Lessons in Digital Mastery to Gain Clinical Efficiency and Expand Care at Home

Presented by:

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Session Agenda

1 Welcome & Speaker Intros

2 Identifying Key Conditions and Staffing Needs for Effective Home Care

3 Elevating Care with Digital and AI Innovations

4 Strategies for Implementing Digital Enhancements
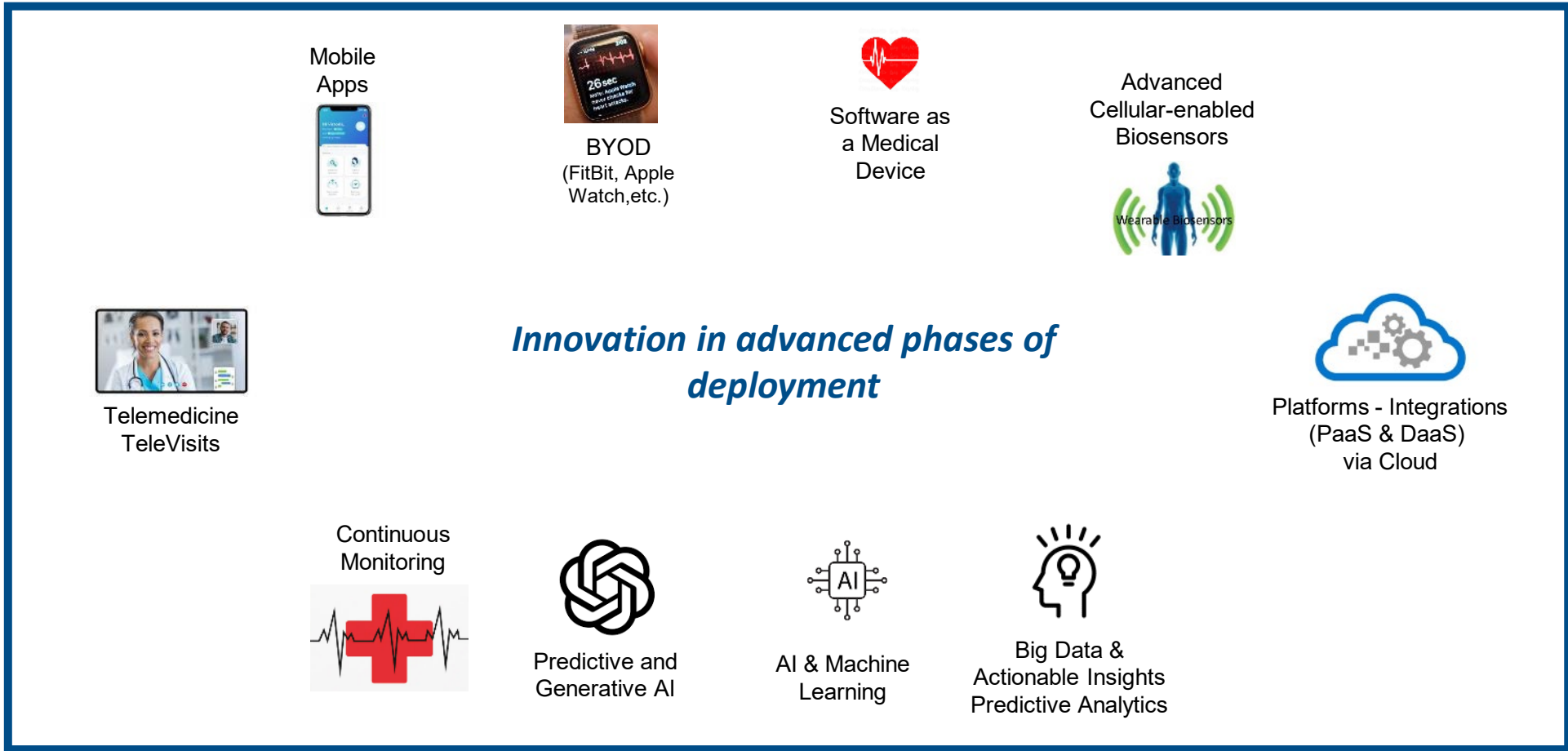
5 Scaling Up Post-Digital Transformation

6 Open Q&A

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Technology Trends in Connected Care @ Home
Head of Product HRS

