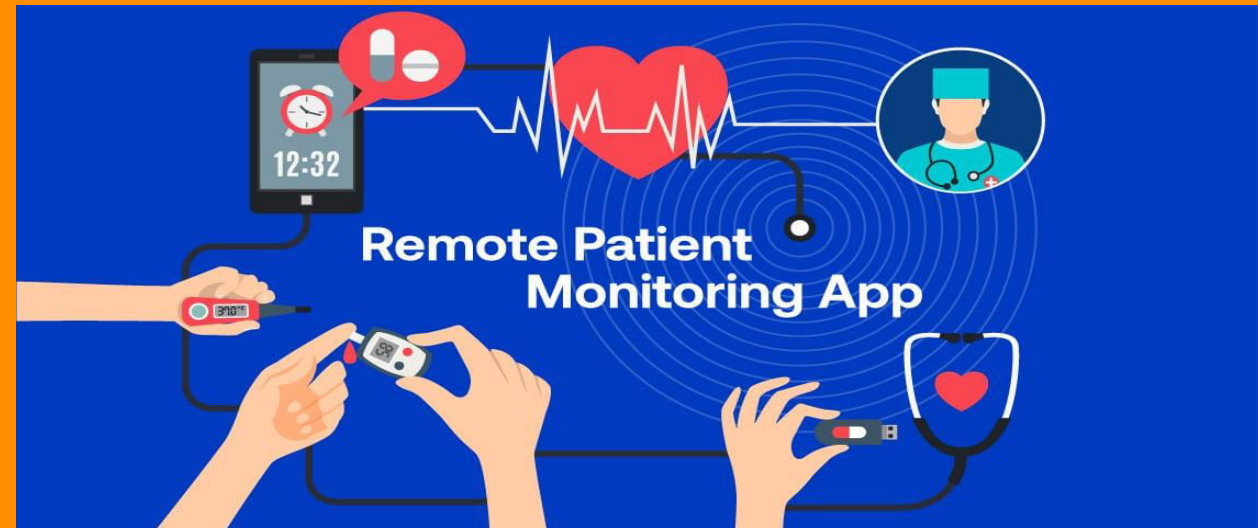


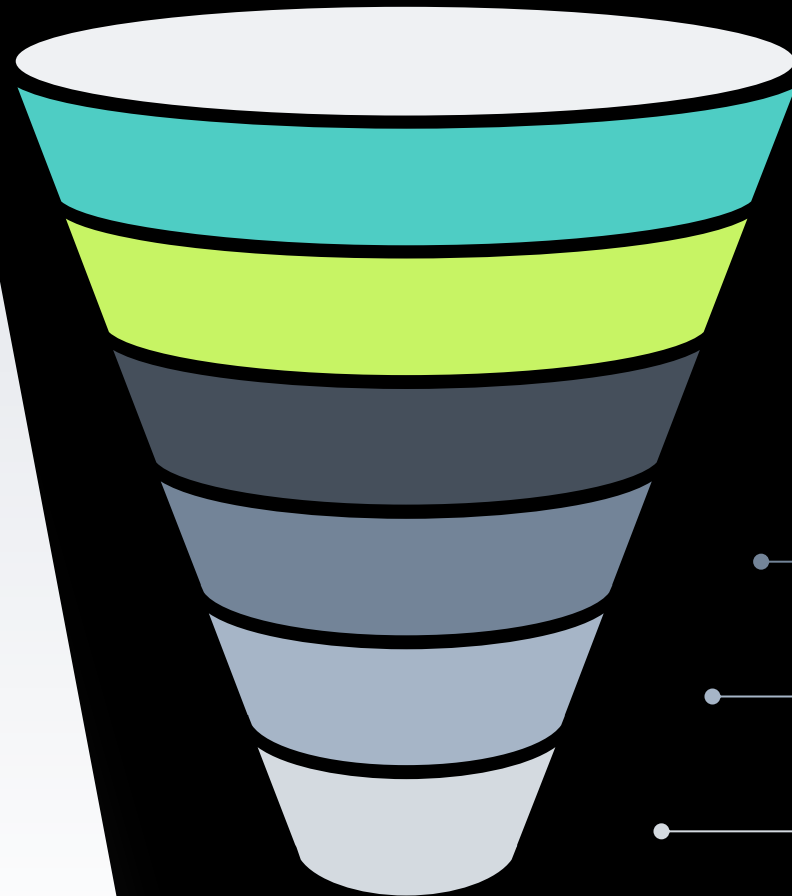
COMPETITIVE LANDSCAPE AND MARKET ANALYSIS OF REMOTE PATIENT MONITORING IN US



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PRESENTATION OUTLINE



Terms to Know

Introduction

Research Question

Objective

**Materials &
Methodology
Analysis, Discussion
And Conclusion**

TERMS TO KNOW – WHAT IS ?

(Key Variables Of The Study)

REMOTE PATIENT MONITORING

Remote patient monitoring, or RPM, is a part of the telehealth market. RPM is the use of digital technologies to monitor and capture medical and other health data from patients and transmit to healthcare providers for assessment

TELEHEALTH VS REMOTE PATIENT MONITORING

RPM refers to the use of a specific technology to facilitate interaction between clinicians and patients at home, telehealth is a broader term that refers to the entire industry, methodology and technologies that enable that type of healthcare

RPM DEVICES AND SOFTWARES

RPM devices allow providers to monitor, report and analyse their patient's acute or chronic conditions from outside the hospital or clinic setting



