines. • Components and raw materials necessary to manufacture medical devices are imported from countries like Germany, US, China, India and others. • The customers cannot easily switch from one supplier to another in Philippines medical device market.	• Manufacturers selling directly to hospitals, clinics and diagnostic centers can enter into an agreement for medical device supplies at regular intervals. • Companies can try to be better negotiators with dysfunctional companies and innovators.
Bargaining Power of Buyers	• Bargaining power of buyers is termed moderate in Philippines Medical Device Market. • The customers present in Philippines are generally price sensitive. The competition is intense and people can easily buy medical devices from the unorganized market in order to save cost. • Moreover, medical devices are considered daily necessities. The absence of switching costs for buyers fuels their bargaining power to a significant extent.	• The companies should put their focus on making products that are well differentiated and patent protected. • Companies should also try to develop stronger industry contacts with large medical technology companies having good reputations.
Threat of New Entrants	• Threat of new entrants in Philippines Medical Device market is low majorly due to less or no entry barriers in this market.	• Product differentiation and innovation is one of the major factors responsible to handle new entrants in the Philippines Medical

	• Players entering the market primarily operate on a regional or niche basis to serve the balance of the medical device market. • However, there are no exit barriers in the industry hence the companies recording low performance can exit the market easily paving way to the existing players.	Device market. • Better understanding of regulatory environment and better innovators at meeting market demand along with better access to capital can help the new players to enter the market in Philippines.
Threat of Substitutes	• Threat of substitutes in the medical device market is low as the substitute for medical devices are few in the market. There are no close substitutes.	• Since, there are no close substitutes for the product, the companies in the industry can raise the prices of the product and earn greater profits keeping other factors affecting the market constant.

Source: Ken Research Analysis

7. Value Chain Analysis in Philippines Medical Device Market

Medical device market in Philippines is highly import driven. Increasing number of hospitals and clinics along with increase in medical tourism due to increase in government initiatives is driving the demand for medical device market in Philippines. All leading medical device manufacturers in Philippines include GE Healthcare, Siemens, Philips, Fresenius, B.Braun, while some of the leading distributors are IDS, Medilines, Terumo, Zuellig Pharma, Zafire Distributors, Metro Drugs Inc. Berovan Marketing and others. It has been witnessed that these companies focus on targeting the hospitals, diagnostic centers, and clinical laboratories, telemedicine and home health care centers.

7.1. Major Entities Involved in Value Chain

Process Chain- The value chain analysis of Philippines Medical Device market represents the intermediate layers between production, supply and distribution of medical device to hospitals, diagnostic centers, and clinical laboratories. The value chain of medical device market involves four major stakeholders' namely raw material suppliers, medical device manufacturers, distributors/dealers and end customers. It also involves the presence of both domestic as well as international manufacturers' fulfilling the demand of end customers. Factors such as number of price, usage, quality, product range and warranty must be worked upon before supplying the final product to the hospitals, diagnostic centers, and clinical laboratories who buy medical devices in bulk.

Initially, the manufacturer procures raw material from the raw material suppliers of medical devices. The manufacturers of medical devices are usually the major international players that have their manufacturing units located outside Philippines. After the production of medical equipment, the manufacturers sell directly to the distributors or dealers that keep a margin of 20-30% and further sell it to the end consumers. The products are also sold through Medical Consumable Distributors that keep a margin of 40-50% before selling it to the end users. The manufacturers can also sell directly to the end consumers which are the hospitals, diagnostic centers, and clinical laboratories, telemedicine and home healthcare.

Table 7-1: Philippines Distributor Gross Margin on the Basis of Product Wise (Medical Consumables, Diagnostic Imaging Products, Cardiac Device, Respiratory Products, Dental and Orthopedic Products, Furniture and Rental) in Percentage (%), 2020

Distributor Margins	Gross Margin in %, 2020
Medical Consumables	40-50%
Diagnostic Imaging Products	20-25%
Cardiac Device	30-40%
Respiratory Products	25-30%
Dental and Orthopedic Products	25-30%
Furniture	20-25%
Renal	30-35%

Source: Interviews with Philippines Medical Device Market Professionals, Ken Research Analysis

7.2. Major Problems in Value Chain

The medical device market in Philippines is full of complexities and faces several issues in its value chain management practice. These challenges are mainly based on:

Table 7-2: Philippines Medical Device Market Value Chain Challenges and Remarks

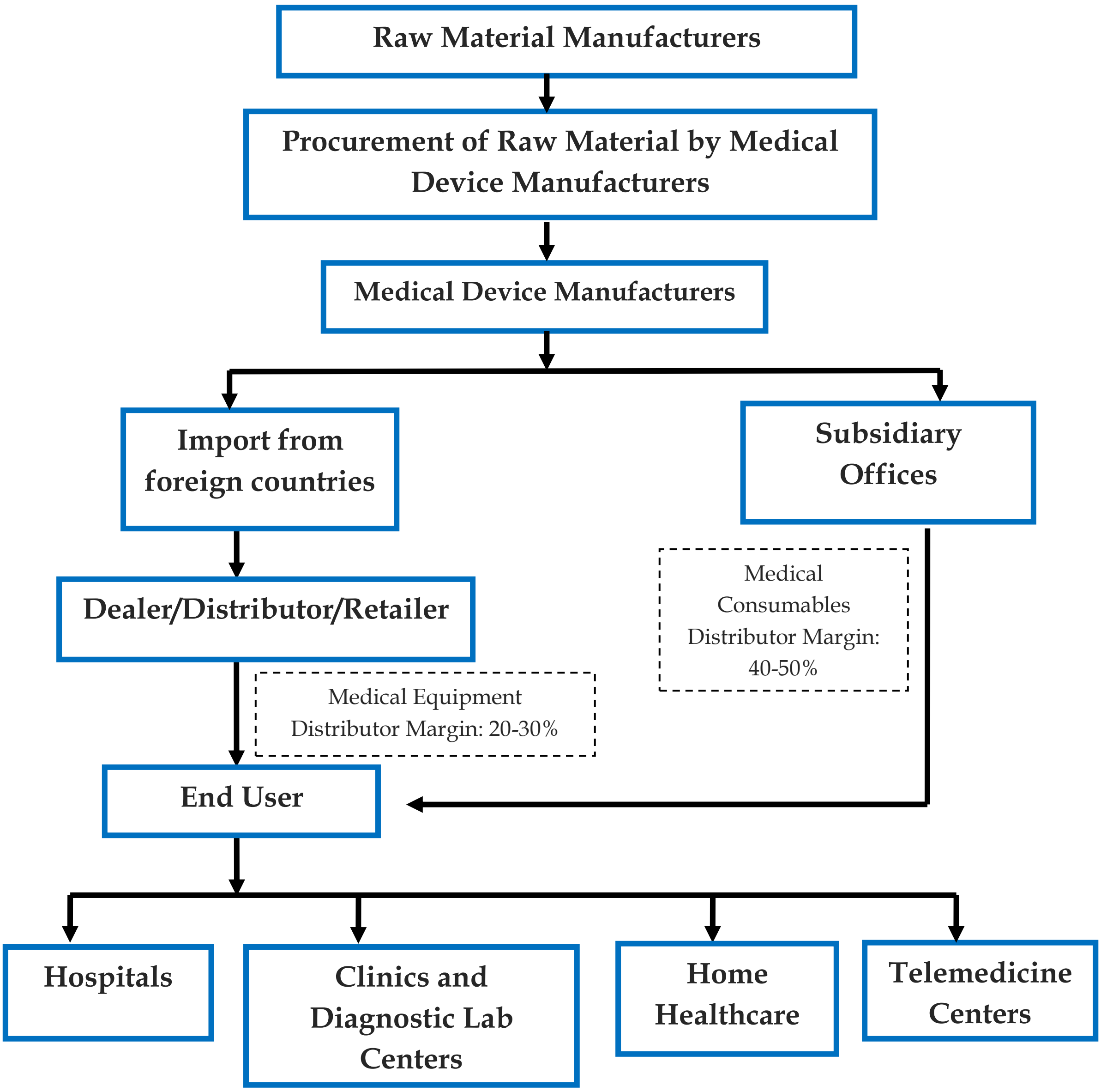
Challenges	Remarks
Import Driven Market	• Philippines medical device market is entirely an import driven market. The technology and medical equipment are imported from other countries such as Germany, US, India, China and many

	others. • An increase in price of raw materials of technologies such as MRI, CT scan and Ultrasound machines were witnessed which severely affects the Philippines Medical Device industry. • The distributors present either have to increase the price of the final product to offset their increased investment in importing the device, or they have to reduce their profit margins.
Overnight Shipping	• Unexpected situations can occur in hospitals and clinics that need to be addressed by supplying the required medical device. Since, the market is import driven; this becomes a major challenge for the distributors or the manufacturers. • While one or two overnight orders will not have a detrimental impact on a provider's bottom line but if it happened regularly, providers will start seeing significant losses in their revenues. For example, FedEx will charge nearly PHP 5,043.5 to overnight a 50-pound package within 150 miles. This cost will only escalate for further distances or heavier items.
Hidden Cost	• Another challenge that medical device providers face is the hidden costs of every product. Most providers have historically just looked at the product cost and the shipping cost. But there are additional expenses, such as inventory holding. • Providers need to plan their budget around total landed supply costs. They need to be aware of the losses they will incur from the unavoidable aspect of expired products and excess supplies. They need to look at product standards and purchase price variance.
Demand Supply Mismatch	• Philippines being archipelagic in structure face significantly higher logistics costs due to its inadequate and relatively poor quality of infrastructure, inefficient customs, and poor competency of logistics providers, along with their limited ability to track and trace shipments. • Regarding capacity, there is a need for more transportation infrastructure, handling and storage infrastructure capacity at key nodes, entry-exit points, as well as domestic distribution points to match the demand and supply of medical devices in Philippines.
Physician Preferences	• Different physicians and healthcare professionals have different preferences for the products that they use. Most organizations allow this to be the final say in purchases. Unfortunately, physician preferences are rarely tied to more successful outcomes and can often lead to cost variation. • The fact is not that physicians do not care about the higher cost or that the product does not offer better patient outcomes. Rather it is that they are unaware of the true cost of their choices.
Lack Of Integration	• Healthcare practices, facilities, and hospitals are becoming more consolidated. Health systems are growing, merging, and acquiring. As this happens, supply chains within these soloed yet merged organizations remain separate. Healthcare providers need to address this because inconsistency between these supply chains will negatively impact the bottom line.

	• These supply chains need to be integrated. Purchasing channels need to be centralized. Facilities need to share contracts so that they can gain access to higher tier pricing. Without these adjustments, the supply chain will not be cost-effective and the processes that it contains will remain inefficient.

Source: Interviews with Philippines Medical Device Market Professionals, Ken Research Analysis

Figure 7-1: Value Chain Analysis of Philippines Medical Device Market



Source: Ken Research Analysis

8. Philippines Medical Device Industry

8.1. Philippines Medical Device Industry Market Size by Revenue, 2015 – 2025

Table 8-1: Philippines Medical Device Industry Market Size and Description on the Basis of Revenues, 2015 – 2025 of the on the Basis of Revenue in PHP Million and Growth Rate in Percentage (%), 2015-2025

Parameters	Description
Market Overview	• **Overview:** The Philippines Market Device Industry was valued at PHP 19,131.9 Million in 2015 and registered a CAGR growth of 32.1% during the review period of 2015-2020 reaching to a value of PHP 77,016.2 Million in 2020. • In 2016, **Philippines medical device market observed a rapid surge in the revenue generated by 108.1% on YoY basis from that of previous year majorly due to change in government** (presidential election) which further led to growth in number of government tenders opened for Medical Equipment by the public hospitals for the procurement of medical equipment in the country. **Some of the major equipment procured by the hospitals include** X-ray, CT scan, MRI scan machines along with the dialysis machines and various specialized cancer hospitals also procured Linear Accelerator and other related machines. • As of 2020, there are **1,915 hospitals in the Philippines including 1,148 private hospitals and 767 government hospitals**, out of which 66 are directly controlled and managed by the Department of Health with total bed capacity of 22,773. As of 2021, about 900 hospitals were covered under the Philhealth (the National Health Insurance Program). • **Public hospitals are majorly used for preventive healthcare**, whereas private hospitals are preferred for curative services as these facilities are equipped with better and more sophisticated medical equipment available due to the higher budgets.
Demand for Medical Devices	• The demand for medical devices is majorly driven by **private hospitals, wherein Metro Pacific Investments Corporation (MPIC), QualiMed Health Network (Qualimed), and Mt. Grace Hospitals, Inc. (MGHI) are three major hospital developers**, which continue to expand through acquisition of current facilities and constructing new hospitals.

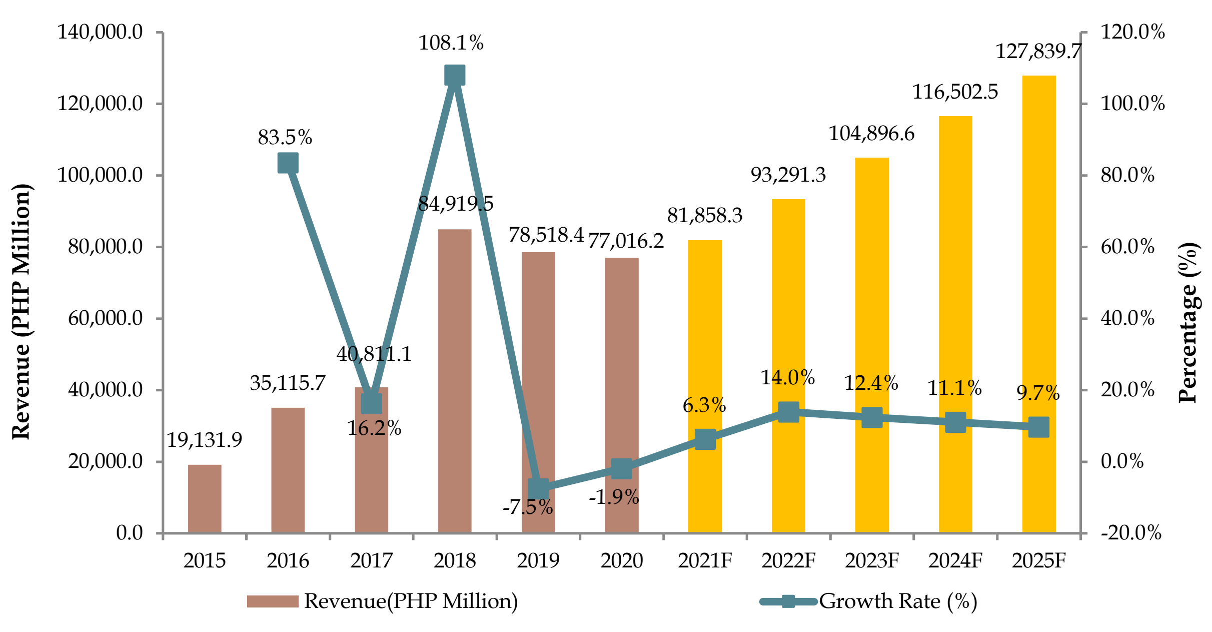
	• In 2020, Hospitals **contributed 70% of the revenue generated by the medical devices industry. Clinics and Diagnostic Labs were the next biggest contributor, making revenue contributions of 22.5%. Remaining 7.5%** revenue was contributed by other healthcare institutions such as home healthcare, telemedicine centers and others. • In terms of region, **Luzon region contributed the 65% of the revenue, followed by Visayas contributing 20% and remaining 15%** was contributed by the Mindanao region, as of 2020.
Market Stage	• The market is currently in **Growth Stage**, with growing population, hospital expansion and incoming of medical tourism are some of the key drivers for growth in the market. • Specialized services for r**adiology, cardiac, lung & kidney examinations and pathology are some of the key areas of device improvements** wherein the hospitals are focusing upon. • **ECGs, CT Scans, X-Ray machines, Dialysis machines are highly in demand**. Along with these, demand is also pacing for clinical aesthetics procedures and dermatology services. • With the onset of Corona Virus, the healthcare industry turned to usage of highly innovative medical technology for delivering the care a patient needs which is a positive onset for the medical device industry.
Supply Scenario	• The market is **highly Import Oriented, especially for highly technological machineries such as Diagnostic Imaging, Cardiac Devices, Respiratory products** and others. The local manufacturing industry is dominant in production of medical disposables such as surgical gloves, syringes and needles. It also supports in prototype units and spare parts production. • In 2020, **import share contributed 99.2% of the total revenue generated by the Philippines Medical Device Industry**, which in value was PHP 76,425.2 Million. Whereas, the local production contributed only PHP 591.0 Million. • Some of the major import partners are **Germany, USA, Japan, Singapore, India, China and South Korea. The market is becoming highly Price Sensitive**, due to which countries such as China and South Korea have been able to increase their export share. Small hospitals with limited budgets are sourcing their machinery requirement from such countries. • The **Import Duty on medical devices is 3%, plus there is a Value Added Tax (VAT) of 12**%. • The market continues to **present opportunities for international entities for high-value, low-volume products of latest technology and high quality**, such as electro-medical devices, imaging equipment, radiation equipment, dialysis devices, and linear accelerators.
Distributors Share in the Market	• Currently, the distributors **contribute 40% share in terms of revenue generation in the medical device industry of Philippines in the year 2020.** However, in the near future it is anticipated that