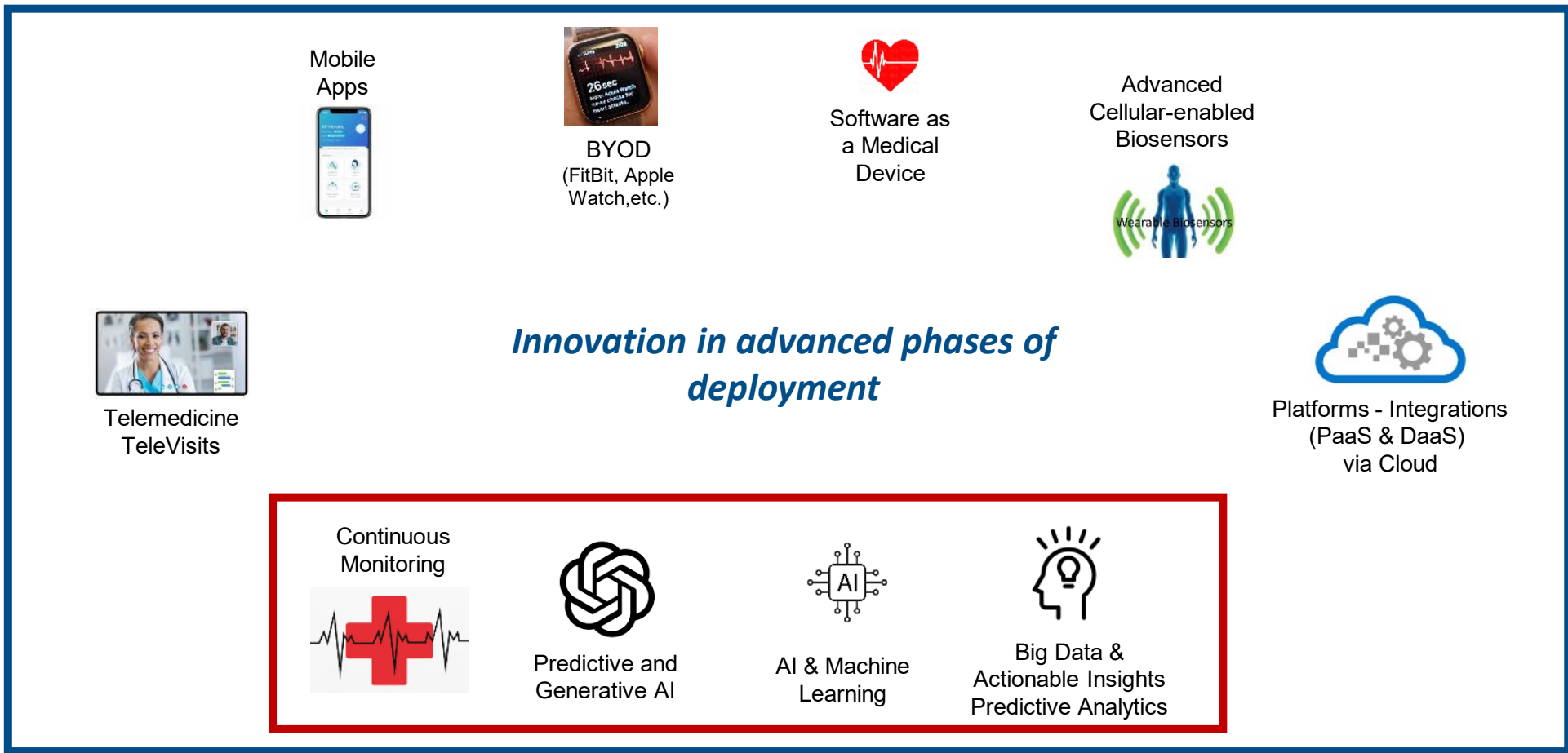VISION *to* VIRTUAL
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Technology Trends in Connected Care @ Home

Technology Trends which are Driving Digital Transformation, Digital Health, Insights, Clinical Decisioning and Healthy Outcomes

Mobile Apps

BYOD
(FitBit, Apple Watch,etc.)

Software as a Medical Device

Advanced Cellular-enabled Biosensors

Wearable Biosensors

Telemedicine TeleVisits

Innovation in advanced phases of deployment

Platforms - Integrations (PaaS & DaaS) via Cloud

Continuous Monitoring

Predictive and Generative AI

AI & Machine Learning

Big Data & Actionable Insights Predictive Analytics

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Identifying Key Conditions and Staffing Needs for Effective Home Care
Medical Director Lee Health

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Three Key Areas of focus for Lee Health RPM

How and Why to structure your team carefully!