CATEGORISATION OF RPM

REMOTE PATIENT MONITORING TYPES



Software and services
SaaS
Annual Subscription model

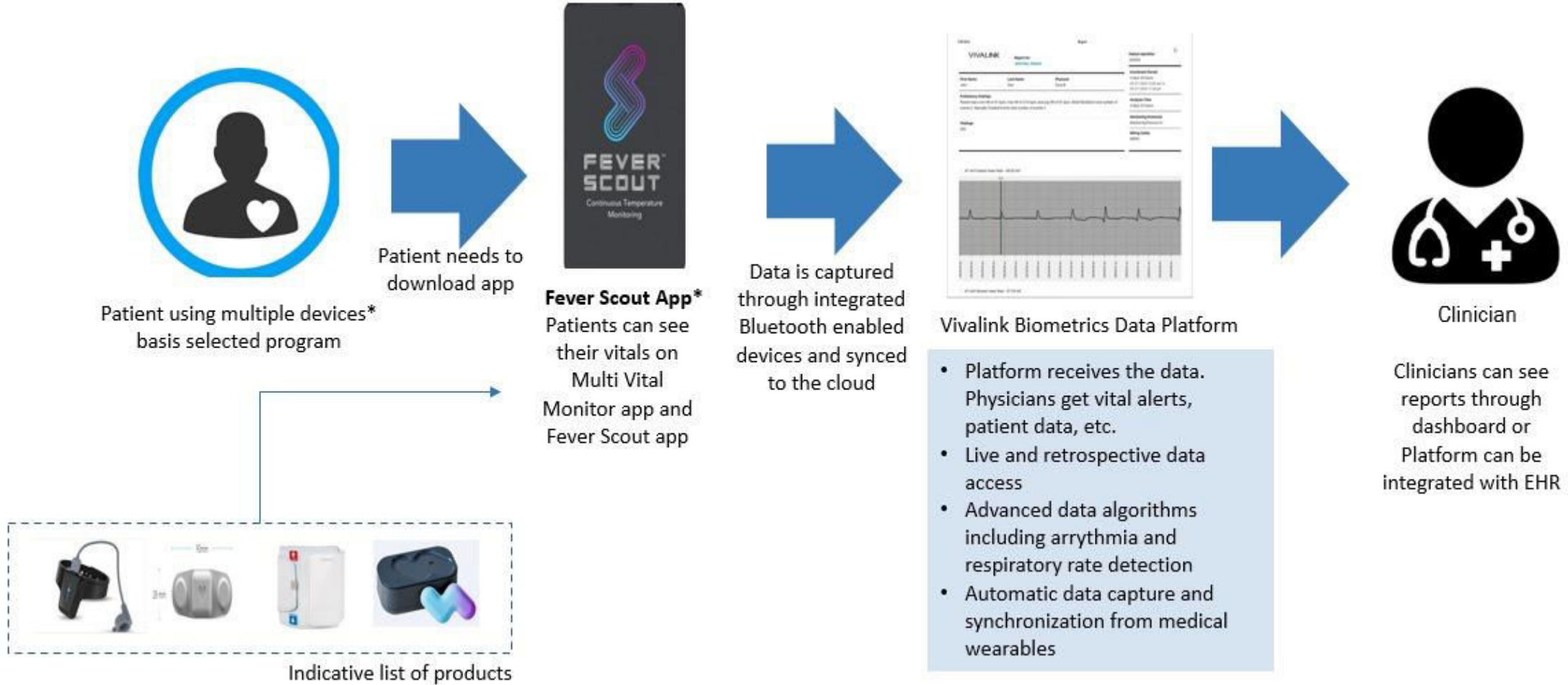


Devices
Multiparameter monitoring devices
Respiratory monitoring devices
Cardiac Monitoring devices
Blood Glucose monitoring devices
Weight Monitoring devices
Fetal and neonatal devices
Neurological monitoring devices
Other Monitoring devices



End Users
Hospitals and Clinics
Home care settings and long-term care centers
Ambulatory care centers
Insurance providers
Patients

REMOTE PATIENT MONITORING WORKFLOW AND KEY FEATURES



INTRODUCTION

- RPM enables care professionals to track patient activities and vital signs from a distance or even at different time points. Connected electronic devices record patient vitals and transmit them to the caregiver. Patients are connected to an external monitoring centre through a central system that feeds information from sensors and monitoring equipment.[1]
- The market for remote RPM is anticipated to grow at a CAGR of 38.2 percent from USD 23,201.4 million in 2020 to USD 117,103.5 8 million by 2025. The main factors propelling the growth of this market are the increasing geriatric population and the increasing need to increase healthcare access.
- The market for RPM is divided into software & services and devices depending on the product. 71.7 % of the market for remote patient monitoring worldwide was accounted for by the software and services sector in 2019.

AGREEMENTS PARTNERSHIPS AND COLLABORATIONS

AGREEMENTS AND COLLABORATIONS

Month & Year	Approach	Company 1	Company 2	Description
2022	Collaboration	Philips	American telemedicine Association(A TA) US	The collaboration helped increase the adoption of telehealth across acute, post acute and home care settings