	the distributors share in the market will increase and **reach to 46.5% by 2025** largely due to better **after sale service, liaison with hospitals and offering technical assistance to hospitals and clinics along with the strong local presence** in the country will drive the demand for distributors role in the medical device market.
Growth Drivers	• **Modernization of hospitals, rising prevalence of chronic diseases, institutional funding,** government policies, equipment replacement and upgradation are some of the key growth drivers which facilitate the demand in the market. • Various **public and private charity organizations are offering grants to different government and private hospitals to upgrade and equip themselves with the latest technology devices and machinery**. For Instance, in May 2020, Philippines Charity Sweepstakes Office (PCSO) offered funding of USD 9 Million to 87 government hospitals for procuring equipment and supplies. Bloomberry Cultural Foundation offered USD 2 Million worth of goods, consumables, treatment machinery and a PCR machine. There are several other organizations such as Okada Foundation, Philippines Cultural Heritage Foundation and others which have been offering financial assistance to different institutions. • The Philippines government aims to create an inclusive healthcare system which provides quality and affordable healthcare services for all. The government has undertaken several initiatives and reforms for this, **such as Philippines Health Agenda, Increasing penetration of Philhealth to 100% population, investment in healthcare infrastructure development** and others. • Increasing demand for **surgical-medical cosmetic procedures, age-defying treatment for face and skin related problem**, advertising of new treatment and technology procedures, has helped in establishing demand in the market. • Cases of **chronic diseases such as diseases of the circulatory system**, neoplasm, diabetes mellitus and others are increasing in the Philippines. The instance of **such diseases roughly grew at a CAGR of about 2.5% during 2015-2020**. This has created more health awareness among people, they are getting routine checks and monitoring their vitals. • Philippines is becoming an **attractive medical tourist destination. It receives a range of 80,000 to 250,000 patients** on an annual basis from countries ranging from East & South Asia, Australia, North America, South America, Europe and Gulf region. • **Per Capital expenditure on Healthcare in Philippines was USD 96.8 in 2015 which has increased to USD 144.0 in 2020, registering a CAGR of 6.8% during the period**. This is mostly due to the change in lifestyle of people; they are becoming more concerned about their health and are moving towards preventive healthcare practice, rather than treatment, which is possible through regular health check-ups.

Future Scenario	• Shift towards usage of more advanced equipment, expansion of private healthcare network, **increase in healthcare expenditure and aging population are some of the key factors** which will help in the development of Philippines Medical Devices market in future. • With the onset of Corona Virus, the non-COVID healthcare services felt drastically. **Protective and Preventive measures such as physical distancing and usage** of **PPE kit became a norm in the industry**. To overcome these challenges and to continue the delivery of patient needs, healthcare providers will start adopting new machineries and devices, through which routine manual work will be reduced and at the same time provide new innovative ways of serving the patients. **This will eliminate the need of traditional method which can be replaced with the help of machinery**. • Prevalence of COVID-19 has also caused a behavioral shift in the way people used to live. Now, everyone steps out after wearing a mask and people are more conscious in crowded places. **Usage of surgical masks, gloves and other related products is now adopted by general public at large. This poses a positive outlook for consumables market.** Further, with increase in local manufacturing of these products, increase in number of surgeries and improvement in healthcare facilities, the future growth looks good. • **The PhilHealth aims to cover 100% of the population till 2022, which will impact the demand for quality healthcare through public and private partnership.** This will help in the sales of medical devices as more people will get their routine check-ups and tests, thus creating the need for more service providers in the market. • The **demand will especially grow for the orthopedic products, implants and assistive devices as elderly population is growing in the Philippines**. The elderly population is expected to reach to 5.6% by 2025 and 6.3% by 2030 from 4.8% as of 2020. • The market is **expected to be import dependent in future as well**. The local manufacturing will be limited to the basic items, customization of spares, consumables, hospital furniture and other related products in the near future. • The Philippines Medical **Device market is expected to reach to a value of PHP 127,839.7 Million till 2025**. The market will witness a CAGR of 10.7% during 2020-2025. **Moreover, with the resurgence of Covid-19 virus spread in the country will further lead to impact the growth of dialysis, x-ray, cancer therapy market positively** as the respiratory cases will increase in the country, due to **which demand for diagnostic imaging products such as X-ray, CT scan and MRI scans will grew**. In addition to that, it is also anticipated that the post COVID symptoms will also impact the immunity system of the COVID patients which were severely impacted due to Covid-19 virus, **causing failure of multiple organs in the body driving the dialysis equipment market in the country.**

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

Figure 8-1: Philippines Medical Device Industry Size on the Basis of Revenue in PHP Million and Growth Rate in Percentage (%), 2015-2025



Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Note: F refers to Forecasted Numbers
Philippines Medical Devices Market: This includes the total spending by hospitals and other end users (hospitals, Clinics and Diagnostic Lab Centers and other healthcare institutions) on Medical Consumables Products, Diagnostic Imaging Products, Dialysis Machine, Cardiac Device, Respiratory Products, Hospital Furniture, Auxiliary Devices, Dental and Orthopedic Products, Ophthalmic Devices and other devices in Philippines at trader/distributor price. Imports and domestically manufactured devices have been considered in the market.

8.2. Market Segmentation

8.2.1. By Type of Medical Devices (Medical Consumables, Diagnostic Imaging, Dialysis Machine, Cardiac Device, Respiratory Product, Hospital Furniture, Auxiliary Devices, Dental and Orthopedic Products, Ophthalmic Devices and Others), 2020 & 2025

Table 8-2: Philippines Medical Devices Market Segmentation by Type of Medical Devices (Medical Consumables, Diagnostic Imaging Products, Dialysis Machine, Cardiac Device, Respiratory Product, Hospital Furniture, Auxiliary Devices, Dental and Orthopedic Products, Ophthalmic Devices and Others), on the Basis of Revenue in PHP Million, 2020 & 2025

Type of Medical Devices	Rationale
Medical Consumables	• **Medical Consumables have accounted for the largest revenue share of 38.4%** to the Philippines Medical Devices market during 2020. • Medical consumable products include Syringes, Needles, Catheters, Bandages, Dressing, Suturing Materials and Ostomy products, Bloodline, Dialysis Dialyzer, Analyzers, Concentrate Solution, Disinfectants, Wndotoxin Filter, Thermoplastic masks, dressings, sheets of radio chromic film and other consumables. • These products are **required by all types of healthcare institutions such as public and private hospitals**, primary healthcare centers and other diagnostic laboratories and clinics. • Majority of **the medical consumables and devices are being imported in the country**. However, some other medical consumables such as **surgical masks and others are being produced locally in the country** by small local manufacturers.
Diagnostic Imaging	• **Diagnostic imaging products followed the Medical Consumables Products and accounted for 19.1%** of the

	revenue share in Philippines Medical Devices market in 2020. • Diagnostic imaging products includes X-ray, Ultrasound, CT Scan, MRI, Electro diagnostic apparatus, ECG and other products including Products based on UV and Infrared application, Products based on alpha, beta and gamma radiation, Laparoscope and Endoscope. • Diagnostic imaging products is increasing due to the **increase in the number of hospitals specializing in cancer, cardiology and the increase of non-communicable diseases** who demand specialized medical devices in order to provide better quality services. The total **number of hospitals and infirmaries reached to 1,915 as of 31st December 2020**. • Major proportion of these devices is imported and the biggest players in **diagnostics imaging are GE Healthcare, Siemens and Philips**.
Respiratory Product	• Respiratory Product **accounted for 10.6% of the revenue** share in Philippines Medical Devices market in 2020. • Respiratory Product includes **Therapeutic appliances, Monitoring devices, Diagnostic devices and other products**. • Growth in sales for this product is mainly attributed to the high prevalence of respiratory diseases, rising aging population across the globe, high prevalence of smoking, rising urbanization and pollution levels, increasing incidences of preterm births, and lifestyle changes. • Moreover, with the **emergence of Covid-19 the number of respiratory disease cases in the country have increased significantly in the year 2020 and 2021**, as the virus largely impacts the respiratory system (lungs) of human body and leads to a death of an individual due to lung failure. Therefore, during the period there have been a rapid surge in the **demand of respiratory devices and other diagnostic imaging devices such as X-ray and CT scan to detect the impact on lungs caused by Covid-19 virus**. • **Key players** in Respiratory care device market include Philips Respironics and Zoll Medical Corporation.
Hospital Furniture	• Hospital **Furniture accounted for 6.8% of the revenue** share in Philippines Medical Devices market in 2020. • Hospital Furniture includes Medical, Surgical, Dental or Veterinary furniture, e.g. operating tables, examination tables, hospital beds with mechanical fittings and dentists chairs; barbers chairs and similar chairs having rotating as

	well as both reclining and elevating movement; parts thereof. • **Increasing number of hospital admissions is the major reason for sales boost of the medical furniture in Philippines**. • Growing **number of hospital admission is associated with the rising prevalence of chronic diseases and orthopedic disorders requiring surgical procedures**. Surgical procedures increase length of stay of patients in hospitals that significantly impacts industry growth. • **Bataan Manufacturing which is a domestic player is one of the leading companies in manufacturing** of hospital furniture in Philippines. • Companies such as **GE Healthcare also focuses on introducing innovations in the beds** and other medical furniture required in hospitals.
Cardiac Device	• **Cardiac Devices accounted for 6.7%** of the revenue share in Philippines Medical Devices market in 2020. • Cardiac Devices includes **Angioplasty Cath lab devices, pacemakers, Defibrillator (Cardiac rhythm management devices), Cardiac surgery devices like heart and lung machines, Octopus and Heart valves**. • Increasing instances of heart failure and other cardiac disorders and rising sedentary lifestyle among the population are the main factors which lead to an increase in the sales of Cardiac Devices. • **Some of the key players operating in this space** are Medtronic, Boston Scientific Corporation, ZOLL Medical Corporation and Otsuka Medical Devices.
Dental and Orthopedic Products	• **Dental and Orthopedic Products have accounted for 4.8%** of the revenue share in medical devices market in 2020. • **Oral implant surgery, products for sensitive teeth and gum are some of the major areas in dental care which led to demand of these equipment.** Intra-oral sensors and digital panoramic cephalometric X-ray devices from companies such as 3M Philippines Inc. A-dec International Inc. Affinity Dental Clinics. And many others have gained much traction in the market. • **Expanding elderly population and the associated steady rise in musculoskeletal disorders have the led the demand for Orthopedics and Prosthetics device market.** Companies such as RBGM, Transmedia, Philbed have introduced innovative products in this segment to gain brand recognition in this segment

	• **Major users of Dental and Orthopedic equipment** and related supplies are public and private hospitals, private dentists, health centers and academic faculties.
Auxiliary Devices	• **Auxiliary Devices have accounted for 4.5%** of the revenue share in medical devices market in 2020. • **Auxiliary medical devices can be divided into wearable medical devices and implantable medical devices**. It includes Hearing Aids, Artificial body parts (excluding artificial teeth and joints) and others including implants. • In Philippines, **over 98% of the auxiliary devices, such as, hearing aids and pacemaker; are imported from Hong Kong and Switzerland**.
Radiology Cancer Treatment Products	• Radiology Cancer Treatment Products have accounted for 1.6% of the revenue share in medical devices market in 2020. • Radiology Cancer Equipments include Linear Accelerator, Brachytherapy and Cyclotron. • Elekta and Siemens have been the renowned brand for radiology cancer treatment equipments in Philippines.
Dialysis Machine	• **Dialysis Machines accounted for 1.4% of the revenue share in Philippines Medical Devices market in 2020**. • It includes products used to dialysis (purify) blood by removing excess water and waste products. • **Fresenius and B.Braun are the biggest player** in dialysis equipment segment. • **Companies producing dialysis products are investing more on R&D and Home dialysis and Portable dialysis machines** are gaining popularity among patients suffering from end stage kidney diseases, kidney failure or acute kidney injury.
Ophthalmic Devices	• **Ophthalmic Devices have accounted for 0.9%** of the revenue share in medical devices market in 2020. • Ophthalmic devices cover a wide range of design types and applications such as glasses, contact lenses, intraocular lenses, implants, diagnostics, lasers, solutions and surgical instruments. • The increase **in rapid urbanization is parallel to the adoption of digital devices such as computers, smart phones, tablets, laptops, television, game consoles, and e-reader**. Continuous long hours spent in front of the screen results into various eye related issues such as eye strain, itchy eyes, headaches, blurred vision, or neck pain.

	• The screen of these devices emits artificial blue light which can be harmful and result into AMD. Currently, the use of these devices is on an increase across all age groups. • These devices gain increased importance and adoption **due to high prevalence of various ophthalmic diseases such as glaucoma, cataract, and other vision related issues**. • The **key players profiled in the sale of ophthalmic devices** include Carl Zeiss Meditec AG, Johnson & Johnson and Bausch+Lomb.
Others	• Other medical devices include Aesthetic Devices, IV Diagnostics, Physiotherapy devices instruments and appliances for medical use which that have **contributed to a market share of 4.3%** in Philippines medical device market in 2020. • **The country's demand for beauty treatments has increased in Philippines as dermatologists and general practitioners flourish in the aesthetics industry.** • Further, cosmetics surgery has become more accessible and less costly in Philippines as compared to neighboring Asian countries, **the demand for cosmetic surgery which mainly includes upgrading noses and eyes, face implants, breast implants and stomach implants**. • The most popular **devices include facial aesthetic devices, aesthetic implants, skin tightening and body contouring devices**, and aesthetic laser and energy devices.

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Others include Aesthetic Devices, Physiotherapy devices instruments and appliances for medical use

Table 8-3: Philippines Medical Devices Market Segmentation by Type of Medical Devices (Medical Consumables, Diagnostic Imaging Products, Dialysis Machine, Cardiac Device, Respiratory Product, Hospital Furniture, Auxiliary Devices, Dental and Orthopedic Products, Ophthalmic Devices and Others) on the Basis of Revenue in PHP Million and CAGR in Percentage (%), 2020 & 2025F

Type of Medical Device	2020 (PHP Million)	2020 (%)	2025F (PHP Million)	2025F (%)	CAGR (%) 2020-2025
Medical Consumables	29,551.7	38.4%	45,123.0	35.3%	8.8%
Diagnostic Imaging Products	14,700.3	19.1%	24,744.4	19.4%	11.0%
Respiratory Products	8,136.0	10.6%	11,633.4	9.1%	7.4%
Hospital Furniture	5,226.5	6.8%	9,588.0	7.5%	12.9%
Cardiac Device	5,184.0	6.7%	10,227.2	8.0%	14.6%
Dental and Orthopedic Products	4,461.0	5.8%	8,820.9	6.9%	14.6%

Auxiliary Devices (Artificial Body Parts, Hearing Aids, Implants etc.)	3,440.5	4.5%	6,519.8	5.1%	13.6%
Radiology Cancer Treatment Products	1,268.7	1.6%	3,003.0	2.3%	18.8%
Dialysis Machine	1,041.5	1.4%	2,384.7	1.9%	18.0%
Ophthalmic Devices	695.0	0.9%	1,304.0	1.0%	13.4%
Others	3,311.0	4.3%	4,491.3	3.5%	6.3%
Total	**77,016.22**	**100.00%**	**127,839.7**	**100.0%**	**10.67%**

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Others include Aesthetic Devices, Physiotherapy devices instruments and appliances for medical use
Note: F refers to Forecasted Numbers

Table 8-4: Philippines Medical Devices Market Segmentation by Type of Medical Devices (Medical Consumables, Diagnostic Imaging Products, Dialysis Machine, Cardiac Device, Respiratory Product, Hospital Furniture, Auxiliary Devices, Dental and Orthopedic Products, Ophthalmic Devices and Others) on the Basis of Procurement, Margins, Major Sales Channel, Best Selling Medical Device, Major Companies and Major End Users