Clinical Structure

- ✓ Build new Department
- ✓ Staffing with clinicians

Referrals

- ✓ If you build it, they won't come!
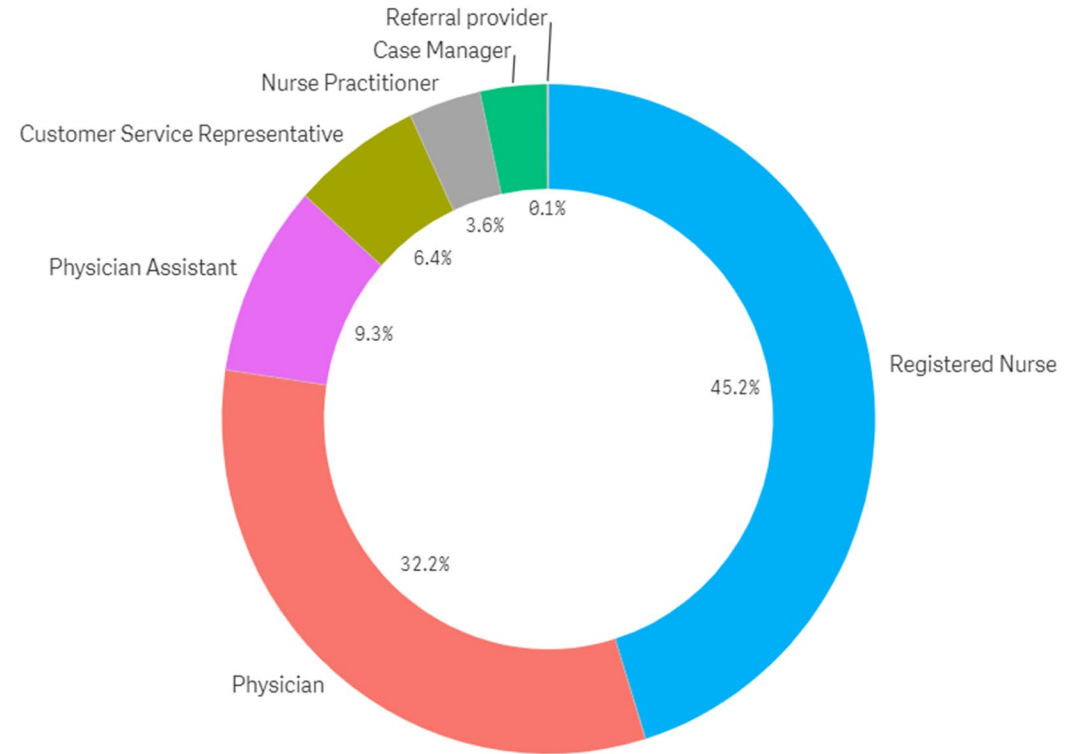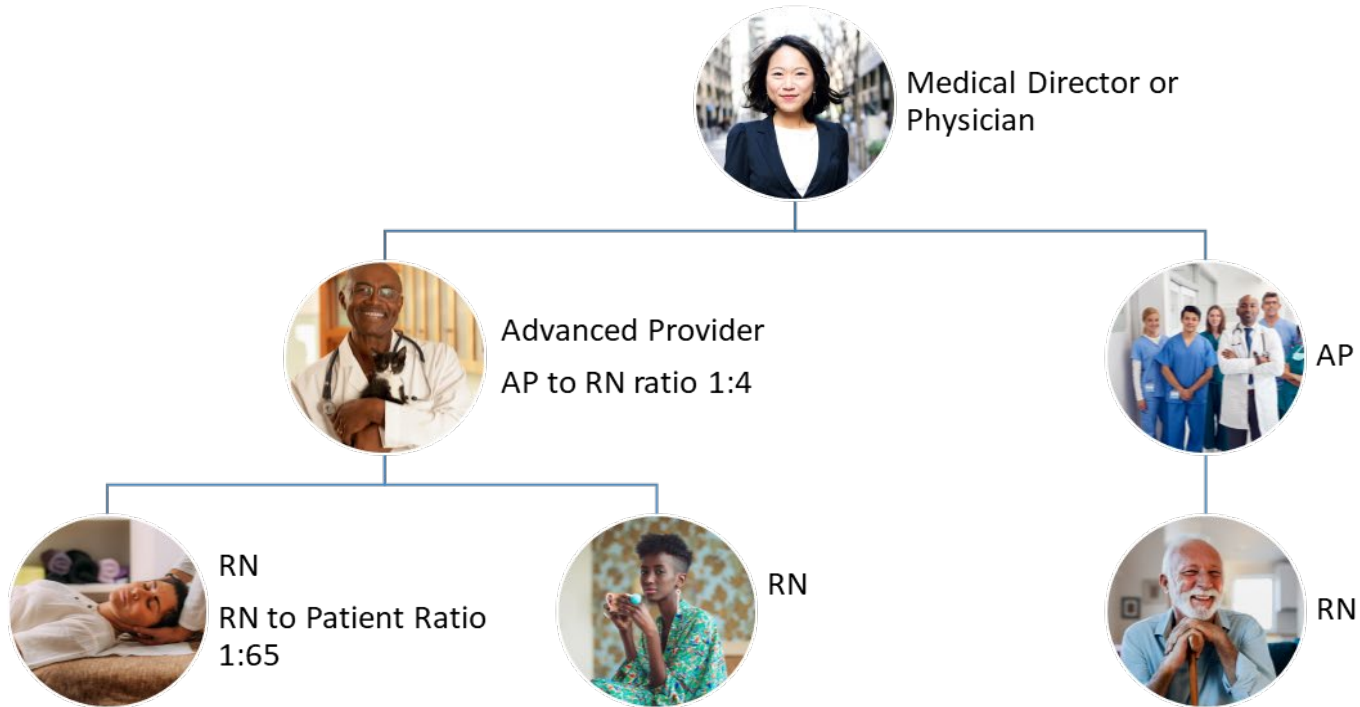- ✓ Developed BPAs to identify and refer patients