2019	Collaboration	Medtronic	Novo Nordisk	The collaboration helped provide integrated solutions and combined clinical data for diabetes patients.
2019	Joint Venture	Omron Healthcare	iAPPS Pvt Ltd(Singapore)	Both companies announced the establishment of Heart Voice, a joint venture that provides health management services to business
2019	Agreement	Medtronic	Capital Districts Physicians associations	This agreement allows CDPHP members to access a patient engagement program known as Medtronic Inner circleSM

PRODUCT LAUNCHES AND EXPANSIONS

PRODUCT LAUNCHES

Month & Year	Company	Segment	Description
2020	Philips	Devices/hardware	Launched the Avalon CL fetal and maternal Pod and patch for RPM in Europe
2020	Medtronic	Digital health solutions	US FDA approval for the Minimed 770G Insulin pump system
2020	Biotelemetry	Heart Monitoring	The company expanded its mobile cardiac outpatient telemetry(MCOT) service to monitor life-threatening

EXPANSIONS

Month & Year	Company	Country	Description
2019	Siemens Healthineers	Forchheim (Germany)	The company invested USD 395 million to expand the Forchheim location with a medical components factory and a new R&D logistics center

RATIONALE



- RPM will be the future of telehealth in US and India in the coming few years.
- The rationale of choosing this project stem from the increased use of RPM devices and platform in the US which can be mainly attributed to the rising geriatric population and the growing need to expand healthcare access, cost benefits of telehealth and remote patient monitoring, benefits of RPM to reduce the burden on medical resources, advancements in telecommunications, growing incidences of chronic diseases, and increasing investments in telehealth and RPM are the major factors driving the growth of this market.