Particulars	Procurement	Margin	Major Sales Channel	Best Selling Medical Device	Major Companies	Major End Users
Medical Consumable Products	Locally Produced	20-30%	Direct Sales	Syringes, Needles and Catheters	Terumo, B Braun, J&J, 3M	Hospitals, Clinics and other health centers
Diagnostic Imaging Products	Import Oriented	40-50%	Direct Sales	Ultrasound systems, X-Ray and Ct Scans	GE Healthcare, Siemens, Philips	Hospitals, Diagnostic Imaging Centers
Respiratory Product	Import Oriented	20-30%	Direct Sales	Therapeutic Appliances such as Nebulizers, Humidifier, etc.	Philips, Zoll	Dispensaries and Home Healthcare
Hospital Furniture	Locally Produced	20-30%	Distributor Mediated	N/A	Bataan Manufacturing	Hospitals
Cardiac Device	Import Oriented	40%	Direct Sales	Angioplasty Device	Medtronic's, Boston, Otsuka, Zoll	Hospitals and Clinics
Dental and Orthopedic Products	Import Oriented	30%	Distributor Mediated	N/A	3M Philippines Inc. A-dec International Inc.	Dental Clinics and Hospitals
Auxiliary Devices	Import Oriented	N/A	Distributor Mediated	Hearing Aids	GE Healthcare, J&J	Hospitals

Radiology Cancer Treatment Products	Import Oriented	25-30%	Distributor Mediated	Linear Accelerator	Siemens, Elekta	Hospitals
Dialysis Machine	Import Oriented	30-40%	Direct Sales	Dialysis Machine	B Braun, Fresenius	Hospitals
Ophthalmic Devices	Import Oriented	N/A	Direct Sales	N/A	Carl Zeiss Meditec AG, J&J	Hospitals

Source: Industry Articles, Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

8.3. Medical Equipment Market

COMPETITIVE LANDSCAPE

Table 8-5: Competition Scenario in Philippines Medical Equipment Market Including the Competition Stage, Major Players and Competitive Parameters

Particulars	Rationale
Nature of Market	• The Philippines Medical Equipment market is **moderately fragmented with each company having its specialization into different medical equipment category**. Moreover, the market is being highly import driven therefore, majority of the medical equipment used in the country are being imported.
Competition Framework	• **Major manufacturers** present in the market are GE Healthcare, Fresenius, Siemens, Philips, Toshiba, Elekta, Hitachi, Bontech, Vila, Listem, 3M, Medikit, Baxter International and many more. • **Major distributors** include DK Medical System, Philippines Medical System, Transmedia Group, Metro Drugs Inc, IDS Medical System, Zafire, Biosite, Medilines and many more.
Competing Parameters	• **Product Portfolio:** The medical equipment companies are adding products to their portfolio in order to cater to a larger proportion of healthcare institutions and clinical laboratories. Some of the major products which the companies focuses upon are medical consumables, diagnostic imaging, dialysis machines, cardiac products and respiratory products are the major segments due to the prevalence of cardiovascular diseases, diabetes, HIV, TB and other lifestyle and chronic diseases. • **Distribution Network:** Companies tie up with local distributors located across the country in order to increase their geographic presence. This increases their product's availability and accessibility for various healthcare institutions. These partners also try to capture opportunities in the government healthcare institutes by following tenders and registering their product catalogue.

- **Pricing:** The pricing is done considering various parameters such as device functions, technology used, side effects, and customization options. The low priced products are dominated by Chinese exporters whereas the expensive technologically advanced devices are dominated by German and US exporters. Further, companies are open to price negotiations while entering in contract with the healthcare institution.
- **Support Service:** Support services include after sales service, product training and customization options. With new innovation in the industry, the client often prefers to understand the working and various functions of the device. Further, the medical device distributors and manufacturers provide warranty for their products in case of wear and tear. Along with this, the companies also offer paid services when not in warranty period.
- **Marketing Activities:** Medical equipment companies often market their products directly to the physicians who will use them. The goal is to get a doctor to try the product in a surgical setting. Further, it is necessary for the medical device manufacturing company to establish positive relationship with the doctors and surgeons in order to create trust and reliability in the market.

Source: Ken Research Analysis

Table 8-6: Ranking of Top Medical Device Distributors in Philippines on the basis of Revenues in PHP Million, 2020

Distributor	Revenue in PHP Mn, 2020
IDS Medical System	2,150.0
Medilines	1,760.0
Fernando Medical Enterprise	1,300.0
Health Solution Enterprises	1,050.0
Lifeline Diagnostic Supplies	1,050.0
Patient Care Corporation	1,000.0
Zafire	900.0
Shimadzu	900.0
Technomed	750.0
Biosite	650.0
Berovan	600.0
Saviour MedDevices Incorporated	600.0
Biosyn	600.0
Medicotek	550.0
RBGM	500.0
Transmedic	350.0
Carestream	475.0
Progressive Medical Corporation	200.0

Aljeron Medical Enterprise	110.0

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

Note: The above revenues are mentioned as Gross revenues, which include equipment and consumable sales, along with any other service revenues or pharmaceutical sales. The gross revenues for the companies are captured through Interviews conducted with the management of these distributors. As a part of limitation, we are not able to validate these revenues with Registrar of Philippines, as the authority was not operational due to the ongoing lockdown in the country

The above list of players is not arranged on the basis of revenues, which implies there may be certain distributors which could exist in between

MEDICAL EQUIPMENT MARKET SIZE BY REVENUE, 2015 – 2025

Table 8-7: Philippines Medical Equipment Market Size and Description on the Basis of Revenues, 2015 - 2025

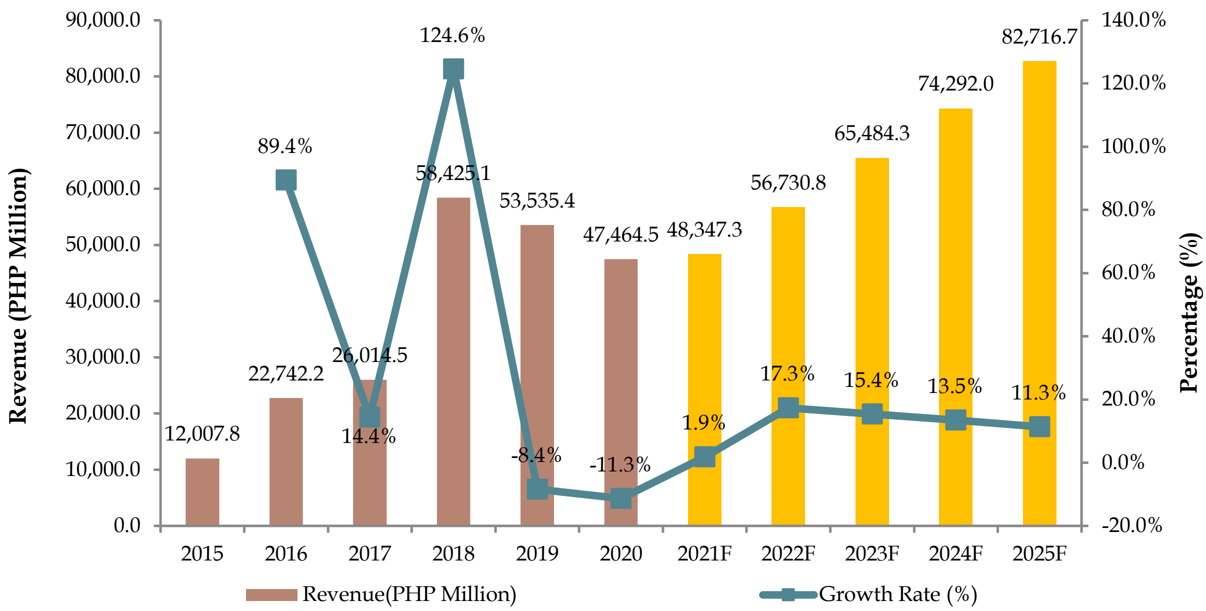
Particulars	Rationale
Market Overview	• Medical Equipment includes machineries for Diagnostic Imaging, Dialysis Machine, Cardiac Device, Respiratory Product, Hospital Furniture, Auxiliary Devices, Dental and Orthopedic Products, Ophthalmic Devices and other medical equipment. • The market size for medical equipment was valued **at PHP 12,007.8 Million in 2015 and reached to a value of PHP 47.464.5 Million 2020, witnessing a CAGR of 31.6%** during the review period. • In this market, diagnostic imaging products is having high presence as there is **increase in the number of hospitals providing specialized cancer treatment** and cardiology services for which the specialized equipment are required.
Growth Drivers	• Change in lifestyle has increased **the instances of heart failures, cardiac disorders; rise in sedentary lifestyle** has increased the sale of Cardiac equipment. • Rising prevalence of **chronic diseases and orthopedic disorders requiring surgical procedures, has led to growth in the number of inpatient hospital admission**. This signifies the growth in the industry. • The cases for **musculoskeletal disorders are on rise due to the growth in elderly population**. This has resulted in increase in demand for Orthopedics and Prosthetics device market.
Major Players	• Some of the major market participants are **GE Healthcare, Siemens, Philips, B.Braun, Elekta, Medtronic, Boston Scientific Corporation, ZOLL Medical Corporation and Otsuka Medical Devices.**
Future Scenario	• The medical equipment market poses a positive outlook for the future and is expected to witness a growth of **11.6% during the**

2020-2025 period and reach to a value of PHP 82,716.7 Million in 2025

- **Prevalence of cardiovascular and oncology diseases coupled with the rising geriatric population** base is expected to drive the market for diagnostic imaging products and cardiac devices in Philippines in 2025.
- The market will **adapt to new technology and techniques such as 3D imaging** among the radiologists and surgeons due to the benefits such as instrumental manifestations which is not possible with 2D Imaging.
- Filipinos are vulnerable to chronic respiratory diseases, such as **emphysema, bronchitis morbidity cases, acute respiratory infection and others. This will drive the market for respiratory products in the future**.

Source: Industry Articles, Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

Figure 8-2: Philippines Medical Equipment Market Size on the Basis of Revenue in PHP Million and Growth Rate in Percentage (%), 2015-2025



Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Note: F refers to Forecasted Numbers
Note: Philippines Medical Equipment market has been defined as the sum total of spending made by healthcare institutions including hospitals, clinics and labs on medical equipment such as machines. Medical supplies/Medical consumables spending is not included in market size

MARKET SEGMENTATION FOR MEDICAL EQUIPMENT BY DIRECT SALES & DISTRIBUTOR LED, 2020 & 2025

Table 8-8: Philippines Medical Equipment Market Segmentation by Mode of Selling (Direct Sales & Distributor Led) on the basis of Revenue in PHP Million and CAGR in Percentage (%), 2020 & 2025

By Mode of Selling	Revenue in PHP Million, 2020	Revenue in PHP Million, 2025	CAGR (2020-2025)
Direct Sales	28,478.7	44,253.4	9.2%
Distributor Mediated	18,985.8	38,463.3	15.2%
Total	**47.464.5**	**82,716.7**	**11.7%**

Key Takeaways:

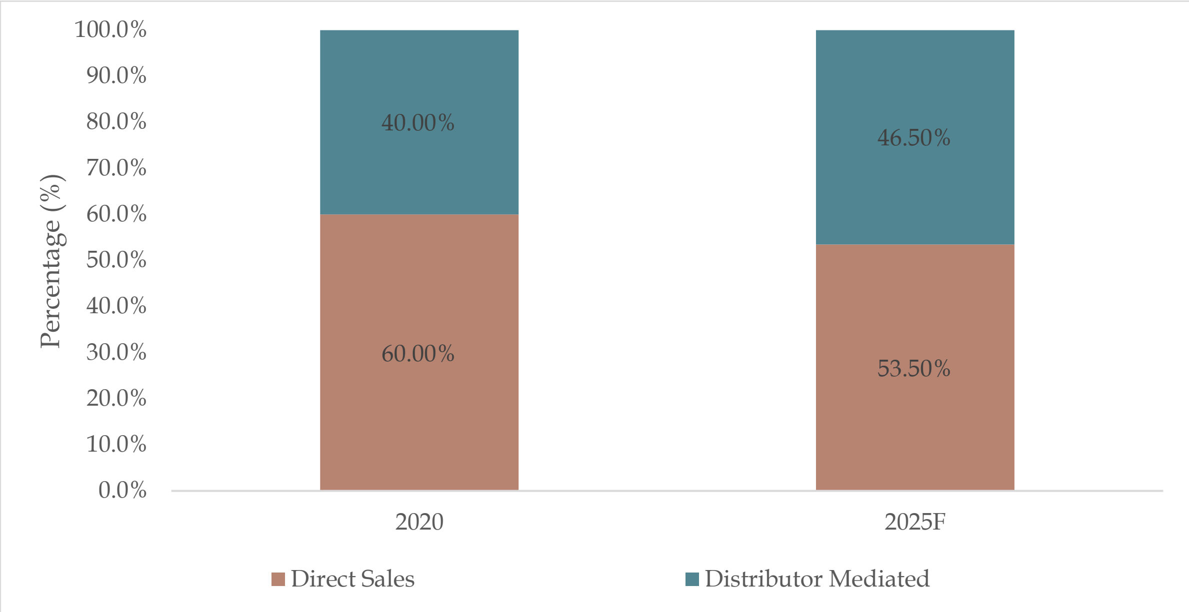
- **Direct Sales** of medical equipment primarily represents the sale of equipment by manufacturers directly to the customer without the help of intermediaries, which made a revenue contribution of 60% during 2020
- Majority of the international companies like **Fresenius and Terumo** have their subsidiaries in Philippines. These subsidiaries sell directly to the hospitals, diagnostic laboratories and other non-residential customers.
- Non-residential customers such as hospitals and diagnostic clinics are expanding continuously year on year basis that drives growth in the direct distribution channel. The healthcare infrastructure of Philippines consists of **Barangay Healthcare System, Rural Health Unit and Hospitals with total number of 30,340 as of June 2021.**
- The major advantage of direct purchase is reduced prices, given the absence of additional costs customarily affixed to distributor and middlemen who are involved in distribution channel.
- **Margins:** In the direct distribution channel, the companies have a margin of around **30%-40%.** Every company has different margins depending upon dealing with the supplier, quality and quantity of the product sold. The Based on average, the industry margin ranges from 35%-40% Philippines Medical Equipment market.
- **Key Players:** Major distributors operating in the country includes DK Medical System, Philippines Medical System, Metro Drugs Inc. IDS Medical System, Medilines, Biosite and many more.
- In, **distributed mediated channel**, the company selects a local partner, which sells the product of the company in the region. It had a revenue share of 40.0% in Philippines Medical equipment market in 2020 majorly due to high reliance on imports of medical devices.
- Products set in retail make their way to consumers through several intermediaries, including wholesalers and distributors. This supply chain adds to the base cost of medical devices.
- In 2020, **distributors account only 30% share** of the market in terms of revenue generated in Diagnostic equipment device market majorly due to large ticket size of the products therefore, majority of the clients or hospitals prefers purchasing products directly from the principals only. Whereas, distributors **contribute about 40.0% share in Dialysis equipment market and 83.9% share in the cancer radiology treatment equipment** market in terms of generating revenue. However, in future it is anticipated

that the share in terms of generating revenue via distributors will grew in the near future.

- **Margins:** Every Company has different margins depending upon dealing with the supplier, quality and quantity of the product sold. Based on average, the industry margin ranges from **20-30%** Philippines Medical Equipment market.
- **Key Players:** Major companies like GE Health care, Siemens, B. Braun, Philips, Medtronic and others tie up with local distributors such as Healthcare Solution and Zuellig Pharma to sell their products in the Philippines market.

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

Figure 8-3: Philippines Medical Equipment Market Segmentation by Mode of Selling (Direct Sales & Distributor Led) on the basis of Revenue in Percentage (%), 2020 & 2025F



Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

COMMENTARY ON GROWTH DRIVERS, TRENDS AND DEVELOPMENT (MEDICAL EQUIPMENTS MARKET)

Expansion of Healthcare Network: The government of Philippines is aiming towards creating an inclusive healthcare infrastructure, wherein patients are able to get all treatment at affordable rates through co-payment system. This has led to growth in the secondary and tertiary healthcare such as cardiologists, dermatologists, urologists and advance medical procedures such as major surgeries, transplants, replacements and long-term medical care management for diseases such as cancer, neurological disorders.

Companies focusing on R&D Investments: Health Wearable, Precision Medicine, Artificial Organs, Wireless brain sensors are some of the key future technologies being developed by the medical equipment companies. Launch of various innovative medical equipment especially in diagnostic imaging sector would impact the overall sales of the medical equipment in a positive manner.

Changing Lifestyle of Population: The fast paced, hectic urbanized lifestyle has led to increase in smoking, drinking, and increase incidences of preterm birth and lifestyle changes. This has resulted in increase in chronic diseases, prevalence of respiratory diseases and other health issues. Now, people are becoming more health conscious are getting routine health checkups, which will drive the market.

Growing Ageing Population: The percentage of elderly people (65 and above) in the Philippines will most likely grow 5.6% by 2025 and 6.3% by 2030. Furthermore, investment by international companies along with investment in medical research will bring in advanced devices for better quality of services.

