2020 Health Leadership Conference

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Heart of the Possible: Running for Your Life

NHC 2020 Health Leadership Conference

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I could not figure how to take my pulse.
Exercise

240/min

1 sec
270 Beats per minute
AV Ablation

(electrocution)
100%
Battery dependent
How do I feel?

Would I ever wear a swimsuit again?

What would a pacemaker look like in my chest?
pacemakers
Normal right side blood flow

Blocked left side blood flow
I need a goal: **LOTOJA Classic bike race**!

- Am I really a heart patient?
- How do I prepare for open heart surgery?
Glamour shots
Everything was going so well...
<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaking and bleeding internally</td>
<td>Vital systems crashed</td>
<td>I might not live</td>
</tr>
<tr>
<td>Right lung collapsed</td>
<td>Emergency bedside surgery</td>
<td>Back to ICU</td>
</tr>
<tr>
<td>Chest cavity filled up with blood</td>
<td>Blood transfusions</td>
<td>Lung surgery</td>
</tr>
</tbody>
</table>
Post surgery training plan

1. Walking laps at the hospital
2. 4 minutes on hotel spin bike
3. Getting back on my mountain bike
4. 10 mile road bike event
5. 50 mile LOTOJA
6. 100 mile Tour de Palm Springs

2 months
5 months
1 year anniversary
Successful Outcome!

I refuse to sit still. Since having open heart and lung surgery in 2010, I’ve competed in multiple 200-mile single-day road and gravel bike races around the world.

This has given me a unique experience as to how data collection, analysis and management can prove beneficial to personal health.
Selfcare Data: Making better choices
Trust

Learning to trust that my device is going to work... My life depends on it!
Your heart, Your mind

Is it working... Is it working... Is it working?

Overcoming the fear: Help me feel safe!
I have relied on machines for 35 years.

100% dependent on a pacemaker (on my seventh one).

Current Boston Scientific device collects data on every heartbeat, checks for abnormal rhythms, and monitors voltage settings and battery life. The information is transferred via a wifi-enabled communicator and made available to doctor for analysis.
New Apple Watch

Normal resting ECG taken with Apple Watch.

Heidi Dohse
Date of Birth: Jan 23, 1964 (Age 55)

Recorded on Jan 27, 2019 at 8:33 PM

Sinus Rhythm — 60 BPM Average

This ECG does not show signs of atrial fibrillation.

25 mm/s, 10 mm/mV, Lead I, 513Hz, iOS 12.1.2, watchOS 5.1.3, Watch4.4 — The waveform is similar to a Lead I ECG. For more information, see Instructions for Use.
Patient Journeys:

Transforming from the old paradigm of “patient” into a new model of “consumer”.

Google Cloud
Many journeys start with a Google search:

200 billion health & wellness-related Google searches in 2018!
Personal Accountability:

As consumers take on a larger share of their health care cost, they are becoming more active and engaged in managing their health and wellness.

Access to information and tools for managing health are important...
Healthcare Industry:

“Patients’ journeys across the care continuum can be improved with patient-centered technology integrated into the care process.” HealthAffairs.org 2019

Retail Reality:

Consumers want access to greater convenience, service, and information.

Retailers are disrupting the existing healthcare system by offering care centers with more hours of operation, lower fees, and access to basic diagnostic tests and medical services.
Bridging the Gap: From Healthcare to Selfcare
Challenges and Opportunities:

Challenges for Healthcare:
- Misaligned success metrics
- Focus on crisis management not person journey
- System not designed for coaching patients to get their life back.
- There is not a billing code for Happiness!

