Supertrends: Forces Shaping New World Approach to Planning – Part 3

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What Happens To Brick & Mortar With Increasing Homecare Demand?

Donald G. Bellefeuille, Healthcare Strategist, Director, NBBJ
Point of Care Testing
Pre & Post Op Care

SeamlessMD

myrecovery

ACE SUMMIT
AND REVERSE EXPO
Qualcomm Tricorder XPRIZE Finalists

Dynamical Biomarkers Group - Taiwan

Final Frontier Medical Devices - US
India’s Swasthya Slate
Smart Homes

Nonintrusive monitoring system (that is, movement monitoring)
Sensor 1
Sensor 2
Sensor 3
Management hub
ZigBee-based WSN
Environment sensing system
Sensor 1
Sensor 2
Sensor 3
ZigBee/6LoWPAN-based WSN
Energy consumption system
Sensor 1
Sensor 2
Sensor 3
ZigBee-based WSN
IP-network bridge
Ambient sensor network
Camera
Home display unit (non-IP)
Home gateway/hub
ZigBee/6LoWPAN Sink-node/dongle
Home router
Home broadband
Internet
Cellular network AP
SPHERE data hub
BLE-Wi-Fi bridge
BLE node
Wearable sensors
Smartphone/tablet
Ethernet/Wi-Fi/routers
SPHERE
Image: IEEE Computer Society
Mobile Integrated Healthcare

Image: JEMS.com
Genetic Engineering Home Lab Kit: $1,849

http://www.the-odin.com/genetic-engineering-home-lab-kit/
Artificial Intelligence

IBM Watson Health

DeepMind Health

Sentrian
Remote Patient Intelligence

IPsoft
The Digital Labor Company

NVIDIA

ACE Summit and Reverse Expo

doc.ai
Xiaoyi

• First robot to pass Chinese medical exam with 456 out of 600 points
• Machine learned by reading textbooks and case information
• Can “learn, reason, and make judgements by itself.”
• “What it can do most at present is make suggestions to doctors, to help them identify problems quicker and avoid some risks.”
Connecting All These Things (and the data they rode in on)
Telehealth/Virtual Care Forecast

10-Year Volume Change by Service Line and Site of Care
(Color indicates Site of Care)

<table>
<thead>
<tr>
<th>Service Line</th>
<th>Year</th>
<th>Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergy and Immunology</td>
<td>2026</td>
<td>1M</td>
</tr>
<tr>
<td>Breast Health</td>
<td>2026</td>
<td>2M</td>
</tr>
<tr>
<td>Burns</td>
<td>2026</td>
<td>3M</td>
</tr>
<tr>
<td>Cancer</td>
<td>2026</td>
<td>4M</td>
</tr>
<tr>
<td>Cardiology</td>
<td>2026</td>
<td>5M</td>
</tr>
<tr>
<td>Dermatology</td>
<td>2026</td>
<td>6M</td>
</tr>
<tr>
<td>Endocrine</td>
<td>2026</td>
<td>7M</td>
</tr>
<tr>
<td>ENT</td>
<td>2026</td>
<td>8M</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>2026</td>
<td>9M</td>
</tr>
<tr>
<td>General Medicine/Surgery</td>
<td>2026</td>
<td>10M</td>
</tr>
<tr>
<td>Gynecology</td>
<td>2026</td>
<td>11M</td>
</tr>
<tr>
<td>Infectious Disease</td>
<td>2026</td>
<td>12M</td>
</tr>
</tbody>
</table>
WHAT HAPPENS TO BRICK AND MORTAR?
The Speciation of Hospitals
Care Facility of The Future

- Intense Acute Care Facility
- Intense Ambulatory Care Facility
- Urban & Rural Critical Access Facility
- Virtual Care Facility
<table>
<thead>
<tr>
<th>Inside the IAcF</th>
<th>Outside the IAcF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less beds, shorter stays</td>
<td>A variety of different settings including you</td>
</tr>
<tr>
<td>Emergency and disaster response</td>
<td>Urgent, super urgent, and some emergent care</td>
</tr>
<tr>
<td>Most maternity and neonatology</td>
<td>Interventional procedures</td>
</tr>
<tr>
<td>Infectious disease needing containment</td>
<td>Infectious disease not needing containment</td>
</tr>
<tr>
<td>Chronic disease with complex morbidity</td>
<td>Chronic disease</td>
</tr>
<tr>
<td>Advanced procedures requiring close monitoring</td>
<td>Scheduled incisionless or minimally incisionless procedures</td>
</tr>
<tr>
<td>Therapeutics that need containment</td>
<td>Therapeutics that do not need containment</td>
</tr>
</tbody>
</table>
Operating the Care Facility of the Future

Activity will be constantly monitored, measured, and adjusted using a variety of sensors and data streams.

Rooms will be multi-functional enabling a wide variety of procedures, imaging, and types of care.

Designs will accommodate MI, robotics, & efficiency while enhancing the human/machine interaction.

Operating rooms, per se, won’t exist.

Teaching and research will be dispersed to a variety of care settings.

Purpose designed autonomous robots and MI will replace routine functions.
Plug and Play
Large Component Prefabrication
Modularity
Modular Procedural Areas
Temperature Controlled Airflow

Standard OR

Hybrid OR

Instrument Prep Room
Dumfries and Galloway Royal Hospital, Scotland
There are two things I know about the future: It’s coming and it’s not here yet.