8.4. Philippines Medical Consumables Market

COMPETITIVE LANDSCAPE

Table 8-9: Competition Scenario in Philippines Medical Consumables Market Including the Competition Stage, Major Players and Competitive Parameters

Particulars	Rationale
Nature of Market	• The market is majorly import driven and it is highly fragmented with large number of principal and distributors suppliers operating in the market. However, hospital furniture and surgical masks are produced domestically in Philippines.
Competition Framework	• **Major Manufacturer's which are currently operating in the market includes** Medline Industries, Smith & Nephew, Bayer, BD, 3M, Cardinal Health, and many more.
Competing Parameters	• **Product Portfolio:** In order to become a one solution provider for all needs of consumers, the companies are increasing their presence in different product options present. • **Price:** This is a low value category, wherein most of the products have shelf life of single use, consumers prefer to purchase the cheapest available option. Thus, pricing is an important parameter for the companies in order to maximize their sales. • **Ease of Availability:** The suppliers focus on expanding their retail presence by targeting retailers, pharmacies, mom & pop stores and other retail network, in order to increase their sales. • **Quality:** Traditionally the products in this category used to be single use items; however with the advancement of technology, the number of uses is increasing. Therefore, quality is becoming an important competition parameter for the companies. • **Institutional Sales:** As the products are low value, companies need to maintain large order volume in order to sustain, therefore the focus is on targeting large institutions such as large hospitals and chain healthcare service providers in order to ensure pipeline of sales.

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

MEDICAL CONSUMABLES MARKET SIZE BY REVENUE, 2015 – 2025

Market Size: The Medical Consumables market was valued at **PHP 7,124.1 Million in 2015 and increased to a value of PHP 29,551.8 Million in 2020, registering a healthy CAGR of 32.9%** during the period.

Impact of COVID on Medical Consumables Market: In 2020, it has been observed that the medical consumables market has recorded Y-o-Y growth of 18.3% from that of previous year in Philippines, majorly due to emergence of global pandemic Covid-19 virus in the country which led to surge in the demand of medical consumables such as Surgical masks, N95 masks, PPE Kits, Latex or nitrile gloves, face shields, Nasal Swabs and Test Kits, needles, syringes, ventilators and many more.

Also, it is expected that the demand of these medical consumables will rapidly increase in the near future due to Covid-19 resurgence in the country in the year April 2021.

Future Projections: Going forward, the Philippines medical consumables market is expected to reach to a value of PHP 45,123.0 Million in 2025, registering a CAGR of 8.8% during the period 2020-2025.

Major Products: Medical Consumables includes products such as Syringes, Needles, Catheters, Bandages, Dressings, Suturing Materials, Ostomy products and other consumables.

Products Used by Entities: These products are used by all type of healthcare institutions including private and public hospitals, primary healthcare centers, diagnostic laboratories and clinics.

Import Driven Market: These are low value items, which don't require much expertise in usage. Majority of the medical **consumables are being imported**. However, some of the medical consumables such as surgical masks and others are being largely produced locally by small local manufacturers.

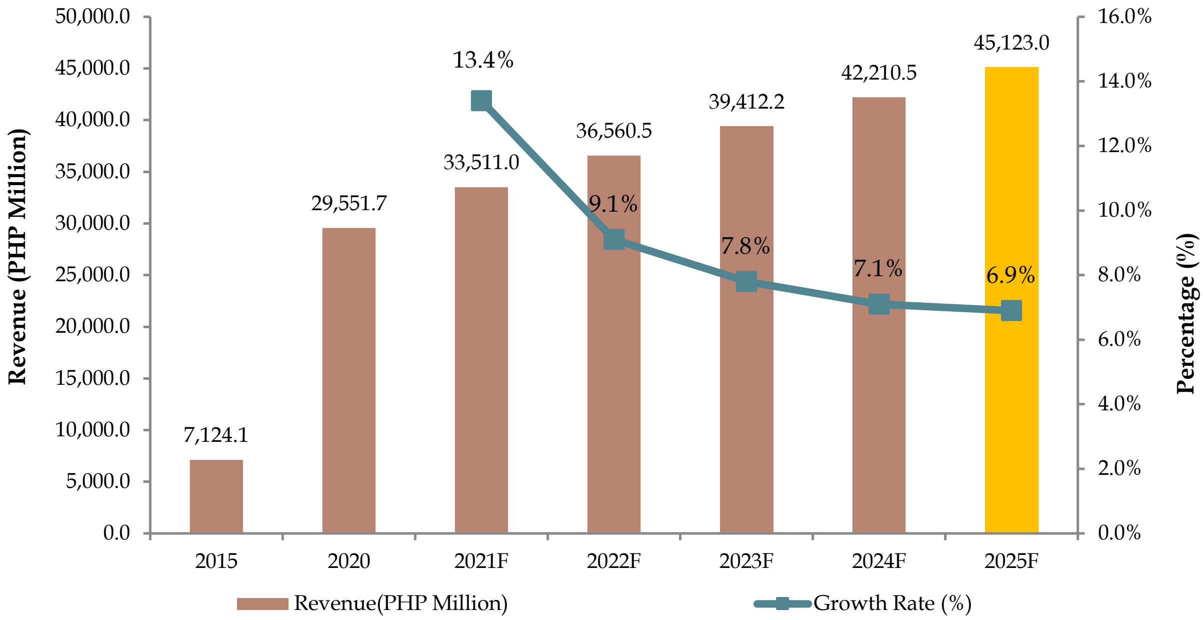
Best Selling Products: The Syringes, Needles and Catheters are the most selling items in this category and contribute almost half of the revenues. The **average cost of 1 syringe ranges from PHP 10- PHP 15, whereas needles are expensive ranging from PHP 100- PHP 150.** The demand for insulin syringes is high in the country as about 7.1% of population aged 20-79 suffers from diabetes.

Other high selling products in these categories include Bandages and Dressings. These are used for both inpatients and outpatients for treating acute and chronic diseases, therefore have evergreen demand.

Gross Margin: Usually, the medical consumables distributors have a gross margin of **40%-50%** attached to them.

Major Players: Some of the major players operating in the medical consumable market are Terumo, B Braun, J&J, 3M and others.

Figure 8-4: Philippines Medical Consumables Market Size on the Basis of Revenue in PHP Million and Growth Rate in Percentage (%), 2015-2025



Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Note: F refers to Forecasted Numbers
Note: Philippines Medical Consumables market has been defined as the sum total of spending made by healthcare institutions including hospitals, clinics and labs on medical consumables including Bandages, Masks, Suturing materials, PPE kits, reagents and multiple other

COMMENTARY ON GROWTH DRIVERS, TRENDS AND DEVELOPMENT (MEDICAL CONSUMABLES MARKET)

Growth in Surgical Procedures: The future demand for medical consumables category will increase due to growth of surgical procedures and rise in demand for technologically advanced surgical procedures such as minimally invasive surgeries and laparoscopic surgeries.

Replacement of Traditional Wound Care Products: With new developments, the traditional wound care products are being replaced by advanced wound care products as they are more efficient and effective to treat wounds by enabling fast healing.

New players entering Medical Consumables Market: Due to corona virus, the demand for products such as surgical masks, gloves, PPE kits and other protective gear sky rocketed. This resulted in a lot of which were present in related industries and different industries entering in production of these medical consumables. The suppliers also grew drastically in order to cater to the new demand that the market presented.

Accelerated demand in retail space for Medical Consumables: COVID-19 has caused behavioral shift among people. Now, wearing of masks in public place is an ethical compulsion for everyone's safety. More careful people use gloves and wear other protective equipment while stepping out. This has led to high demand for these products in the retail space, with good margins.

9. Detailed Landscape on Diagnostic, Dialysis and Cancer Therapy Markets

9.1. Diagnostic Medical Device (Equipment + Consumables) Market

DIAGNOSTIC MEDICAL DEVICE (EQUIPMENT + CONSUMABLES) MARKET OVERVIEW

Table 9-1: Philippines Diagnostic Medical Device Market Overview and Genesis Including Introduction, Current Market Size & CAGR, New Technologies & Devices and Future Market Size & CAGR

Parameters	Description
Introduction	• Most hospital improvements concentrate on specialized services for **radiology, cardiac, lung and kidney examinations, and pathology** to address the problem. Hospitals enhance their **pathology services** to meet demands for various **diagnostic testing including X-Ray, MRI, CT Scan, Ultrasound and others** • The key factors propelling the demand of diagnostic medical devices include **growing incidences of infectious and chronic diseases**, kidney and liver failure issues, **increasing adoption of automated platforms and better access to healthcare facilities by the general population**. • Infectious diseases are caused by microorganisms and include diphtheria, Ebola, flu, hepatitis, HIV/AIDS, human papilloma virus (HPV), tuberculosis, etc. Sudden outbreaks such as **dengue, Zika virus, COVID-19, and Swine flu** are driving the demand for clinical diagnostic tests globally. • With the advent of the **coronavirus**, the major requirement is for CT scan, which is used to detect the severity of COVID infection. • The level of infrastructure development is varied across the archipelago, opening possibilities for regional diagnostic centers **operating hub-and-spoke models** for **community outreach**
Current Market Size & CAGR	• **Market Size:** In 2015, it has been witnessed that the diagnostic medical device market in terms of revenue was **PHP 6,170.0 Million**, which later grew at a **double digit CAGR of 24.6%** during the period 2015–2020 and it reached to **PHP 18,527.2 Million** in 2020.
Key Players	• Major companies which are currently dominating the market includes Siemens, GE Healthcare, Philips, Toshiba, Shimadzu, Fujifilm and others.
New Technologies & Devices	• **Artificial Intelligence (AI)** has pervaded the healthcare space and become the absolute game changers, catalyzing immense developments in diagnostics, detection, management and treatment of ailments. AI can

	analyze and interpret data in more complex and diverse combinations than a human mind, providing extremely potent data for effective and accurate diagnostics. Medical imaging has become the leading and most popular field for AI applications. • **3-D Printing:** Some innovative approaches have used AR techniques to help patients understand their own anatomy, and what will be happening during the surgery. Some researchers have presented results from testing the use of AR models and 3-D printed models for patient education. 3-D printed models were much more effective at helping patients understand the kidney or prostate tumor's specific details, thus helping them become more confident and secure in making the right surgical choices. For similar reasons, 3-D printing is also useful for surgeons to be better prepared for the surgeries. • **The IVD (in-vitro diagnostics)** segment is also witnessing major developments –Fluorescence immunoassay (FIA) is a very recent development in the IVD space. It is a sensitive technique that can be used in the measurement of many compounds, including drugs, hormones, and proteins; in the identification of antibodies; and in the quantification of antigens such as viral particles and, potentially, bacteria • **Digital Twin Technology** is becoming another focus area in the industry, with Siemens, GE Healthcare and Philips working toward using this technology for various use cases. Siemens Healthineers, for example, discussed its organ digital twin technology (powered by AI) for enabling simulation of the organ's physiology to help doctors choose a therapy with best possible outcomes —as tested virtually on the digital twin.
Future Market Size & CAGR	• In future, it is anticipated that the overall diagnostic medical device market in terms of revenue will reach to **PHP 31,009.8 Million**, at a CAGR of **10.9%** during the period 2020 – 2025.

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

USES/PURPOSE OF DIAGNOSTIC MEDICAL DEVICES

Diagnostic medical equipment and supplies help clinicians to measure and observe various aspects of a patient's health so that they can form a diagnosis. Once a diagnosis is made, the clinician can then prescribe an appropriate treatment plan.

Stethoscopes are probably the most recognizable of all medical diagnostic tools. They are used to listen to heart sounds, the lungs, and even blood flow in the arteries and veins.

Sphygmomanometers help in diagnosing cases of diabetes, high or low blood pressure, artery hardening, arterial plaque and hypotension.

Ophthalmoscopes are handheld tools that allow a physician to see into the fundus of a patient's eye. This type of diagnostic tool is commonly used in physical or outpatient exams. Ophthalmoscopes can help diagnose bacterial infections, detached retinas & glaucoma. Otoscopes are handheld devices that allow physicians to look into the ear canal and view the tympanic membrane through the magnification lens.

Thermometers are used in all areas and levels of care, from routine physical exams to emergency department triage to inpatient care. There are now electronic thermometers that shorten the time necessary to measure a patient's temperature.

Electrocardiographs measure the electrical activity of the heart. Amid the examination, a pulse can be recorded, just like the normal heartbeats. These are two key pointers in an issue of the heart. Doctors can even examine an electrocardiograph to decide the size and position of every heart chamber.

Diagnostic Medical Imaging is a common technique to visualize physical diagnosis among the clinical community. Techniques that fall under the medical imaging umbrella include:

- Radiography (X-rays)
- Magnetic resonance imaging (MRI)
- Computed tomography (CT)
- Fluoroscopy
- Ultrasound
- Echocardiography, and
- Nuclear medicine, such as PET

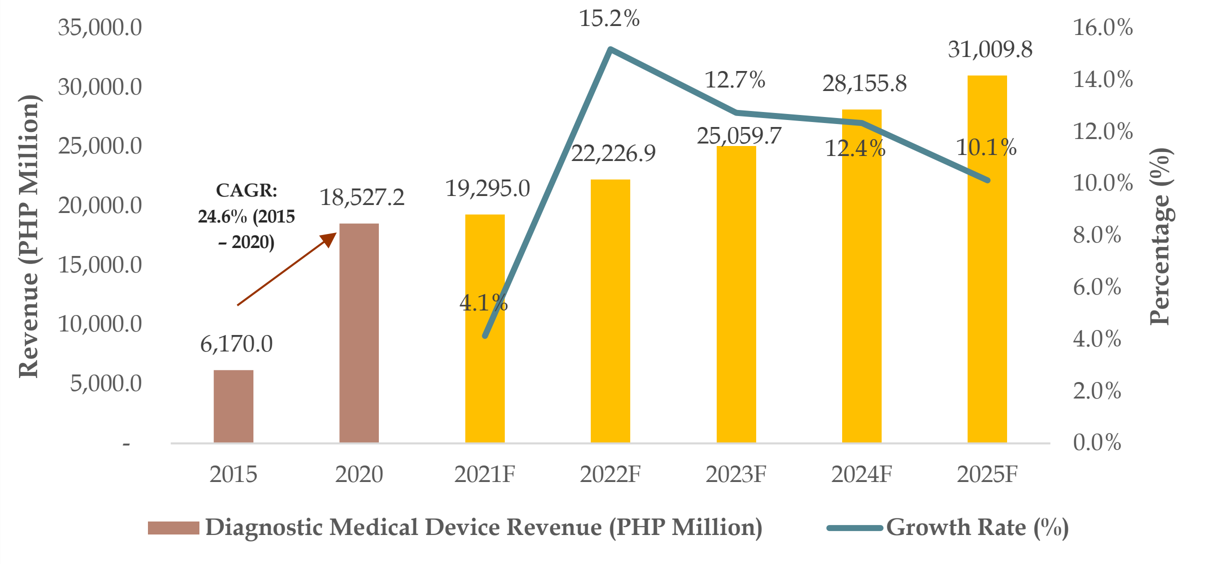
DIAGNOSTIC MEDICAL DEVICES MARKET SIZE BY REVENUE, 2015, 2020 – 2025

Table 9-2: Philippines Diagnostic Medical Devices Market Size and Description on the Basis of Revenues, 2015, 2020 – 2025

Particulars	Rationale
Key Takeaways	• **Market Size:** In 2015, the diagnostic medical device market in terms of revenue was evaluated at PHP 6,170.0 million, which grew at a double digit CAGR of 24.6% during the period 2015 – 2020 and reached to PHP 18,527.2 Million in 2020. • Rapid surge in the overall revenue generation of industry has been majorly observed due to increase in Remote Diagnostic Solutions along with companies offering affordable, higher quality lab testing and diagnostic devices that can efficiently manoeuvre geographical challenges. • The level of infrastructure development is varied across the archipelago, opening possibilities for regional diagnostic centers operating hub-and-spoke models for community outreach (e.g. collect test samples & then send to a central hub). • **Segment Wise Revenue Split:** In 2020, diagnostic medical device has been largely dominated by diagnostic equipment market as it contributed about 79.3% in the overall revenue, whereas remaining revenue contribution has been made by the diagnostic consumables. Moreover, in the future also it is anticipated that the revenue contribution from diagnostic equipment will increase and reach up to 79.8% in 2025. • **Future Market Size:** In future, it is anticipated that the overall diagnostic medical device market in terms of revenue will reach to PHP 31,009.8 Million, at a CAGR of 10.9% during the period 2020 – 2025. • **Future Growth Drivers:** Demand for ECGs, CT scans, X-ray machines, dialysis machines, and other laboratory instruments will remain high, while dermatology services and clinical aesthetics procedures is also anticipated to grow in the near future. • **Demand for Diagnostic Equipment continue to Increase:** Most hospital improvements concentrate on specialized services for radiology, cardiac, lung and kidney examinations, and pathology to address the problem. Hospitals enhance their pathology services to meet demands for various diagnostic testing, especially for diabetes, cancer, and HIV/AIDS. • **Key Players:** Major companies which are currently dominating the market include Siemens, GE Healthcare, Philips, Fuji, Toshiba, Shimadzu and others.