RESEARCH QUESTION

What is the market of key players in remote patient monitoring services in US?

OBJECTIVES

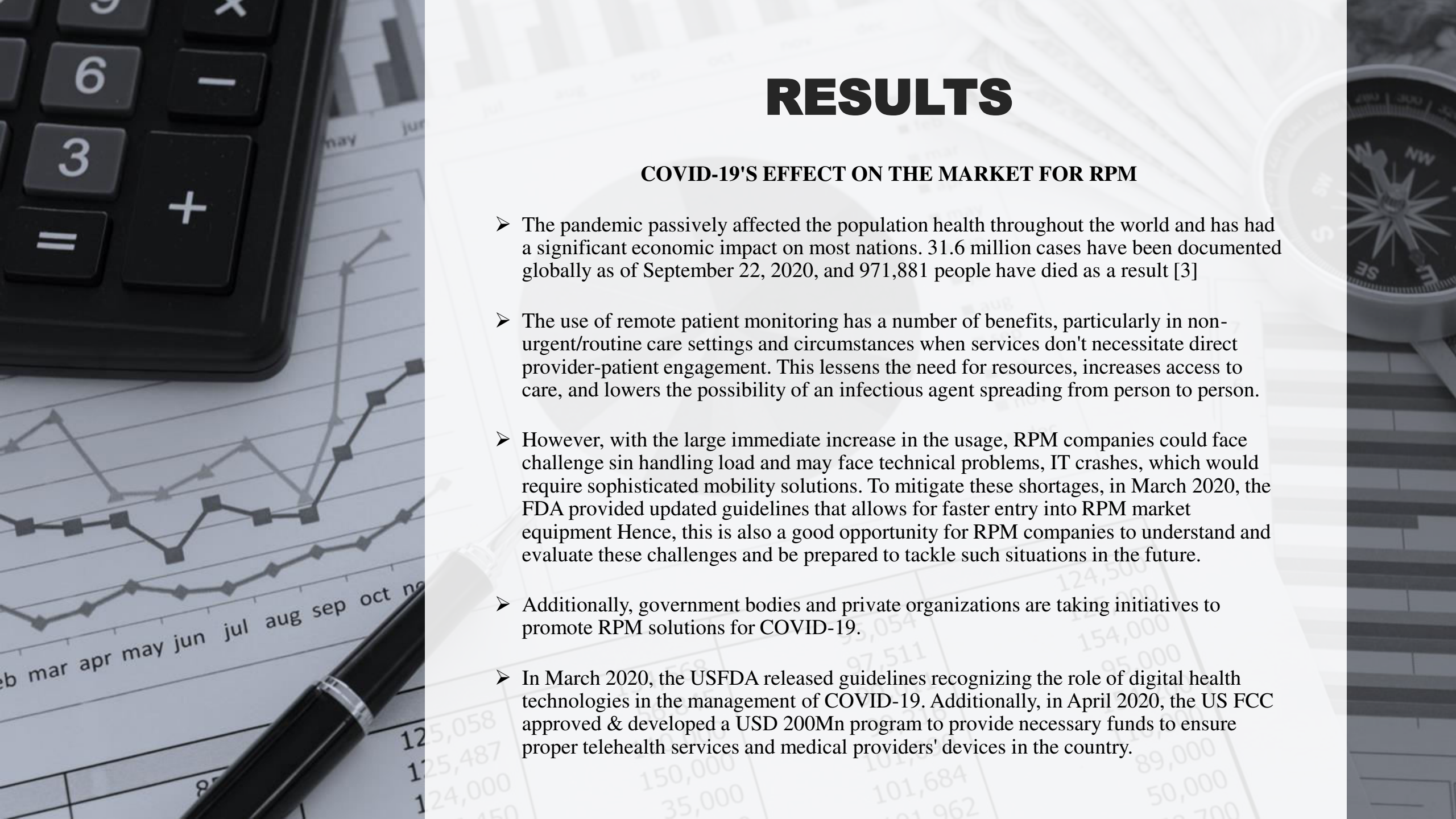
- To understand the competitive landscape associated with the remote patient monitoring service market
- To identify the drivers and challenges of the market