Clinical Outcomes

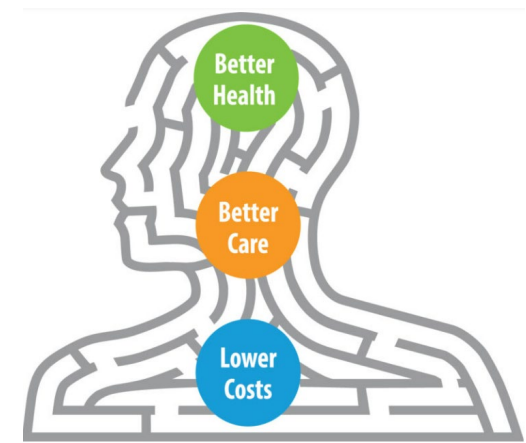- ✓ Improved clinical care with 50% reduction in 30-day readmissions

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Lee Virtual Health Clinical Team Structure

Medical Director or Physician

Advanced Provider
AP to RN ratio 1:4

AP

RN
RN to Patient Ratio 1:65

RN

RN

Registered Nurse — 45.2%
Physician — 32.2%
Physician Assistant — 9.3%
Customer Service Representative — 6.4%
Nurse Practitioner — 3.6%
Case Manager — 0.1%
Referral provider

Key Fact(s)

- Removed from Home Health and created independent clinically lead & staffed department
- Had 2,400 active patients in 18 months and current Avg. Daily Census (ADC)=~700
- Avg. 20 patient outreaches per day/per RN