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

Figure 9-1: Philippines Diagnostic Medical Devices Market Size on the Basis of Revenue in PHP Million and Growth Rate in Percentage (%), 2015, 2020 – 2025



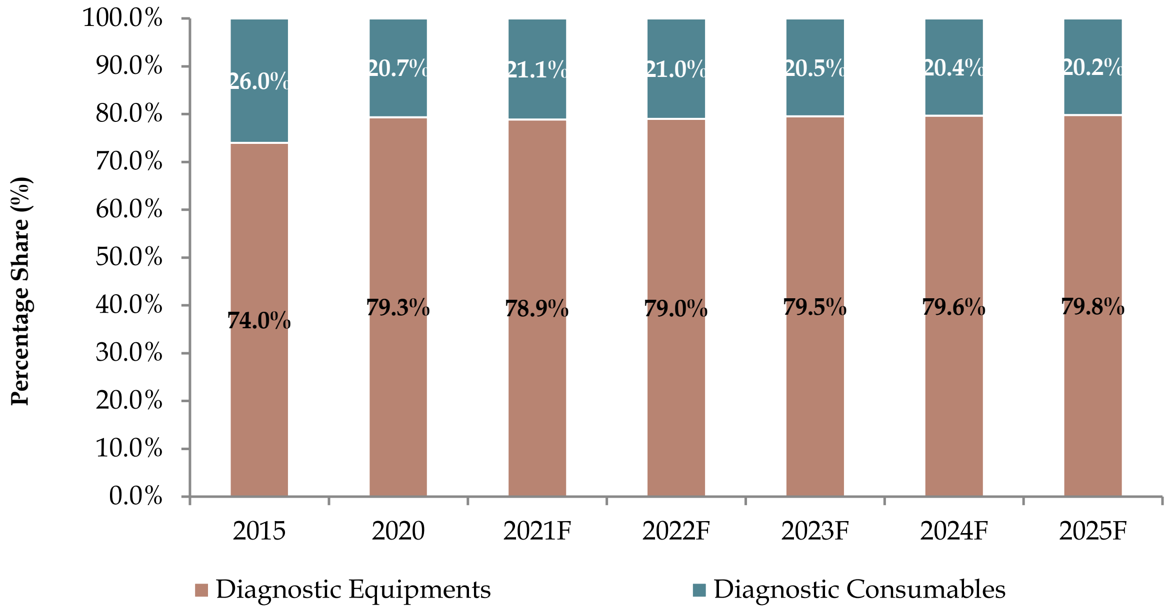
Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Note: F refers to Forecasted Numbers
Philippines Diagnostics Medical Devices market has been defined as the overall spending made by end users on Diagnostics Medical Devices and consumables including MRI, CT Scan, Ultrasound, X-Ray, Electro diagnostic Apparatus, ECG and others

DIAGNOSTIC MEDICAL DEVICES BY EQUIPMENT AND CONSUMABLES, 2015, 2020-2025

Diagnostic Equipment have accounted for the largest share of 79.3% of the revenue share in Diagnostic Medical Devices market during 2020. These equipment include kits, scales, stethoscopes, pulse oximeters, reflex hammers/ tuning forks, otoscopes, ophthalmoscopes, thermometers, Doppler's, ultrasound, X-ray, and imaging products.

Diagnostic Consumables accounted for the remaining 20.7% revenue share in Diagnostic Medical Devices market in 2020. Consumables include blood testing, urinalysis, pregnancy testing, specimen containers, catheter, infectious disease testing, test strips, gels, containers, swabs, and more.

Figure 9-2: Philippines Diagnostic Medical Devices Market Segmentation by Diagnostic Equipment & Diagnostic Consumables on the Basis of Revenue in Percentage (%), 2015, 2020-2025



Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

Table 9-3: Philippines Diagnostic Medical Devices Market Segmentation by Diagnostic Equipment & Diagnostic Consumables on the Basis of Revenue in PHP Million, 2015, 2020-2025

Revenue Share in PHP Million	2015	2020	2021F	2022F	2023F	2024F	2025F
Diagnostic Equipment	4,564.0	14,700.3	15,217.8	17,565.9	19,923.2	22,425.6	24,744.4
Diagnostic Consumables	1,606.1	3,826.9	4,077.2	4,661.0	5,136.5	5,730.2	6,265.4
Diagnostic Medical Devices	**6,170.0**	**18,527.2**	**19,295.0**	**22,226.9**	**25,059.7**	**28,155.8**	**31,009.8**

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

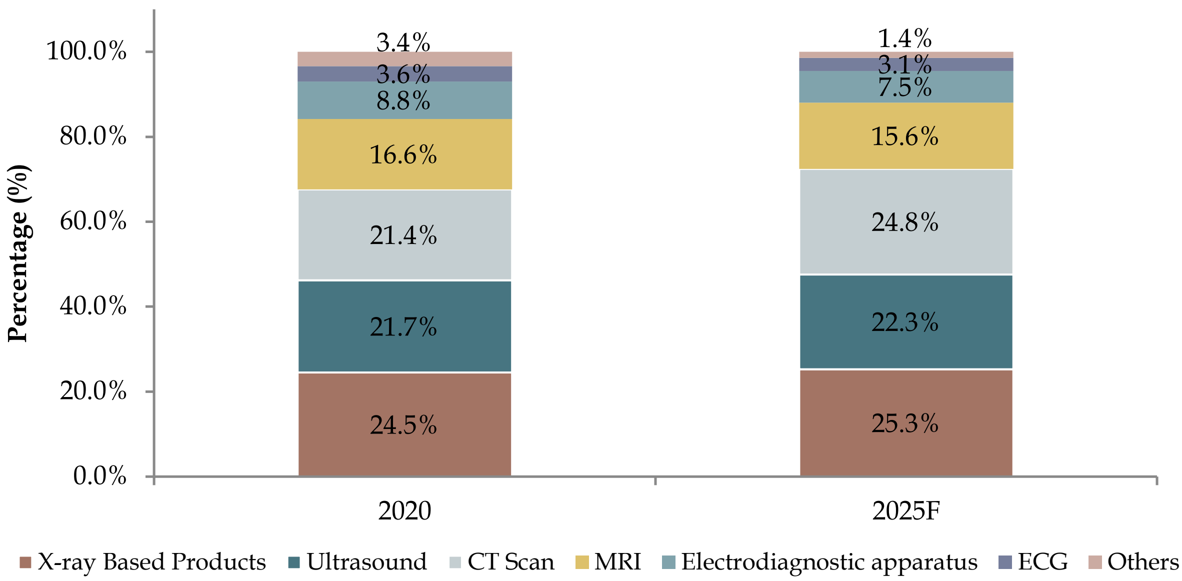
DIAGNOSTIC MEDICAL DEVICES BY TYPE OF DIAGNOSTIC IMAGING PRODUCT (X-RAY BASED PRODUCTS, ULTRASOUND, CT SCAN, MRI, ELECTRO-DIAGNOSTIC APPARATUS, ECG AND OTHERS), 2020 & 2025

The rapid surge in overall revenue generation of industry has been majorly observed due to increase in Remote Diagnostic Solutions along with companies offering affordable, higher quality lab testing and diagnostic devices that can efficiently manoeuvre geographical challenges. Demand for ECGs, CT-Scans, X-ray machines, dialysis machines, and other laboratory instruments will remain high, while dermatology services and clinical aesthetics procedures is also anticipated to grow in the near future.

X-Ray Based Products for Diagnostic Imaging are leading the revenue contribution with a share of 24.5% in the market. This is followed by revenue contribution from Ultrasound (21.7%), CT-Scan (21.4%) & MRI (16.6%) in the diagnostic segmentation. A small proportion of revenue is contributed by Electro diagnostic Apparatus (8.8%) & ECG (3.3%).

The revenue share contribution from diagnostic medical devices is expected to remain stable in the future (2025F). X-Ray based products (25.3%) are expected to dominate the revenue share in 2025F as well. However, it is likely that the revenue share from CT-Scan (24.8%) would exceed the contribution by Ultrasound (22.3%) based diagnostic devices in 2025F.

Figure 9-3: Philippines Diagnostic Medical Equipment Market Segmentation by Type of Diagnostic Imaging Product (X-ray Based Products, Ultrasound, CT Scan, MRI, Electro-diagnostic Apparatus, ECG and Others) on the Basis of Revenue in Percentage (%), 2020 & 2025



Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

Note: Others include Product based on UV or infrared application, Products based on alpha, beta, gamma radiation

Table 9-4: Philippines Diagnostic Medical Equipment Market Segmentation by Type of Diagnostic Imaging Product (X-ray Based Products, Ultrasound, CT Scan, MRI, Electro-diagnostic Apparatus, ECG and Others) on the Basis of Revenue in PHP Mn, 2020 & 2025

Diagnostic Medical Equipment Revenue Share in PHP Million	2020	2025F
X-ray Based Products	3,598.3	6,270.2
Ultrasound	3,193.7	5,513.1
CT Scan	3,150.9	6,141.6
MRI	2,443.6	3,865.8
Electro diagnostic apparatus (Functional Examination)	1,287.9	1,846.1
ECG	525.8	761.3
Others	499.8	346.4
Total	**14,700.3**	**24,744.4**

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

Note: Others include Product based on UV or infrared application, Products based on alpha, beta, gamma radiation

Note: Above mentioned revenues are only for Diagnostic medical equipment and does not include consumables sales

TYPES OF SUPPLIES USED IN DIAGNOSTIC IMAGING PROCEDURES

A type of test that makes detailed pictures of areas inside the body. Imaging procedures use different forms of energy, such as x-rays (high-energy radiation), ultrasound (high-energy sound waves), radio waves, and radioactive substances. They may be used to help diagnose disease, plan treatment, or find out how well treatment is working. **Diagnostic imaging procedures majorly include computed tomography (CT), ultrasonography, magnetic resonance imaging (MRI), and nuclear medicine tests**.

On the other hand, some of the **largely used supplies in diagnostic imaging procedures includes Syringes and kits, Day-sets, Patient lines, Tubings Accessories, Ultrasound Jelly, Ultrasound Roll, Carestream Dental Films, Medical Dental X Ray Film, Spray catheters, Biopsy forceps, cleaning brushes and many more**.

LIST OF TOP FIVE BRANDS IN DIAGNOSTIC IMAGING PRODUCTS

Major brands operating under the manufacturing of diagnostic imaging products includes Siemens, GE Healthcare, Philips, FujiFilm, Mindray and many more. In 2020, Siemens accounted about 40% market share in the manufacturing up of diagnostic equipment such as X-ray products, Ultrasound machines, CT scan, MRI machines and others.

All the manufacturers largely covers the entire range of diagnostic equipment range in their current product folio of the imaging products.

MARKET SHARE FOR MEDILINES IN DIAGNOSTIC MEDICAL EQUIPMENT DISTRIBUTOR MARKET BY REVENUE, 2020

Medilines has their specialization into X-Ray and CT-Scan products as a part of diagnostics segment. Under this category, Medilines has reported a market share of **18.2%** in revenue terms out of the Distributor Segment in Top 2 categories for Diagnostics Equipment market (X-Ray and

CT scan). Under X-Ray Segment, Medilines has a quite strong position among distributor segment, with a revenue share of 24% out of the Distributor Segment in Philippines X-Ray Equipment market.

Table 9-5: Market Share for Medilines in Philippines Diagnostics Equipment Market on the Basis of Revenue in PHP Million and Percentage (%), 2020

Parameters	Market Share, 2020 (PHP Million & %)
X-Ray + CT Scan	
Distributor Revenue-X-Ray + CT Scan (PHP Million)	2024.8
Medilines Revenue from -X-Ray + CT Scan (PHP Million)	368.1
Market Share for Medilines in Categories Specified above-Distributor Segment	**18.2%**
X-Ray	
Distributor Revenue-X-Ray Equipment (PHP Million)	1079.5
Medilines Revenue from -X-Ray Equipment Segment (PHP Million)	259.3
Market Share for Medilines in X-Ray Equipment-Distributor Segment	**24.0%**

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Note: All the above revenues are inclusive of VAT. The above revenues are only for Equipment and exclude Consumables
Note: The above market share is only out of distributor segment for diagnostic equipments

COMMENTARY ON DRIVERS/ TRENDS/ DEVELOPMENTS (DIAGNOSTIC MEDICAL DEVICE)

Growing Importance of Diagnostic Imaging: Medical imaging Industry encompasses different imaging modalities and processes to image the human body for diagnostic and treatment purposes and therefore plays an important role in initiatives to improve public health for all population groups. Furthermore, medical imaging is frequently justified in the follow-up of disease already diagnosed and/or treated. Medical imaging, especially X-ray based examinations and ultrasonography, is crucial in a variety of medical setting and at all major levels of health care. In public health and preventive medicine as well as in both curative and palliative care, effective decisions depend on correct diagnosis.

New Technologies: The use of diagnostic imaging has increased dramatically over the past decade, contributing to medical costs and to medical exposure to ionizing radiation. X-Ray Based Products are mostly used for heath checks, which is followed by Ultrasound and CT scan. MRI, Electro diagnostic Apparatus and ECG are some of the others widely used machineries. The availability of new imaging modalities and discovery of new applications of existing techniques have also greatly contributed to the increased utilization of diagnostic imaging in daily practice.

Increasing Coverage of Philhealth: Primary care benefits as per Philhealth are increased to include senior citizens, formal economy members and lifetime members, aside from indigent and sponsored members. Members under these sectors and their dependents can now avail of benefit and services such as health screening and assessment, diagnostic services, follow-up consultation as well as medicines from accredited EPCB health care institutions (HCIs). This has created favorable reimbursement for users of diagnostic imaging services which has helped in increasing the usage of such services due to the new reduced costs.

9.2. DIALYSIS MEDICAL DEVICE (EQUIPMENT + CONSUMABLES) MARKET

DIALYSIS MEDICAL DEVICE (EQUIPMENT + CONSUMABLES) MARKET OVERVIEW

Table 9-6: Philippines Dialysis Medical Device Market Overview and Genesis Including Introduction, Current Market Size & CAGR, New Technologies & Devices and Future Market Size & CAGR

Parameters	Description
Introduction	• The prevalence of **chronic kidney disease (CKD)** in the Philippines has emerged as the **7th leading causes** of death. **One Filipino dies** from **kidney failure** every hour. In 2020, there are close to **35,000 Filipinos** who are undergoing dialysis and treatment for kidney disease in the country. Over the past decade, the number of new cases has increased by about **15% every year**; and with uncontrolled diabetes and hypertension as risk factors for kidney disease that could end up requiring a kidney transplant, dialysis is a temporizing measure. • In the Philippines, only **partial support for Kidney Replacement Therapy (KRT) is provided depending on funding availability**, and even then, **health expenditures for medications are still largely out-of-pocket**. A **peritoneal dialysis-first policy was also implemented**, but it has **not been successful**. • Market Demand for dialysis medical devices is majorly driven by private sector hospitals with four major hospitals such as **SLMC, MPIC, Qualimed, and MGHI**. Whereas, public hospitals tend to place a greater emphasis on preventive healthcare, while private hospitals concentrate on curative services. • **B Braun, Fresenius, Terumo, Medtronic** are some of the major brands which are currently operating in the dialysis equipment market.
Current Market Size & CAGR	• **Market Size:** In 2015, it has been witnessed that the dialysis medical device market in terms of revenue was **PHP 1,924.6 Million**, which later grew at a **double digit CAGR of 26.8%** during the period 2015–2020 and it reached to **PHP 6,312.1 Million** in 2020.
New Technologies & Devices	• The companies in the dialysis devices and equipment market are focusing on technological developments to improve the accessibility of the dialysis treatment to patients. • For instance, in January 2019, **Fresenius Medical Care in US** launched **4008A dialysis machine** tailored to needs in emerging markets. This machine is aimed to improve accessibility to life-sustaining dialysis treatment for patients in emerging markets who are living with end-stage renal disease (ESRD). Also in October 2019, Fresenius Medical Care wins FDA breakthrough nod for clot-preventing dialysis device. This device aims to prevent blood clotting without the use of blood

	thinner medication. Such technological advancements are expected to drive the dialysis devices and equipment market. • **Portable Dialysis:** Quanta Dialysis Technologies, a United Kingdom organization, has invented the compact portable dialysis machine called the SC+ which is less prone to infections. Outset Medical Inc. a US-based healthcare company has innovated and created Tablo, in which treatment data can easily be sent to cloud storage through wireless connectivity, to perform real-time dialysis. • **Wearable Dialysis:** Home hemodialysis enables patients to undergo dialysis in the comfort of their homes, but not all patients are capable of performing home hemodialysis. Recent interest in wearable and implantable -- or ambulatory -- hemodialysis devices has largely been motivated by the desire to implement the benefits of home hemodialysis in a more patient-friendly manner.
Future Market Size & CAGR	• **Market Size:** Dialysis medical device market is anticipated to grow at a **CAGR of 16.4%** for the period of 2020-2025F. The market's revenue for the year 2025F is projected to reach **PHP 13,507.0 Million.**

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

USES/PURPOSE OF DIALYSIS MEDICAL DEVICES

The different options available for patients of **end-stage renal disease (ESRD) include dialysis (hemodialysis or peritoneal dialysis) or kidney transplantation**. Dialysis helps to remove the excess waste products (including urea and creatinine), fluid, and salt from the body. Hemodialysis Catheter, Fistula Needles, Blood Line, Dialyzer and Peritoneal Dialysis Set & Transfusion Set are major important disposables products required in the dialysis procedure.