Materials & Methodology

- **Study Type:** Descriptive study (Secondary data analysis)
- **Research Data:**
 - Secondary data: Available research data through research articles and available resources on data-based platform.
- **Research Duration :** 24th March 2022 to 15th June 2022
- **Inclusion criteria :** Inclusion – all the start-ups and established players in the US
- **Exclusion criteria:** Companies outside of US, emerging companies incorporated after April 2022 and secondary data before Jan 2015 is excluded.



RESULTS

COVID-19'S EFFECT ON THE MARKET FOR RPM

- The pandemic passively affected the population health throughout the world and has had a significant economic impact on most nations. 31.6 million cases have been documented globally as of September 22, 2020, and 971,881 people have died as a result [3]
- The use of remote patient monitoring has a number of benefits, particularly in non-urgent/routine care settings and circumstances when services don't necessitate direct provider-patient engagement. This lessens the need for resources, increases access to care, and lowers the possibility of an infectious agent spreading from person to person.
- However, with the large immediate increase in the usage, RPM companies could face challenge in handling load and may face technical problems, IT crashes, which would require sophisticated mobility solutions. To mitigate these shortages, in March 2020, the FDA provided updated guidelines that allows for faster entry into RPM market equipment Hence, this is also a good opportunity for RPM companies to understand and evaluate these challenges and be prepared to tackle such situations in the future.
- Additionally, government bodies and private organizations are taking initiatives to promote RPM solutions for COVID-19.
- In March 2020, the USFDA released guidelines recognizing the role of digital health technologies in the management of COVID-19. Additionally, in April 2020, the US FCC approved & developed a USD 200Mn program to provide necessary funds to ensure proper telehealth services and medical providers' devices in the country.

COMPETITIVE LANDSCAPE OF ESTABLISHED PLAYERS

Company	HQ	Presence		Company's Outlook
		RPM Platform	RPM Device	
Johnson & Johnson	US			- Company has global presence in various domains through medical devices, pharmaceuticals and consumer products. - Company operates in RPM space through it's subsidiary DePuy Synthesis(VELYS insights platform) - Company is actively investing in digital health domain (e.g., invested in thirty madisson, Carrot Inc; partnered with Huma through Janssen for early identification and surveillance of Alzheimer's disease
Philips & BioTel	US			- Leading player in cardiac monitoring space - Wide range of product portfolio such as MCOT monitors, wearable patches, glucose monitoring devices and weight scales. - Exclusive partnership in diverse fields including digital health, research organization, clinical trials institutes
Roche (Focus on diabetes care)	Switzerland			- Roche operates business segments namely pharmaceuticals, diagnostics and diabetes care. The company has established market presence with more than 3000+ patents and 50+ channel/distribution partner. - It provides devices and solutions for remote diabetes care management (Roche Diabetes care) - Company has strong media presence with strong network of distributors and partners worldwide
Resideo	US			- Provides multi disease monitoring platform and is device agnostic - Strong global presence backed by several years of experience(19+) and recent acquisition by Clear Arch health would help Resideo in product expansion and market penetration. - Platform supports devices of different brands that monitor vitals such as blood pressure, SpO2 and body weight