Opportunities for Patient Advocacy Organizations:
- Provide Hope and Inspiration! Showcase success stories
- Guidance on goal setting and developing plans to achieve them
- Education on how to choose the right apps and digital health solutions for real-time insights
- Understand and empathize that this is a lifelong journey
- Engage with us as people not just patients!
Accelerating Delivery of Selfcare & Healthcare Solutions
Digital Health

- Wireless medical devices
- Health IT
- Medical device data systems
- Telemedicine
- Software as a medical device (SaMD)
- Medical device interoperability
- General wellness
- Mobile medical apps
- Cybersecurity

Digital Health Benefits:

- Improve my health: 63%
- Ability to take greater control over my health: 56%
- Improve my fitness: 56%
- More information: 33%
- Better overview of my health: 28%
- Obtaining information which is hard to get: 26%
- Reducing my healthcare costs: 25%
- Making everyday life easier: 21%
- Ability to access healthcare providers more effectively: 21%
- Accessing better quality healthcare: 20%
- Better treatment: 18%
- Use innovative technology: 17%
- Other: 8%
## Digital Health Scenarios:

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Prevention</th>
<th>Diagnostics</th>
<th>Therapy &amp; Surgery</th>
<th>Treatment &amp; Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart clothing</td>
<td>Smart clothing</td>
<td>Tele-EEG</td>
<td>Cardiac Implants</td>
<td>Connected Sonographic unit</td>
</tr>
<tr>
<td>Fitness Wristband</td>
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<td>Tele-EKG</td>
<td>Smart glasses</td>
<td>Connected Breathing</td>
</tr>
<tr>
<td>Smart Watches</td>
<td>Portable Asthma Sensors</td>
<td>Connected Blood Pressure Meter</td>
<td>Motion Control Surgery</td>
<td>Rate Appliance</td>
</tr>
<tr>
<td>Smart Scales</td>
<td>Digital Microscope</td>
<td>Digital Microscope</td>
<td>Robotic Surgery</td>
<td>Connected Blood</td>
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<tr>
<td></td>
<td>Medical imaging</td>
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<td></td>
<td>Glucose meter</td>
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<tr>
<th>Software &amp; Services</th>
<th>Prevention</th>
<th>Diagnostics</th>
<th>Therapy &amp; Surgery</th>
<th>Treatment &amp; Recovery</th>
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<tr>
<td>Fitness Apps</td>
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<td>Diagnosis Apps</td>
<td>Online Consultation</td>
<td>Diabetes Diary</td>
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<tr>
<td>Nutrition Apps</td>
<td>Medical Records</td>
<td>Medical Records</td>
<td>Blood Pressure Monitoring Apps</td>
<td>Digital Care Diary</td>
</tr>
<tr>
<td>Telemonitoring Software</td>
<td>Software</td>
<td>Mobile Digital Medical Round</td>
<td>Surgery Support</td>
<td>Online Pharmacy</td>
</tr>
<tr>
<td>Health Destination</td>
<td>Mobile Digital Medical Round</td>
<td>Medical E-Learning Platform</td>
<td>Online Experts Platforms</td>
<td>Telemedical Services</td>
</tr>
<tr>
<td>Online Fitness Centres</td>
<td>Medical E-Learning Platform</td>
<td>Online Fitness Centres</td>
<td>Online Experts Platforms</td>
<td>Digital Self-Help Groups</td>
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Cloud and AI Enabled Digital Health Platform

- Payer/Health Plans/Pharma
- EMR, Legacy Systems
- Genomics Data, Imaging PACS
- On-prem Data warehouse Data/Analytics Engine
- Patient Mobile and Tablet Apps
- Remote Monitoring Devices
- Wellness and Fitness Devices
- External Data

Healthcare Enterprise Landscape

Google Cloud AI Enabled Digital Health Platform
Final Thoughts...

As a lifelong heart patient, I have waited a long time for all the pieces to come together and now the Healthcare industry is ready!

Today there are Implantable, Wearable and Environmental sensors to collect data in the context of living our lives. Cloud infrastructure to ingest, organize and make the data useful.

In the near future physicians can customize healthcare with the use of genomics data and proactively diagnose health issues before they become expensive to treat.
Thank you!

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