Dialyzer machine includes a blood pump to move blood between patient and dialyzer, a delivery system to transport dialysis solution, and monitoring devices. Pressure monitors, guard against excessive suction of blood from, and excessive resistance of blood return to, the patient's vascular access site. A dialyzer is often referred to as an "artificial kidney." Its function is to remove the excess wastes and fluid from the blood, when the patient's kidneys can no longer perform that task.

Peritoneal dialysis is a treatment for kidney failure that uses the lining of your abdomen, or belly, to filter your blood inside your body. Health care providers call this lining the peritoneum. A few weeks before you start peritoneal dialysis, a surgeon places a soft tube, called a catheter, in your belly.

Hemodialysis catheter are single/double/multiple lumen catheter that provides temporary vascular access for hemodialysis until a permanent access is available or until another type of dialysis therapy is substituted. The multiple lumen catheter contains two large bore lumens that are connected to the dialysis machine to form a complete circuit for the removal and return of the patient's blood during treatment. Catheters have two openings inside; one is a red (arterial) opening to draw blood from your vein and out of your body into the dialysis pathway and the other is a blue (venous) opening that allows cleaned blood to return to your body.

Proper flow of the patient's blood through the dialysate system is key to ensure the treatment quality. The flow must be constant and at the right speed so that the solutes exchange is complete, but so that the duration is reduced at maximum. Medical device manufacturers have developed high quality **intravenous connections (blood lines)** that ensure the flow and sanity conditions necessary for a successful dialysis.

DIALYSIS MEDICAL DEVICE MARKET SIZE BY REVENUE, 2015, 2020 – 2025

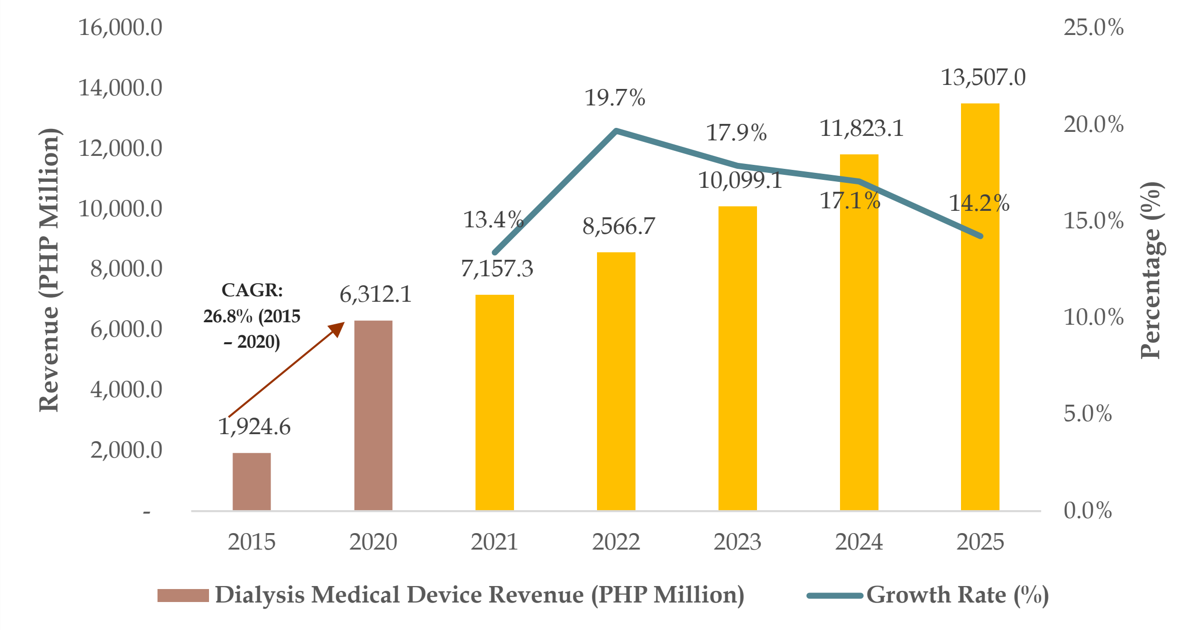
Table 9-7: Philippines Dialysis Medical Devices Market Size and Description on the Basis of Revenues, 2015, 2020 – 2025

Particulars	Rationale
Key Takeaways	• **Market Size:** In 2015, it has been witnessed that the dialysis medical device market was evaluated at PHP 1,924.6 Million, which later grew at a double digit CAGR of 26.8% during the period 2015 – 2020 and reached to PHP 6,312.1 Million in 2020. • The Philippines in particular has experienced a significant growth in the prevalence of dialysis with an approximate increase of 400% over the past 10 years. In fact, kidney failure (and earlier stages of CKD) has become one of the leading causes of hospitalization and is now the 7th leading cause of mortality in the country.

- Furthermore, it has been witnessed that the Philippines is emerged as the one of the key destination for medical tourism, which has further contributed towards rising demand of dialysis equipment devices in the country.
- Major reasons contributing for the growth in Medical Tourism includes large pool of English-speaking professionals, its culture of hospitality, the quality of education and skills of health professionals, its young and hospitable workforce, its competitive price advantage for healthcare and other services, and its popularity as a tourist destination. In 2020, nearly 18% of all tourism activities in Philippines is contributed by Health & Wellness Industry.
- **Private Hospitals Dominating the Market:** Market Demand for dialysis medical devices is majorly driven by private sector hospitals with four major hospitals such as SLMC, MPIC, Qualimed, and MGHI. Whereas, public hospitals tend to place a greater emphasis on preventive healthcare, while private hospitals concentrate on curative services.
- Private hospitals/clinics are equipped with more sophisticated medical equipment due to higher budgets. As, there are about 433 free standing dialysis clinic in the country, out of which about 433 are privately owned and only 6 clinics are owned and managed by the government in 2020.
- **Average Cost of Dialysis Machine:** It has been observed that each machine costs PHP 800,000 with the lowest at PHP 650,000 in June'2019. ***(Source: Interview Conducted with JYLBERD L. NABOR, Chairman & CEO, NEPHROMED ASIA DIALYSIS CENTER by Manila Bulletin)***
- Since, Philippines have been severely impacted by Covid-19 virus and the post symptoms of this virus has impacted the patients causing various diseases, which further led to failure of multiple organs in the body. Therefore, in the near future it is anticipated that the demand of dialysis medical devices will increase rapidly in the country. Also, it is anticipated that the demand for home based dialysis machines will increase at a higher rate due to existing fear of COVID-19 virus among people.

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

Figure 9-4: Philippines Dialysis Medical Devices Market Size on the Basis of Revenue in PHP Million and Growth Rate in Percentage (%), 2015, 2020 – 2025



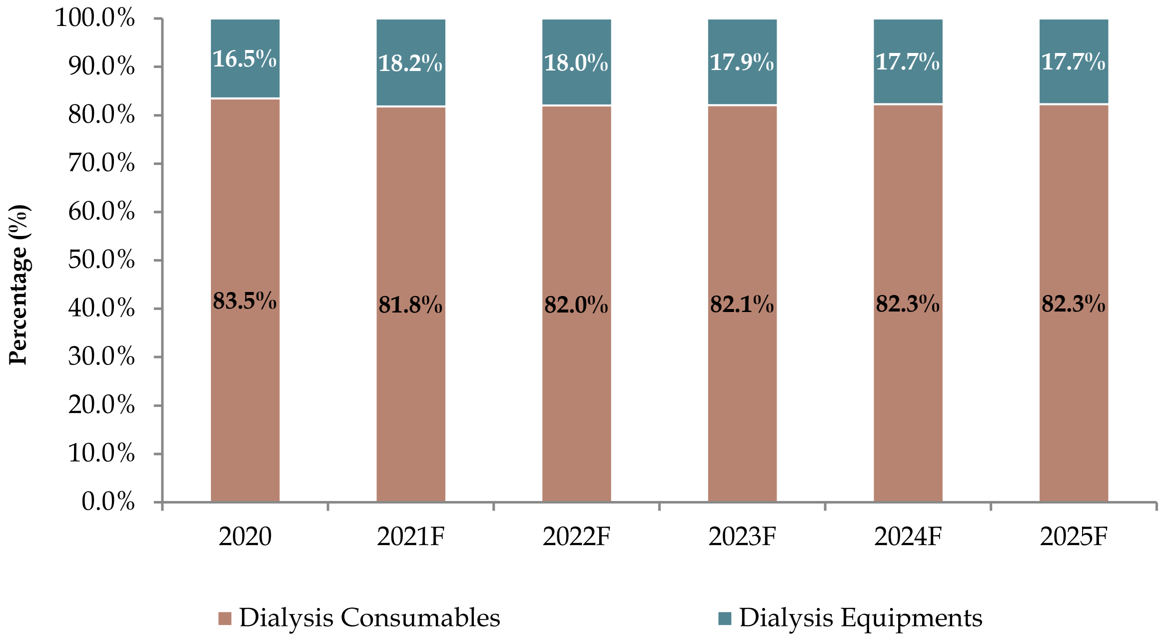
Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Note: F refers to Forecasted Numbers
Philippines Dialysis Medical Devices market has been defined as the total spending made on dialysis equipment (Dialysis machines) and dialysis consumables by all the end users involved in the segment

DIALYSIS MEDICAL DEVICES BY EQUIPMENT AND CONSUMABLES, 2020-2025

Dialysis Consumables have accounted for the largest share of 83.5% in terms of revenues in Dialysis Medical Devices market during 2020. Consumables include dialyzers, AV tubing sets, fistula needles, catheters, sodium bicarbonate cartridges and bags, bicarbonate and acid concentrate solutions, iron sucrose inj, citrostrile, endotoxin filters, disinfectant and more.

Dialysis Equipment accounted for the remaining 16.5% revenue share in Dialysis Medical Devices market in 2020. These equipment include dialysis machine, IV poles, heating pad, automated cycling machine and others.

Figure 9-5: Philippines Dialysis Medical Devices Market Segmentation by Dialysis Consumables & Dialysis Equipment on the Basis of Revenue in Percentage (%), 2020-2025



Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

Table 9-8: Philippines Dialysis Medical Devices Market Segmentation by Dialysis Consumables & Dialysis Equipment on the Basis of Revenue in PHP Million, 2015, 2020-2025

Particulars	2020	2021F	2022F	2023F	2024F	2025F
Dialysis Consumables	5,270.6	5,855.4	7,020.6	8,291.4	9,729.1	11,122.3
Dialysis Equipment	1,041.5	1,301.9	1,546.1	1,807.7	2,094.0	2,384.7
Dialysis Devices	**6,312.1**	**7,157.3**	**8,566.7**	**10,099.1**	**11,823.1**	**13,507.0**

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

LIST OF EQUIPMENTS REQUIRED FOR DIALYSIS

Dialysis is a treatment that cleans waste products out of the blood when kidneys stop functioning properly. Through dialysis, people can live a long and high quality life. Some of the major types of Dialysis include hemodialysis and peritoneal dialysis.

Hemodialysis can be performed in a dialysis center or in your home. Whereas, **peritoneal** dialysis can be performed at home. The key equipment which are required for performing dialysis function includes Dialysis Machine, IV poles, heating pad, automated cycling machine, and many more.

TYPES OF SUPPLIES USED IN DIALYSIS PROCEDURES

The kidneys filter blood by removing waste and excess fluid from human body. This waste is sent to the bladder to be eliminated. Dialysis performs the function of the kidneys if they have failed.

According to the **National Kidney Foundation, end-stage kidney failure occurs when the kidneys are performing at only 10% to 15%** of their normal function.

Therefore, when kidneys cannot perform these functions due to disease or injury, **dialysis help's the body to keep running as normally as possible**. Without dialysis, salts and other waste products will accumulate in the blood, poison the body, and will damage other organs.

The **supplies which are largely used in the process of dialysis include** various items such as Dialysis Dialyzer, Bloodline, Analyzers, Concentrate Solution, Disinfectants, Wndotoxin Filter, Bicarbonate Device, AV tubing set, Fistula Needles, and many more.

LIST OF TOP FIVE BRANDS IN DIALYSIS MEDICAL DEVICE

B Braun, Fresenius, Medtronic, Baxter International, NIPRO Corporation, Terumo Corporation, Dialife, 3M, Medikit, CMA Microdialysis, Medionics International, Renalyx, Toray Medical Co. Ltd. Asahi Kasei Medical are some of the major brands which are currently operating in the dialysis equipment market.

These brands provide a wide range of dialysis equipment such as hemodialysis and peritoneal dialysis machines in the country. However, the **majority of dialysis equipment are being imported in Philippines and the major countries exporting the dialysis products includes US, Europe, China and Others**.

MARKET SHARE FOR MEDILINES IN DIALYSIS MEDICAL EQUIPMENT DISTRIBUTOR MARKET BY REVENUE, 2020

Medilines has emerged as a clear leader in Dialysis Medical Device Equipment, out of the distributor segment. During 2020, Medilines has achieved a revenue share of 50.5% in dialysis equipment market on the basis of revenues, in distributor segment.

Table 9-9: Market Share for Medilines in Philippines Dialysis Equipment Market on the Basis of Revenue in PHP Million and Percentage (%), 2020

Parameters	Market Share, 2020 (PHP Million & %)
Overall Dialysis Equipment Market Revenues (PHP Million)	1,041.5
Share of Distributors in Overall Dialysis Equipment	40%
Distributor Revenue-Dialysis Equipment (PHP Million)	416.6
Medilines Revenue from Dialysis Equipment (PHP Million)	210.6
Market Share for Medilines in Dialysis Equipment-Distributor Segment	**50.5%**

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis
Note: All the above revenues are inclusive of VAT. The above revenues and market share are only for Dialysis Equipment and exclude Consumables
Overall Dialysis Equipment market has been defined as the overall spending made by end users on dialysis machine
Note: The above market share is only out of distributor segment for dialysis equipments

COMMENTARY ON DRIVERS/ TRENDS/ DEVELOPMENTS (DIALYSIS MEDICAL DEVICE)

Growing Cases of Chronic Diseases: Changing lifestyle such as increase in working hours, limited physical activities, unhealthy food habits with increase in habit of smoking and drinking are some of the major causes of chronic diseases such as diabetes, hypertension, chronic liver failure and chronic kidney diseases.

According to the National Kidney Institute, one Filipino suffers chronic kidney failure every hour. Kidney disease was the sixth leading cause of death in the Philippines in 2013, poorly controlled diabetes and hypertension are among the leading causes of chronic kidney failure in the country. During 2017, Philippine Renal Disease Registry annual report shows that 21,535 Filipino patients underwent dialysis due to kidney failure in 2016. There have been a massive jump from a mere 9,716 cases recorded in 2010—increasing at the rate of 8% - 18% per year. While, in 2020, due to kidney disease (Number of People Undergo Dialysis Treatment) reached about 35,000 – 40,000 in Philippines, thereby driving the demand for dialysis equipment market in the country.

Increasing Focus Innovative Product Design and Safety Parameters: Dialysis market is driven by innovative and advanced technologic medical devices that are applied to the dialysis machine. The introduction of new generation sensors, components, and single-chip solutions components has made a significant impact on the design and structure of the dialysis machine. Most of the manufacturers have a high focus on patient and operator parameters as this machine is highly regulated and certified based on safety parameters. The adoption of hemodialysis or peritoneal dialysis is mandated for a person suffering from chronic kidney diseases. The device is popular in all healthcare facilities and the increased use of dialysis machines has bought a significant clinical purpose for treating End-Stage Renal Disease (ESRD).

Increase in Dialysis Consumables due to COVID-19 Outbreak: Corona virus can be easily spread to humans through direct human-to-human contact or indirect surface-to-human contact, which is reflected in the trend of dialysis consumables market. With the onset of corona virus, many companies are investing in manufacturing and selling disposable items such as caps, blood tubes, AV fistula needles, dialysis catheters, dialysis membranes and other dialysis consumables as they limit the spread of the virus and reduce the risk of infection.

Growth in Home Care Dialysis: With the development of technology, the costs for portable dialysis machines have come down. Due to COVID-19, the out of home movements has also decreased. This has helped in increasing the penetration of home care dialysis in the middle and lower income household levels. The companies are increasingly targeting this positioning, to grow the sales of devices and move the facilities out of dedicated clinics.