Presence

Absence

COMPETITIVE LANDSCAPE OF EMERGING PLAYERS

Company	HQ	Presence		Company's Outlook
		RPM Platform	RPM Device	
Keva Health	US			- Company provides solutions that caters to respiratory conditions only - Interactive platform that can pair with any spirometer - Integration of AI for predictive analytics in the platform(to be launched) - Company operates exclusively in US and focusses on niche market segment (diseases such as Asthma and COPD).
`Vivalink	US			- Company operates in over 30 countries globally. - Filed multiple patents with a wide range of product portfolios. Products are FDA cleared. - Company has adopted reseller model to expand in different countries (US, Europe) - Data integration with CTMS and HER through their platform. - Heart rate can be monitored by ECG patch. Platform also supports devices for BP monitoring.
Datos	YS			- Strong engagement during COVID-19 with patient monitoring tool and vaccine tracker app designed specifically for organizations (healthcare facilities/offices). - Platform provides catering to large patient populations(Cardiology, oncology, pulmonary) with integration with HER - Platform supports heart rate and BP monitoring devices.
HealthSnap	US			- Provides chronic disease management platform (lifestyle disease including obesity) with data integration into EHR. - Platform supports cellular enabled BP monitoring devices and monitors heart rate, - Limited end-user engagement due to direct mode of distribution in US(No distributors as of now)

Presence

Absence

COMPETITIVE LANDSCAPE OF EMERGING PLAYERS

Company	HQ	Presence		Company's Outlook
		RPM Platform	RPM Device	
MedM	US			- Platform supports 600+ RPM devices; strong presence outside US market including Germany, UK, Finland and other European countries. - Platform is available in 15 languages with customizable SDK tools which can be modified as per the choice of medical devices companies.
`Vitals	US			- Offers solution for Pediatric care as well as adult/elderly care - Offers solutions which can operate in Emergency room - Operates directly in the market, limiting its engagement with end-users Involved in data monetisations
InfoBionic	YS			- Unique Flagship product (Mome Kardia) which is a non-invasive 3-in-1 cardiac (heart rate) monitoring device which streamlines information with MomeKardia Platform - Strong network of hospital collaboration with top hospitals in US including Mayo clinic - Mome Kardia supports measurement of heart rate.
CloudDX	Canada			- Leading RPM solutions provider in Canada with contractual agreements with the Canadian Government along with other clinics and hospitals. - Strong R&D team involved in technological innovation. Company is currently exploring medical metaverse segment (allows 3D holographic representation of a patient's body) through their VITALITI continuous vital sign monitor and connected Health platform. - Platform supports cuffless blood pressure measuring features and monitors heart rate too. - It recently developed it s AI nased platform for diagnosis of Parkinson's disease (along with Tencent) and deployment of total knee replacement surgery solutions(along with Smith+Nephew UK)

Presence

Absence

KEY TAKEAWAYS (ANALYSIS) FROM THE COMPANIES

Companies like Keva Health cater to a niche market segment (respiratory domain only). Companies working in multi-disease segment have more market growth opportunities.

Vivalink has enhanced product innovation supported by strong R&D team leading to technological advancements (recent addition of AI and algorithm features for predictive analysis of disease outcome).

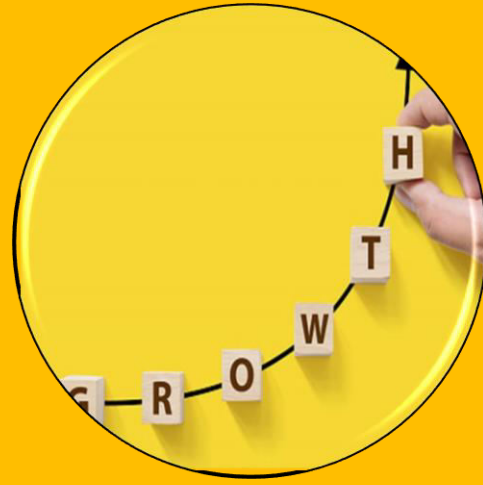
Established players like Resideo have EHR integration which other emerging players currently don't have. Physicians and medical professionals prefer software which have both EHR and EMR integration

DRIVERS RESTRAINTS OPPORTUNITIES CHALLENGES

[DROC_s]