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Active RPM Care Pathways

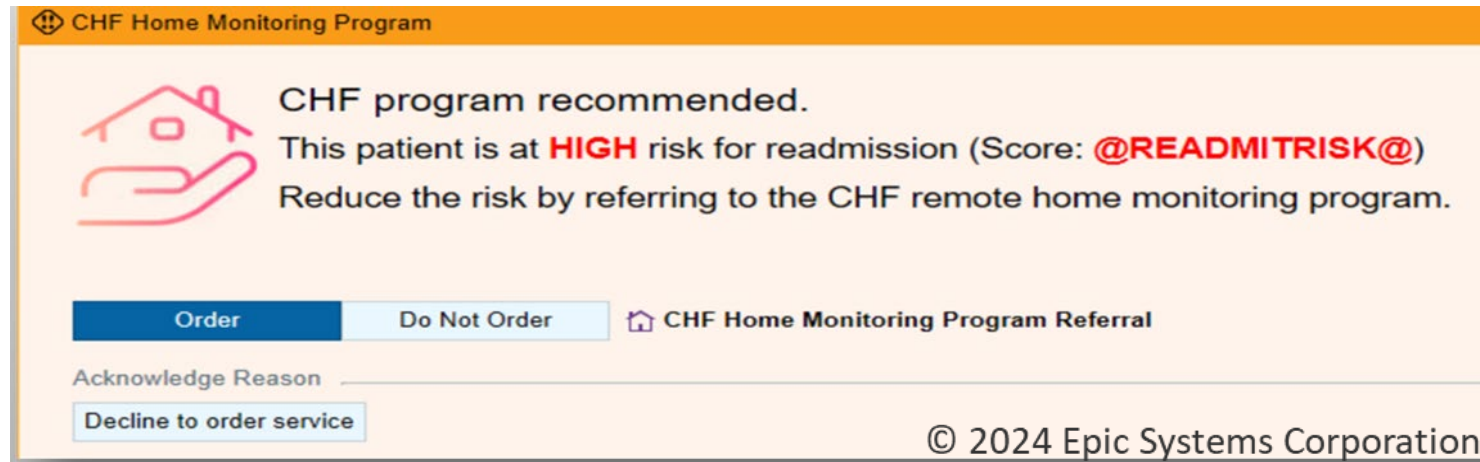| Pre-existing Program	Expansion
CHF	OB/GYN
COPD	Sepsis
HTN	Oncology

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Referral Optimization Program

If you build it, they won't come:

✓ Referral volumes were low and not stable
✓ Instituted Risk Based RPM Referral for CHF
  - Resulted in 50% inc. Referrals (46->115 per/month, total n=742)
  - Click rate 51% (>30% considered very successful)
  - Overall program conversion rate: 43.8% (6,730/2,947)

✓ Due to massive success, we rolled out BPA's in Sepsis, COPD, and now OB

⊕ CHF Home Monitoring Program

CHF program recommended.
This patient is at **HIGH** risk for readmission (Score: **@READMITRISK@**)
Reduce the risk by referring to the CHF remote home monitoring program.

| Order | Do Not Order | ⌂ CHF Home Monitoring Program Referral |

Acknowledge Reason

Decline to order service

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References: *remote-patient-monitoring-guidance-2019.pdf (heart.org)

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Clinical Outcomes with Current Model

Readmissions

- 44% reduction in all cause readmissions (18.8%->10.4%, n=1,702)
- 65% reduction in CHF readmissions (20%->7%, n=519)
- 35% reduction in Sepsis Survivor 30-day readmission (40%->26%, n=33)

Adherence & Efficiency

- Overall adherence w/daily vitals 71% (n=1,702)
  - BP: 73%
  - O2:71%
  - Survey:63%
  - Weight:71
- Avg. age 72 (n=1,702)
- Response time by clinicians to RN escalations (~18min)

System Collaborations

- Referrals to complex services:
  - Rapid Diuresis clinic: 19
  - CHF transition clinic: 36
  - Pharmacist e-consult: 40
- Oral diuretic protocols for CHF (treat in place) n=356
- Mobile urgent care referrals (n=46)

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Elevating Care with Digital and AI Innovations

HRS Head of Product

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Passive Monitoring: Vitls

Thin. Unobtrusive. Wireless. Flexible.

The newest addition to our portfolio of proven monitoring technology can improve detection of deterioration, shorten hospital stays for higher acuity patients, decrease treatment costs, and increase patient satisfaction scores by enabling care providers to continuously monitor important vital signs like body temperature, and heart rate.

- ✓ Scheduled, passive data collection

- ✓ Configurable reading frequency

- ✓ 5 inches small, lightweight, and comfortable

- ✓ Waterproof

- ✓ Easily sync data via the cloud to your EHR system or any connected device

- ✓ Disposable with a 7-day wear time

- ✓ Ages 2 to 100
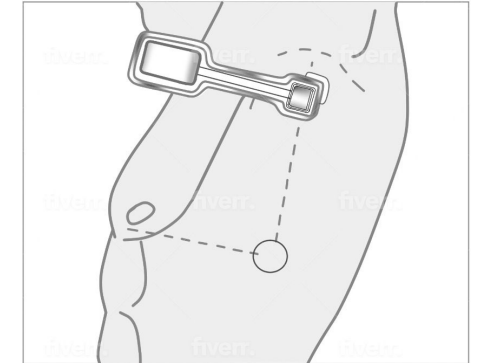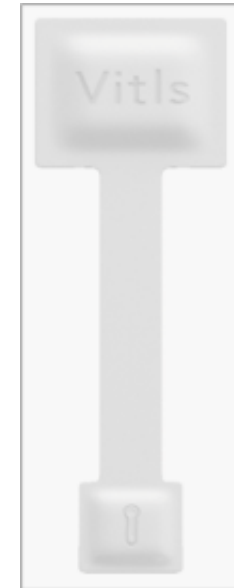
FDA Cleared Parameters: Core temp, Heart rate