9.3. Cancer/Radiation Therapy (Equipment + Consumables) Market

CANCER/RADIATION THERAPY (EQUIPMENT + CONSUMABLES) MARKET OVERVIEW

Table 9-10: Philippines Cancer/Radiation Therapy Market Overview and Genesis Including Introduction, Current Market Size & CAGR, Nature of Competition, New Technologies & Future Market Size

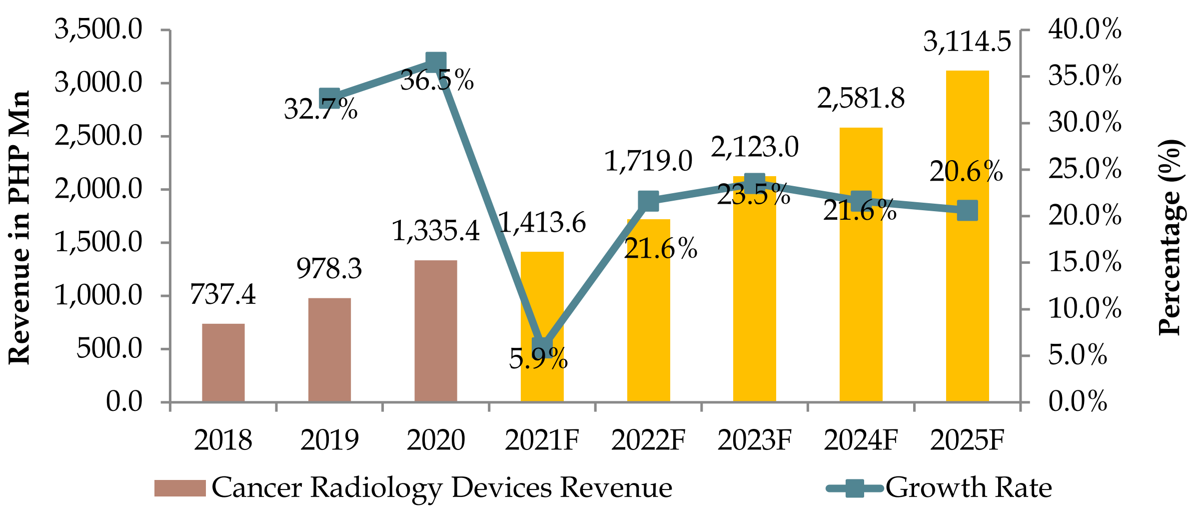
Parameters	Description
Introduction	• In 2020, **around 153,751 new cases of Cancer** have been reported in the country, whereas **about 92,606 deaths has been recorded** in the country due to cancer in the same year. **Breast cancer has been ranked 1st** in terms of highest number of cancer cases recorded, followed by Lung cancer and Colon cancer. • In February 2019, President of Philippines signed the **National Integrated Cancer Control Act (NICCA) (Philippines Republic Act 11215)** to strengthen cancer control in the country, increase cancer survivorship and reduce burden on families and cancer patients. • Market Demand for cancer/radiation therapy devices is majorly driven by private sector hospitals such as **St. Luke's Medical Center, The Medical City, Asian Hospital and Medical Center, San Juan de Dios Educational Foundation and Makati Medical Center**.
Current Market Size & CAGR	• **Market Size:** In 2018, it has been witnessed that the **cancer/radiation therapy medical device market** in terms of revenue was **PHP 737.4 Million**, which later grew at a **double digit CAGR of 34.6%** during the period 2018–2020 and it reached to **PHP 1,335.4 Million** in 2020. • Cancer/radiation therapy medical device manufacturers have emerged drastically in the last 3-4 years owing to the rapid increase in the number of cancer patients.
Nature of Competition	• The market is currently highly concentrated with the presence of **around 2-3** big cancer therapy device manufacturers. **Siemens and Elekta** are the leading cancer therapy medical equipment brands in the market. The companies provide wide range of cancer/radiation therapy equipment (such as HD digital accelerators) in the country to treat cancer related health complications.
New Technologies	• **Molecular cancer diagnostics:** Matching the right targeted therapy to the right patient based on the individual molecular genetic alterations in each cancer patient's tumor is a promising and attractive precision oncology approach. • **Artificial intelligence-based therapy design:** The A.I. analyses hospital data to identify tumors on patient scans. And it's amazingly reliable, cutting CT processing times and treatment planning by up to 90%. • **DNA cages:** Most cancer treatments today destroy not only cancerous cells but also healthy ones. The ultimate goal is delivering drugs only to

	cells that need to be treated. Using DNA cages holding medications might be the answer. Cancer cells can trigger the DNA cage to open, and thus the drug could only impact those cells, but not the healthy ones. • **Precision surgery:** Surgeons using surgical robots such as DaVinci are capable of performing operations with previously unachievable precision. Surgical robots today have 3D cameras that can record operations and stream at the same time. The robot's added value is to assist the surgeon in suturing, dissecting and retracting tissue, leading to more precision in surgery than ever. • **Pain management:** Companies are now developing devices that help ease symptoms and side effects. A good example is Quell, a wearable technology with intensive nerve stimulation clinically proven to help manage chronic pain. Another technology, virtual reality, can also serve cancer patients in pain reduction by distracting the patients.
Future Market Size and CAGR	• **Market Size:** Cancer/radiation therapy medical device market is anticipated to grow at a **CAGR of 18.5%** for the period of 2020-2025F. The market's revenue for the year 2025F is projected to reach **PHP 3,114.5 Million.**

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

CANCER/RADIATION THERAPY MEDICAL DEVICES REVENUES AND SPLIT BY EQUIPMENT AND CONSUMABLES MARKET, 2015, 2020-2025

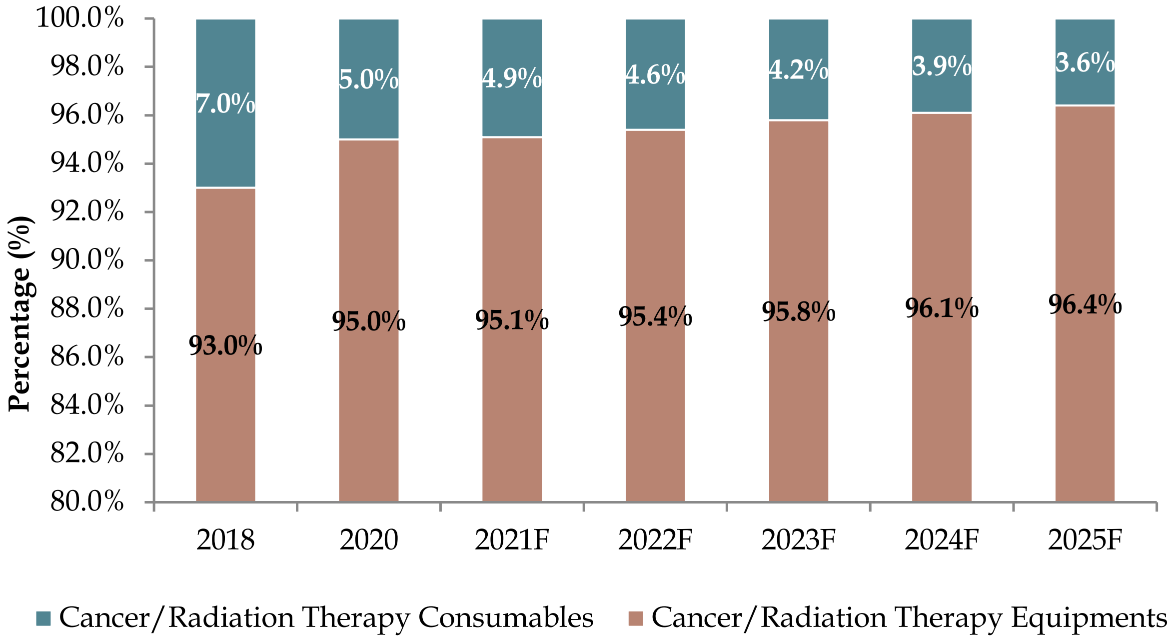
Figure 9-6: Philippines Cancer/Radiation Therapy Medical Devices Market Size on the Basis of Revenue in PHP Million and Growth Rate in Percentage (%), 2018-2020–2025



Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

Note: Cancer Therapy Market has been defined as sum total of equipment and consumables such as Linear Accelerator, Brachytherapy, Cyclotron and others with consumables

Figure 9-7: Philippines Cancer/Radiation Therapy Medical Devices Market Segmentation by Equipment & Consumables on the Basis of Revenue in Percentage (%) 2018, 2020–2025



Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

Table 9-11: Philippines Cancer/Radiation Therapy Medical Devices Market Segmentation by Equipment & Consumables on the Basis of Revenue in PHP Million, 2018, 2020–2025

Revenue Share in PHP Million	2018	2020	2021F	2022F	2023F	2024F	2025F
Cancer Therapy Equipment	685.6	1,268.7	1,344.8	1,640.6	2,034.4	2,482.0	3,003.2
Cancer Therapy Consumables	51.8	66.8	68.8	78.4	88.6	99.8	111.3
Cancer Therapy Medical Devices	**737.4**	**1,335.4**	**1,413.6**	**1,719.0**	**2,123.0**	**2,581.8**	**3,114.5**

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

USES/PURPOSE OF CANCER/RADIATION THERAPY DEVICES

Radiation therapy is a clinical modality that uses ionizing radiation in the treatment of patients with malignant neoplasia (and occasionally benign disease). It is an important component of multimodality cancer therapy, surgery and chemotherapy. More than 50% of new cancer cases require radiotherapy as their definitive or adjuvant therapy. Radiation safety must always be considered for patients, workers and the public. The role of imaging in radiation therapy is a determinant of the success of the therapy, and the targeting, particularly when there is motion (e.g. diaphragmatic or breast tumors), which affects the location of the tumor relative to healthy tissue, makes imaging a determinant to enhance the therapy and reduce the collateral damage.

A **medical linear accelerator (LINAC)** is the device most commonly used for external beam radiation treatments for patients with cancer. It delivers high-energy x-rays or electrons to the region of the patient's tumor. These treatments can be designed in such a way that they destroy the cancer cells while sparing the surrounding normal tissue. The LINAC is used to treat all body sites, using conventional techniques.

A **cyclotron** is a key piece of technology for proton therapy, which uses an aimed beam of protons directed at a tumor site to treat many types of cancer. It is one of the newest forms of radiation therapy. The cyclotron produces a proton beam that is configured to deliver the majority of its energy precisely at the tumor location. Healthy tissue in front of the tumor receives a minimal amount of energy, and tissue behind the tumor receives very little. This reduces the damage to healthy tissue that is common in the use of conventional X-ray radiation and is the cause of most side effects.

Brachytherapy is a type of internal radiation therapy in which seeds, ribbons, or capsules that contain a radiation source are placed in your body, in or near the tumor. Brachytherapy is a local treatment and treats only a specific part of your body. It is often used to treat cancers of the head and neck, breast, cervix, prostate, and eye.

LIST OF MEDICAL DEVICES (EQUIPMENTS & CONSUMABLES) USED IN CANCER THERAPY

Table 9-12: Priority Medical Devices required to perform the Following Health Interventions:

Cancer Type	Interventions
All Cancers	• Imaging and treatment planning • External beam radiotherapy • Brachytherapy

Cervical cancer & prostate cancer	• High dose rate brachytherapy

Source: Interviews with veterans from Philippines Medical Devices Industry, Industry Articles, Ken Research Analysis

Table 9-13: General Medical Devices (Medical Equipment & Medical Consumables) for External Radiotherapy & Brachytherapy

Procedure	Capital equipment (for specialized hospitals)	Accessories/hardware/software/ consumables/single use devices
Radiotherapy treatment delivery	Linear Accelerator (LINAC) (otherwise, Cobalt-60 Unit)	• 3D Conformal therapy • At least 6 MV with multileaf collimator and electronic portal imaging. • Thermoplastic masks • Dressings • Sheets of radio chromic film
	Single-patient physiologic monitoring system	• Blood pressure cuffs for adults and infants • Thermometer probes (in case it is needed)
	Resuscitation trolley, equipped with medicines and defbirillator	• Laryngoscope for adults and infants
Treatment delivery, brachytherapy	Anesthesia unit, mobile, basic	• Face mask for anesthesia administration Patient circuit
	Equipment for source applicator localization, Portable X-ray equipment (dedicated X-ray equipment e.g. C-arm fluoroscopy is preferred)	• N.A. • N.A.
	General-purpose suction system, vacuum	• N.A.
	Operating light, light source (lamp & flashlight)	• N.A.
	Single-patient physiologic monitoring system	• N.A.
	Infusion pump (optional)	• Infusion pump administration set
	Oxygen humidifier with flowmeter, with pipeline or oxygen cylinder connector	• N.A.
	Remote-after loading brachytherapy system, at least 12 channels	• Radioactive seeds • Transfer tubes • Device for fixation of a connector between the

	transportation applicator tubes to the patient • Flexi guides • Radio-opaque catheter • After loading catheter

Source: Industry Articles, Ken Research Analysis
Note: N.A. stands for Not Applicable

LIST OF TOP BRANDS IN CANCER THERAPY DEVICES MARKET

Major companies which are currently present and dominating the manufacturing of the cancer therapy equipment in Philippines includes Siemens and Elekta. The companies provide wide range of cancer/radiation therapy equipment (such as **HD digital accelerators**) in the country to treat cancer related health complications.

MARKET SHARE FOR MEDILINES IN CANCER THERAPY EQUIPMENT DISTRIBUTOR MARKET BY REVENUE, 2020

The distributor segment for Cancer therapy equipment is highly concentrated, with Medilines is the only leader in Cancer Therapy segment. During 2020, Medilines has been the largest distributor for cancer therapy equipment, holding a market share of ~90% in revenue terms out of the Distributor Segment in Philippines Cancer Therapy Segment market.

Table 9-14: Market Share for Medilines in Philippines Cancer Therapy Equipment Market on the Basis of Revenue in PHP Million and Percentage (%), 2020

Parameters	Market Share, 2020 (PHP Million & %)
Overall Cancer Therapy Equipment Market Revenues (PHP Million)	1,268.7
Share of Distributors in Overall Cancer Therapy Equipment	83.9%
Distributor Revenue-Cancer Therapy Equipment (PHP Million)	1,064.4
Medilines Revenue from Cancer Therapy Equipment (PHP Million)	962.4
Market Share for Medilines in Cancer Therapy Equipment-Distributor Segment	**90.4%**

Source: Interviews with veterans from Philippines Medical Devices Industry, Ken Research Analysis

Note: All the above revenues are inclusive of VAT. The above revenues and market share are only for Cancer Therapy Equipment and exclude Consumables
Overall Cancer Therapy Equipment market has been defined as the overall spending made by end users on Linear Accelerator, Cyclotron and Brachytherapy
Note: The above market share is only out of distributor segment for cancer therapy equipments

COMMENTARY ON DRIVERS/ TRENDS/ DEVELOPMENTS (CANCER THERAPY MEDICAL DEVICE)

Technological Advancement: The radiation therapy industry has witnessed significant growth in the last decade, which has led to low-cost and ease of use radiotherapy products. The advancement of 2D to 3D conformal radiotherapy with real-time imaging has enabled high conformity of radiation to the target (with minimal exposure to normal tissue) and dose escalation with improved tumor control. Such products pose a bright outlook for the development of the market.

Medical Tourism: Philippines has shown a promising future as a health tourism destination country. In fact, it ranked 24th based on the 2020 Medical Tourism Index (MTI) survey out of 46 countries, and it is one of the 25 Leading Growth Markets for Wellness Tourism Trips from 2015 to 2017 based on the Global Wellness Tourism Economy Report. The key features include the large pool of English-speaking professionals, its culture of hospitality, the quality of education and skills of health professionals, its young and hospitable workforce, its competitive price advantage for healthcare and other services, and its popularity as a tourist destination in general, among others. Cancer treatments at a lower cost would help the medical device manufacturers to witness a huge influx of foreign patients in the country.

Extending the Established product line: Companies such as Elekta has introduced new machinery called Elekta Harmony linear accelerator, a cancer treatment system with a shorter treatment slot of up to 25% and a 30%

smaller footprint. Another company called ALCEN Group has launched FLASHKNiFE, a FLASH radiotherapy system dedicated to clinical trials.

Increasing awareness and adoption of new technology: Different organizations and NGOs are organizing various events and awareness campaigns for increasing knowledge among general public regarding cancer. Professionals such as doctors, specialists, machine professionals are also organizing different conferences and symposia regarding the new technology such as use of particle therapy, advancements in radiotherapy and others. This will help in increasing the adoption of new technology and make treatment less expensive.

Rising Incidence of Cancer: As of 2019, cancer is the second leading cause of death after heart diseases in the Philippines, with most common cancer being breast, lung, colorectal, liver and prostate. About 65,000 people died due to cancer in the region in 2020. The expense on Cancer radiology Treatment was about PHP 1,335.4 Million in 2020.