DRIVERS AND RESTRAINTS



DRIVERS

- 1. Increase in the geriatric population and expanding access to healthcare facilities
- 2. Cost effectiveness
- 3. RPM has shown proven results where it reduced the burden on medical workforce
- 4. Advancements in telecommunications
- 5. Increasing investments in telehealth & RPM



RESTRAINTS

- 1. Regulatory variations across regions
- 2. Healthcare fraud
- 3. Informal usage of social media practices



- **1.Importance of Artificial Intelligence (AI) and how it will revolutionise the RPM Market**
- **2. RPM is extremely useful in battling infectious diseases and epidemics.**



- **1. The lack of understanding, behavioural impediments, and the cost of healthcare**
- **2. Data accessibility issues**

CONCLUSION

- Based on the analysis overall, the objectives have been summarized as below
- From the key competitive players, companies have multi-disease platform have more growth opportunities.
- The main factors propelling the growth of this market are the increasing geriatric population and the increasing need to increase healthcare access.
- However, throughout the anticipated time, market expansion is anticipated to be impeded by regional regulatory variances, healthcare fraud, and informal social media usage practices.
- After sales service is one of key factor while selecting an RPM service providers.

RECOMMENDATIONS

- ⊙ Companies looking for partnership (established and emerging players) should target companies:
 - Offering multi-disease platform which is device agnostic
 - Working on or providing predictive analytics in their solutions
 - Provide efficient integration with EHR (for all the solutions results from multiple solutions at one place)

- ⊙ Main features to be added to upscale around unmet needs are
 - Patient engagement: Patient engagement is missing and important to increase patient adherence for the treatment
 - EHR integration: Currently the integration of RPM portal/dashboards is not efficient with HER and hence needs to visit individual dashboard to see the records

RECOMMENDATIONS

- ⊙ Main features to be added to upscale around unmet needs are
 - Predictive analytics: Doctors using the RPM platforms require now predictive analytics for early disease diagnosis and personalized treatment
- ⊙ Companies can target to focus on clinical evidence to support their RPM in reducing hospital admission/ readmissions.
- ⊙ Companies can collaborate with various medical devices to **bundle their solutions** with other medical devices. For example, Huma partnered with Smith+Nephew to market its product for monitoring patients post orthopaedic surgery.
- ⊙ **Aftersales service** is a challenge that companies can work upon to increase their revenue

REFERENCES

1. Ivanov, A, Hrisafov, K., Chivarov, N., Chivarav S., & Budinska, I. (2021) Tele-Medical System For Remote Monitoring Of Patients With Covid 19 And Other Infectious Diseases. IFAC-Papersonline, 54(13), 327-332. doi: 10.1016/j.ifacol.2021.10468
2. Sharma, N., Mangla, M., Mohanty, S., Gupta, D., Tiwari, P., Shorfuzzaman, M., & Rawashdeh, M. (2021). A smart ontology-based IoT framework for remote patient monitoring. Biomedical Signal Processing and Control, 68, 102717. doi: 10.1016/j.bspc.2021.102717
3. Kim, Y., Lim, I., Lee, J., & Lee, J. (2012). Sensor Based Real-Time Remote Patient Monitoring System: A Study on Mobile DB Construction of Minimum Network Traffic in Use of HTML5 WebSQL Procedia Engineering, 29, 2382-2387. doi: 10.1016/j.proeng. 2012.01.319
4. Ahaber (2020). Kütahya'da korkunç olay! Koronavirüs (Covid-19) korkusu sebebiyle intihar etti. Retrieved 12 April 2020 from: <https://www.ahaber.com.tr/yasam/2020/03/31/kutahyada-korkunc-olay-koronavirus-covid-19-korkusu-sebebiyle-intihar-etti>.
5. Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The emergence of RPM in COVID-19 : Development and Initial Validation. *International journal of medical technology*, 1–9. Advance online publication. <https://doi.org/10.1007/s11469-020-00270-8>



THANK YOU