Digital Health: Driving Innovations in Wound Healing and Patient Education

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The global healthcare landscape is changing in a post-COVID-19 world

- Emphasis on homecare for chronic diseases
- Increase in patient influence and digitally enabled treatments
- Evolving competitive landscape
- Rise in emerging market
- Shift to digitally driven customer engagement and remote working
- Operational resilience and rise of localization
- Health systems facing cost pressures

The Global Healthcare Landscape

Pioneering trusted medical solutions to improve the lives we touch
ConvaTec Advanced Wound Care

**SYSTEMIC & HOLISTIC FACTORS**
- Diabetes
- Vascular Disease
- Lifestyle (Obesity, Mobility, Nutrition, psychosocial)

**LOCALISED FACTORS**
- Perfusion (Oxygen)
- Infection & Inflammation
- Edema (Swelling)
- Offloading (Pressure)
- Pain Control
- Tissue Viability
- Moisture Balance

**END STAGE WOUND CONDITION**
- DFU
  - 15 Million Pts
- PU
  - 23 Million Pts
- VU
  - 9 Million Pts
- SUR
  - 29 Million Pts

**TOTAL VALUE POOL**
- $100BN (across wound care continuum)
- LABOUR (Nursing time): 65BN
- OVERHEAD (tests, out-patient visits, in-patient stays): 28BN
- DEVICE (Dressings & Devices): 7BN

**CORE BUSINESS**
- DFU
- PU
- VU
- SUR
More patients

Fewer skilled clinicians

Less money to spend per patient

Increasing patient expectations and participation

Fragmentation across care settings

Transition into homecare
Creating a digitally enabled wound care ecosystem

Prevention & Patient Engagement

- Lifestyle & Chronic Care Management Applications
- DFU / PU Prevention Technologies

Diagnosis & Assessment

- Clinician Decision Support Applications
- Digital Diagnostics & Imaging

Intervention & treatment

- ‘Smart’ Sensor Enabled Dressings (Wound Health Monitoring)
- Active Agent & Therapy Delivery

Monitoring & follow up care

- Data Enabled Telehealth Services
1. Diabetic Foot Ulcer Prevention Technology – Business Development
2. Wound Care Clinical Decision Support System
3. Wound Care Connected Dressings
4. Concept: Ostomy Virtual Reality Patient Education Solution
5. Concept: Wound Care Augmented Reality and Hololens Application
6. Women@ConvaTec
Diabetic Foot Ulcer Prevention Technology

Business Development Technology Assessment

Cost Burden
- Hospitalisation
- Readmissions

Amputations
- Patient Satisfaction
- ER Visits

Project Outcome: Recommendation for technology acquisition and business development opportunities to the executive leadership team
Wound Care Clinical Decision Support System

Core Platform

HCP Platform

Patient Platform

Operations Platform (Optional)

Telehealth Services (Optional)

Care Optimization, Remote Monitoring, & Connected Devices (Optional)

Reimbursement codes available from $150 - $190 pm for remote telehealth services (including image review, analysis and virtual patient check in)

SaaS Revenue Model common in the market for initial direct revenue generation.
Wound Care Clinical Decision Support System

Business Model & Go To Market Strategy

Technology Development Assessment

<table>
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<th>Perspectives Development Path</th>
<th>Actionable Business Model</th>
<th>MaximumDailyUserAuction (Limits to 50k)</th>
<th>Value in Core Business</th>
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Product Specification Development
Wound Care Connected Dressings Concept

1. Clinician applies smart dressing. An embedded sensor pairs with mobile application.

2a. Real-time data sent to clinician & patient mobile app on wound dressing condition.
2b. Notification triggers to HCP / patient if intervention is needed before dressing change.

3. Data from smart dressings is aggregated to prioritise & proactively manage local wound population.
Wound Care Connected Dressings – Clinician Studies

Top 3 challenges identified

1. Too many patients visits to fit in a day
2. Patients not contacting you when wound shows sign of infection or deterioration
3. Visiting patient home to find that dressing is overly saturated

Top 3 key data sets identified

1. Infection
2. Dressing saturation
3. Wound moisture level & fluid balance
Ostomy Patient Education Virtual Reality Concept

Proof of Concept Objective:
Pre-surgical Ostomy Patient Education and teleconsent delivered through a virtual reality experience

Improve the Patient Experience:
The simulation is designed to consistently deliver patients with education about their procedure and simulate life after an Ostomy procedure.

The experience is focused on the type of ostomy the patient will receive (colostomy, ileostomy, and urostomy)

Improve Clinician Experience:
The solution includes the option for a clinician to utilize the software for teleconsent to input into the EHR.
Wound Care Augmented Reality and Hololens Application

**Proof of Concept Objective:**
Develop a prototype augmented reality solution that allows clinicians to visualize a patient’s wound, try different dressings and wound management protocols on the wound virtually to determine the best course of treatment.

**Long Term Use Cases:**
The solution would be available for education as well as real-time patient use.

**Clinical Use Cases:**
- Dressing Type Recommendation
- Dressing Size Recommendation
- Wound Analysis – Size, Moisture Level, Depth, Healing Progress
- Medical Record Creation & tie to Clinical Decision Support System

**Education Use Cases:**
- DFU Classification Training
- Wound Hygiene Training
- Treatment Simulation: Education as a Real Time Process
Dare to be **Remarkable**!

Virtual Body Language
Building Virtual Rapport

In Conversation: Making progress in gender equality at ConvaTec
Conclusion

**Clinical Experience** – Exposure and key learnings across new patient pathways and chronic care

**Commercial Experience** – Developing value propositions for product application and use by Patients, Clinicians and Payers through market research

**Development Experience** - Hands on technology research and development in digital health

- Thermal Detection Applications
- Clinical Decision Support Software
- Connected Devices & Sensor Utilization
- Remote Monitoring and Telehealth
- Virtual & Augmented Reality

Opportunity to get involved as a female leader! 😊
Back-up
And if we had people coming round, I'd certainly make sure it was covered up.
Diabetic Foot Ulcer Prevention Technology

Cost Burden
Complications of the lower extremity make up 33% of all diabetic costs

Hospitalisation
1 in every 13 inpatients are primarily admitted due to a foot-related condition

Readmissions
In the 2 years after a wound has healed, as many as 50% of patients will re-ulcerate

Amputations
Diabetes-related foot complications are the leading cause of lower extremity amputations

Patient Satisfaction
Patients with diabetic foot disease fear a lower extremity amputation more than death

ER Visits
$1.9B is spent each year on emergency department visits due to diabetic foot ulcers

Project Outcome: Recommendation for technology acquisition and business development opportunities to the executive leadership team
To create future value, ConvaTec will need to own the algorithms and user interfaces that derive usable information from clinical and operational data streams for the clinician.

From this data a ‘virtuous improvement cycle’ can be achieved which will unlock enhanced value that has the potential to be monetised for the shared benefit of ConvaTec and care providers.