10. Analyst Recommendations

Philippines are an attractive market for medical devices. Healthcare demand is increasing due to rising incomes, ageing populations, and growing incidences of chronic disease. However, many healthcare systems are underdeveloped and suffer from poor access, poor affordability, and poor quality. The penetration of medical devices is low, especially outside the main cities. Most of the medical devices are imported, and are not well suited for the needs of the people in Philippines.

Philippines medical device market provides extensive opportunities to the domestic players and as well as to the new entrants (domestic and foreign) to establish and strengthen their position in the market. Medical device companies can play an important role to improve the access, affordability, and quality of healthcare and at the same time increase penetration of their devices in this market of 600 million-plus people.

Table 10-1: Recommendations for Philippines Medical Device Market Including Rationale and Implementation

Recommendations	Rationale	Implementation
Customized Medical Devices	• Instead of using a "hand-me-down" approach to medical devices in Philippines, medical device companies should look to build customized and affordable devices for the market.	• The medical device companies should get closer to the customer to understand customer needs, have a local presence, and encourage local innovation to cater to the needs of the hospitals, clinics and diagnostic labs which are the major end users in the Philippines medical device market.
Digitalization	• Medical devices are also being disrupted by digital.	• Companies should embrace technology such as mobility, big data, and artificial intelligence in their current product portfolio and use this technology to provide healthcare in remote areas at lower costs.

		• To make the alternative care models and digital solutions successful, companies need to work to improve awareness of these solutions. • They should look to drive shifts in the mind-sets and behaviors that result in slow adoption of changes in technology and delivery models.
Availability Of Skills And Talent	• One of the hurdles that medical device companies face in implementation of strategies is the availability of skills and talent.	• Companies should play an active role in skill development. They should engage with the government and academia to develop relevant courses that will develop the skill base required for the industry. • They should look to develop training institutes in partnership with healthcare providers, government, and academia to provide training for operating and maintaining the medical devices. • They should also collaborate with healthcare providers to promote training and education of physicians and other technical personnel in the area of medical technology. • They should encourage the use of technology to accelerate and enhance medical education
Increase Role of Government	• The government in the country needs to support the industry and provide a favorable environment to companies playing a leading role in improving healthcare services in the region.	• Government should nurture a crop of innovators, including building incubators and improving funding access for medtech startups, especially in the early research phase. • Considering the long timeframe it takes to get returns from medtech innovations, governments should play a lead role in providing infrastructure, funding, and access to business networks. • Governments should look to improve the regulatory

		landscape and increase the healthcare expenditure in the country. • There is also a need for industry stakeholders and governments to encourage collaboration between regulators, academics, healthcare providers, industry executives, trade groups, patient groups, and insurance companies.
Marketing Activities	• Increased marketing activities can increase the sale of medical devices in the country.	• In order to create awareness about its new and existing products, the medical device company needs to reach out to the healthcare institutions. • Marketing activities include distribution of brochures, organizing medical conferences, symposiums where the company can enlighten other stakeholders in the healthcare industry about their products
Focus on After Sales Service	• The private hospitals, clinical laboratories and clinics procure medical devices by establishing long term contracts with the supplier.	• This involves building long term relationships with the client to build trust and loyal customer base. • After sales services include educating the client about the use and side effects of the device, and offering warranty or guarantee for certain time period in case of operational glitches.
In-house production versus Imports for Medical Devices	• The Philippines market is dominated by imports of medical devices which make in-house production a key advantage for any local or international player.	• Most of the companies in Philippines produce medical consumables within the country and other High Cost Capital Equipment like MRI, CT Scan, ECG and others from countries like USA, Germany, Japan, and Singapore. • Companies can focus on in-house production of high cost capital equipment in the country as this will save a major part of importing cost which in turn will lead to increase in sales and overall revenue of the medical device market in the country.

Focus on Emerging Segments	• The Philippines medical device companies should shift their focus on the emerging segments which will drive the growth of medical devices in the near future.	• Focus on segments like home healthcare services, telemedicine (e-health) and others will give a competitive advantage to players over others. • Companies can also diversify their product portfolio based on the future demand for medical equipment and cater to end user segments like large hospitals and clinics.

Source: Ken Research Analysis

11. Appendix- List of Recent Tenders for Medical Devices in Philippines

Table 11-1: Recent Public Tenders for Medical Equipment and Devices in Philippines Medical Device Market, August 2021

Ref No	Posting Date	Deadline	Value	Short Description
5583617 210804	04-Aug-21	25-Aug-21	PHP 4,987,350	Supply & Delivery Of Molecular Laboratory Supplies
5581717 210804	04-Aug-21	11-Aug-21	PHP 306,250	Supply And Delivery Of Laboratory Supplies
5578017 210804	04-Aug-21	23-Aug-21	PHP 3,000,000	Supply And Delivery Of Laboratory Equipment/
5576417 210804	04-Aug-21	02-Sep-21	PHP 8,110,000	Procurement Of Various Medical Equipment
5575917 210804	04-Aug-21	12-Aug-21	PHP 85,000	Environmental Health/Safety Equipment
5574217 210804	04-Aug-21	26-Aug-21	PHP 1,849,000	Procurement Of Tb Laboratory Supplies
5572817 210804	04-Aug-21	24-Aug-21	PHP 7,584,840	Supply/Delivery Of Various Laboratory Equipment
5571917 210804	04-Aug-21	09-Aug-21	PHP 933,000	Laboratory Supplies And Equipment
5569417 210804	04-Aug-21	09-Aug-21	PHP 222,000	Laboratory Supplies And Equipment
5569017 210804	04-Aug-21	09-Aug-21	PHP 900,000	Supply And Delivery Of Medical Equipment
5568917 210804	04-Aug-21	09-Aug-21	PHP 222,250	Supply And Delivery Of Various Chemicals And Laboratory Supplies
5568617 210804	04-Aug-21	09-Aug-21	PHP 80,500	Supply And Delivery Of Various Laboratory Supplies
5567217 210804	04-Aug-21	09-Aug-21	PHP 66,900	Laboratory Supplies And Equipment
5566417 210804	04-Aug-21	09-Aug-21	PHP 460,000	Laboratory Supplies And Equipment
5563817 210804	04-Aug-21	10-Aug-21	PHP 1,081,500	Supply And Delivery Of Covid-19 Antigen Test
5559917 210804	04-Aug-21	09-Aug-21	PHP 200,000	Supply And Delivery Of Personal Protective Equipment (Pep)
5558717 210804	04-Aug-21	09-Aug-21	PHP 150,000	Supply And Delivery Of Swab Test Kits
5557417 210804	04-Aug-21	11-Aug-21	PHP 826,800	Procurement Of Environmental & Safety Equipment (Filter System)

5557317 210804	04-Aug-21	10-Aug-21	PHP 82,000	Laboratory Supplies And Equipment
5555017 210804	04-Aug-21	09-Aug-21	PHP 103,750	Veterinary Products And Supplies
5553717 210804	04-Aug-21	09-Aug-21	PHP 269,400	Supply And Delivery Of Water Quality Testing Kits
5553617 210804	04-Aug-21	09-Aug-21	PHP 87,600	Supply And Delivery Of Laboratory & Other Supplies
5551717 210804	04-Aug-21	12-Aug-21	PHP 2,400	Engineering And Laboratory Testing Equipment
5550217 210804	04-Aug-21	09-Aug-21	PHP 478,560	Procurement Of Pregnancy Test And Other Laboratory Supplies
5548417 210804	04-Aug-21	09-Aug-21	PHP 105,400	Supply And Delivery Of Reagents
5548117 210804	04-Aug-21	09-Aug-21	PHP 256,160	Purchase Of Various Laboratory Reagents For Provincial Hospital
5546717 210804	04-Aug-21	24-Aug-21	PHP 11,000,000	Hospital / Medical Equipment
5546417 210804	04-Aug-21	10-Aug-21	PHP 367,500	Supply Of 12,250 Pairs Sterilized Disposable Petri Dishes 100 X 15mm
5545617 210804	04-Aug-21	05-Aug-21	PHP 99,925	Supply And Delivery Of Agricultural Supplies (Animal Feeds)
5545417 210804	04-Aug-21	09-Aug-21	PHP 100,000	Veterinary Products And Supplies
5544717 210804	04-Aug-21	09-Aug-21	PHP 50,000	Supply And Delivery Of Alcohol 3.7 Liters
5544417 210804	04-Aug-21	09-Aug-21	PHP 216,000	Purchase Of Laboratory Supplies And Equipment (Polillo)
5544117 210804	04-Aug-21	24-Aug-21	PHP 150,000	Veterinary Products And Supplies
5543017 210804	04-Aug-21	09-Aug-21	PHP 84,000	Purchase Of Laboratory Supplies And Equipment (Polillo)
5541617 210804	04-Aug-21	09-Aug-21	PHP 795,000	Hospital / Medical Equipment
5541317 210804	04-Aug-21	11-Aug-21	PHP 472,831	Purchase Of Animal Feeds
5540417 210804	04-Aug-21	11-Aug-21	PHP 94,692	Purchase Of Washable Pants And Polo Shirts, Disinfectant Solution And Rope
5536617 210804	04-Aug-21	11-Aug-21	PHP 206,820	Drugs And Medicines
5536317 210804	04-Aug-21	11-Aug-21	PHP 99,800	Procurement Of Veterinary Products And Supplies
5533517 210804	04-Aug-21	10-Aug-21	PHP 172,500	Supply And Delivery Of Vitamin C
5533417 210804	04-Aug-21	24-Aug-21	PHP 5,552,000	Procurement Of Various Drugs And Medicines

5533317 210804	04-Aug-21	09-Aug-21	PHP 368,025	Supply And Delivery Of Drugs And Medicines For Omph Use
5533217 210804	04-Aug-21	23-Aug-21	PHP 1,856,510	Procurement Of Drugs And Medicines
5533117 210804	04-Aug-21	09-Aug-21	PHP 987,750	Procurement Of Tocilizumab, 80mg-4ml Vial
5533017 210804	04-Aug-21	25-Aug-21	PHP 5,998,450	Procurement Of Drugs And Medicines
5532917 210804	04-Aug-21	09-Aug-21	PHP 127,710	Supply And Delivery Of Drugs And Medicines
5532817 210804	04-Aug-21	11-Aug-21	PHP 226,220	Procurement Of Various Drugs & Medicines
5532717 210804	04-Aug-21	09-Aug-21	PHP 85,016	Supply & Delivery Of Medicines
5532617 210804	04-Aug-21	11-Aug-21	PHP 350,525	Procurement Of Fluids And Medicines
5532517 210804	04-Aug-21	09-Aug-21	PHP 63,350	Procurement Of Medical Supplies
5532417 210804	04-Aug-21	23-Aug-21	PHP 1,464,643	Purchase Of Medical, Laboratory & Rehabilitation Supplies
5532317 210804	04-Aug-21	24-Aug-21	PHP 1,749,885	Procurement Of Drugs And Medicines
5532217 210804	04-Aug-21	06-Aug-21	PHP 198,314	Procurement Of Drugs And Medicine
5532117 210804	04-Aug-21	09-Aug-21	PHP 100,000	Supply And Delivery Of Drugs And Medicines
5532017 210804	04-Aug-21	09-Aug-21	PHP 97,130	Purchase And Delivery Of Medicine Supplies
5531917 210804	04-Aug-21	09-Aug-21	PHP 189,920	Supply/Delivery Of Medicines For Use In The Covid-19 Vaccination
5531817 210804	04-Aug-21	23-Aug-21	PHP 2,799,900	Drugs And Medicines
5531717 210804	04-Aug-21	09-Aug-21	PHP 79,952	Purchase Of Drugs And Medicines
5531617 210804	04-Aug-21	25-Aug-21	PHP 2,633,069	Supply & Delivery Of Medicines
5531517 210804	04-Aug-21	26-Aug-21	PHP 5,999,950	Supply And Delivery Of Medicine
5531417 210804	04-Aug-21	13-Aug-21	PHP 777,984	Procurement Of Medicines
5531317 210804	04-Aug-21	10-Aug-21	PHP 522,602	Procurement Of Medicines For Maternal Child Health & Nutrition Program
5531217 210804	04-Aug-21	09-Aug-21	PHP 13,122	Procurement Of Vitamin-C
5531117 210804	04-Aug-21	26-Aug-21	PHP 2,020,838	Procurement Of Drugs And Medicines,

5523617 210804	04-Aug-21	23-Aug-21	PHP 800,006	Procurement Of Drugs And Medicines
5523517 210804	04-Aug-21	11-Aug-21	PHP 275,000	Procurement Of Drugs And Medicines
5523417 210804	04-Aug-21	11-Aug-21	PHP 249,924	Procurement Of Drugs And Medicines
5523317 210804	04-Aug-21	23-Aug-21	PHP 112,952	Procurement Of Medicines
5523217 210804	04-Aug-21	09-Aug-21	PHP 144,212	Supply And Delivery Of Potassium Chloride 750 Mg
5523117 210804	04-Aug-21	09-Aug-21	PHP 675,000	Supply And Delivery Of Drugs And Medicines
5523017 210804	04-Aug-21	06-Aug-21	PHP 989,300	Purchase Of Drugs And Medicines Of Dialysis
5522917 210804	04-Aug-21	26-Aug-21	PHP 483,685	Supply And Delivery Of Medicines And Medical Supplies
5522817 210804	04-Aug-21	06-Aug-21	PHP 142,922	Purchase Of 3rd Quarter Diabetic And Hypertensive Medicines
5515617 210804	04-Aug-21	11-Aug-21	PHP 998,028	Supply And Delivery Of Medical Supplies For Provincial Health Office
5515517 210804	04-Aug-21	11-Aug-21	PHP 183,740	Supply & Delivery Of Medical Supplies
5515417 210804	04-Aug-21	09-Aug-21	PHP 350,000	Supply And Delivery Of Newborn Sgreening Collection Kit
5515317 210804	04-Aug-21	11-Aug-21	PHP 261,000	Supply & Delivery Of Laboratory Supplies
5515217 210804	04-Aug-21	11-Aug-21	PHP 772,000	Supply & Delivery Of Medical Supplies For Covid Isolation Patients Of Provincial Hospital, Amas, City
5515117 210804	04-Aug-21	11-Aug-21	PHP 330,000	Supply & Delivery Of Medical Supplies For Provision Of Medical Supplies During Vaccination
5515017 210804	04-Aug-21	10-Aug-21	PHP 395,790	Procurement Of Medical Supplies, Medical Equipment, And Ppes
5514917 210804	04-Aug-21	11-Aug-21	PHP 314,630	Supply & Delivery Of Medical Supplies
5514817 210804	04-Aug-21	09-Aug-21	PHP 525,350	Medical Supplies And Laboratory Instrument
5514717 210804	04-Aug-21	11-Aug-21	PHP 450,000	Supply And Delivery Of Medical Supplies
5514617 210804	04-Aug-21	11-Aug-21	PHP 82,589	Supply And Delivery Of Medical Supplies

5514517 210804	04-Aug-21	12-Aug-21	PHP 203,500	Medical Supplies And Laboratory Instrument
5514417 210804	04-Aug-21	11-Aug-21	PHP 755,710	Procurement Of Medicines
5514317 210804	04-Aug-21	10-Aug-21	PHP 166,470	Supply And Delivery Of Medical Supplies
5514217 210804	04-Aug-21	10-Aug-21	PHP 268,575	Procurement Of Medical & Laboratory Supplies
5514117 210804	04-Aug-21	10-Aug-21	PHP 64,600	Purchase Of Medical Supplies & Medicines For Distribution To Pwds
5514017 210804	04-Aug-21	09-Aug-21	PHP 180,000	Procurement And Delivery Of Testing Iodine Salt Kits
5513917 210804	04-Aug-21	09-Aug-21	PHP 65,000	Procurement Of Medical Supplies
5513817 210804	04-Aug-21	12-Aug-21	PHP 399,583	Medical Supplies And Laboratory Instrument
5513717 210804	04-Aug-21	26-Aug-21	PHP 530,500	Medical Supplies And Laboratory Instrument
5513617 210804	04-Aug-21	06-Aug-21	PHP 55,450	Procurement Of Medical Supplies
5513517 210804	04-Aug-21	09-Aug-21	PHP 198,000	Supply And Delivery Of Medical Supplies For Covid 19 Vaccination
5513417 210804	04-Aug-21	09-Aug-21	PHP 57,900	Supply And Delivery Of Thermal Scanner And Washable Facemasks
5513317 210804	04-Aug-21	09-Aug-21	PHP 799,526	Purchase Of Medical Supplies
5513217 210804	04-Aug-21	09-Aug-21	PHP 258,000	Medical Supplies And Laboratory Instrument
5513117 210804	04-Aug-21	09-Aug-21	PHP 158,530	Supply And Delivery Of Medical Supplies For Hospital And Patient Use
5513017 210804	04-Aug-21	10-Aug-21	PHP 281,769	Procurement Of Medical Supplies To Prevent And Address Covid-19

Source: Medical Pharma healthcare Tenders, Ken Research Analysis

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