Additional Parameters: SPO2, Respiratory rate, 9-axis accelerometer

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HRS – AI Initiatives In Progress

Patient Readmission Risk Scoring

Machine learning model to predict patient hospital readmission based on internal and external patient data

Clinical Note Sentiment Tracker - This combs all clinical notes written concerning a specific patient and provides a sentiment score around the patient based on what was written and can then be used in overall stratification

Anomaly Tracker - This will establish patient-specific anomaly tracking because of a patient's prior reading rather than pegging anomalies to a static measurement

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HRS – AI Initiative in Collaboration with Amazon

HRS AI Collaborative Initiative with Amazon Web Services (AWS)

*Introducing **JAIN** – **J**ayne, our Generative **AI N**ursing **A**ssistant, Enabling Care Teams to Deliver More Effective Care, at Scale*

Feature Overview:

- JAIN will serve as a care-team facing chatbot, which will support on demand data collection, summary, and analysis to aid in decision-making processes
- The feature aims to streamline information retrieval, enhance data comprehension, and ultimately contribute to more informed clinical decisions

Functionality Overview:

- The feature will allow for collection of HRS patient data and via the implementation of algorithms, will provide the capability to summarize and analyze biometrics and other data points
- Response time for any queries will be delivered within 2-seconds, and for complex analytical requests, within 5 seconds
- Delivery is supported by Natural Language Processing (NLP) and Large Language Models (LLM) using both pre-trained medical language models, user generated input, and real-world data; including contextual understanding for queries
- Data Protection, Security & Privacy and adherence to HIPAA standards established to be within compliance for evolving AI legislation

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HRS – AI Initiative in Collaboration with Amazon

Example Use Cases*:

- **User driven queries, to support on-demand patient information queries – Patient Centric Queries**
  "Summarize the last 4 notes written on Patient John Doe"
  "How has this patient's blood pressure changed since they began using Lisinopril medication?"
  "Has John Doe met 16-day Bluetooth readings in this month?"
  "What is the shipping status of this John Doe's kit?"

- **Provider Centric Queries**
  "Give me a list of patients and the follow up information I documented, based on the most recent notes where indicated that I needed to follow up"

- **Population Centric Queries**
  "Give me a list of patients with at least 12 but less than 16 Bluetooth readings in this month. Include their stored phone number and their total Bluetooth readings"
  "What is the average change in systolic blood pressure for Hypertension patients after 7 days, 14 days, 30 days in the program?"

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Strategies for Implementing Digital Enhancements

Medical Director Lee Health

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Technology Enabled Enhancements: Future State

Resource Utilization

Improved RN/Patient Ratios through Reading retry, Risk scoring, chart scanning & analysis, anomaly tracking & auto-baselining brings

- RN: Patient 1:65->1:110

- RN/AP staffing through predictable BPA referrals

Adherence & Outcomes

- Vitals adherence via Passive "continuous" monitoring technology
- Expected: 100%

- Sepsis Readmission via Passive "continuous" monitoring technology:
- Current: 26%->7-10%

Better Risk Assessment

- Optimal RN to Patient ratios

- Improved risk profiling

- Early interventions mean better outcomes

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Enterprise Support Across the Full Continuum of Care

IVR/Automated Calling   **Cellular Peripherals**   **BYOD + Mobile App**   **App + Peripherals**   **Tablet Only**   **Tablet + Peripherals**   **Continuous Monitoring**
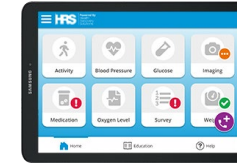
Low Risk   **Rising Risk**   **High Risk**

Care at Home as a Service

- Enterprise Product Offering
- Billing and Reimbursement
- Logistics and Inventory Management
- Remote and In Person Support for - Onboarding, Retrievals and Service Calls
- Clinical Monitoring with Multi-licensure support
- Deep Analytics and Reporting Suite
- Interoperability and Integrations
- Technical Support
- Asynchronous Wound Consult Program

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Questions?

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