Medical Technology Innovation: Driving efficiencies of healthcare systems

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MedTech: a diverse sector
Eucomed and the Medical Technology Industry

- Eucomed represents the medical technology industry in Europe
  - Eucomed’s mission is to make modern, innovative and reliable medical technology and services available to citizens
  - Members: 25 national associations plus 58 direct corporate members

- Medical technology industry in the EU
  - About 22,500 medical technology companies in EU
  - 80% SMEs
  - €95 billion annual sales; 8% re-invested in R&D
  - Nearly 500,000 employees
  - > 500,000 products (10,000 generic groups)
  - One new European patent every 38 minutes*

*OECD 2010; European Patent Office 2006
Driving efficiencies through MedTech innovation

- Medical device spending accounts for 2-5% of total healthcare spending
  - cost saving in medical devices has limited impact

- Operational expenses reach ~80-85% of total spending
  - small change here: significant impact

Source: Espicom; WHO; World Bank, LEK analysis

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Example 1: Clinical benefits and cost-effectiveness of a rapid MRSA screening programme (Blackpool Teaching Hospitals NHS Foundation Trust UK)

- **Problem:**
  - Large Acute Hospital Trust (800+ beds across five sites) with a local population of 330,000 plus 12 million visitors
  - **Hospital trust was failing government targets for MRSA Bacteremia reduction [2007-08]**

- **Innovative Solution:**
  - As part of infection control programme introduced a rapid diagnostic test based on MRSA DNA to spearhead a range of initiatives.
  - Rapid Results (within two hours), sensitive and specific, reliable and reproducible
  - Rapidly available MRSA results were used to complement clinical decision making and optimize treatment
  - **A combination of the use of cutting edge technology and deep staff engagement**

- **Results:**
  - Winner of Department of Health and NHS Purchasing and Supply Agency HCAI Technology Innovation Award 2009
  - **Reduced MRSA Bactaeremias by 78% & 80% in next 2-years**
  - “The overall benefits and savings achieved in the current study more than justified the expenditure on rapid screening, and the Trust has since adopted PCR as a regular screening service for emergency admissions”*

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Example 2: Clinical pathway optimization in orthopedic surgery

- **Innovative Solution:**
  - Successful in: Hvidovre hospital, Copenhagen (DK), Hillingdon hospital, London (UK), Stenum Hospital, Ganderkesee (DE), several hospitals in NL
  - An accelerated care programme for orthopaedic implantation, that optimizes all aspects of a patient’s journey from intake to discharge:
    - Improved hospital organisation
    - Improved cross functional communication
    - Higher staff recognition and team building competence
    - Improve reputation of surgeons and hospital
  - A combination of latest medical technology, organisational change and staff engagement

- **Results:**
  - Cost reduction per patient: up to 25%
  - Reduction of length of hospital stay: from 12-14 to 2-5 days
  - Increased patient throughput and reduced waiting lists
  - Improved medical outcomes and significantly less pain medication
  - Increased patient satisfaction
  - Improved quality of care with significant reduction of costs
Example 3: Remote monitoring of patients with cardiac implantable devices

- **Problem:**
  - About 14 Mio people in Europe suffer from heart failure, trend is increasing with ageing population
  - About 1-2% of total healthcare budgets are spent on heart failure, out of which 70% accounts for hospitalisation; trend increasing

- **Innovative Solution:**
  - Remote monitoring of patients with implanted cardiac devices improves clinical outcomes and optimises resource allocation, in particular scarce working time of healthcare professionals
  - It provides a holistic patient care concept which keeps the patient active and safe by integrating community and hospital settings

  - European Commission: [www.renewinghealth.eu](http://www.renewinghealth.eu) (9 regions implementing health-related ICT services, including telemonitoring)

- **Results:**
  - Reduces patients’ in-office visits by nearly 40%
  - Reduces emergency services; reduces time to clinical decision by 80%
  - Reduces length of hospital stay by 20%
  - Reduces costs by 40%
  - Improved quality of care, reduced costs

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Conclusions

1) Medical technology innovation goes more and more beyond pure product innovation and includes services and process innovation that positively affects patients pathways and hospital economics.

2) Medical technology is an enabler to address overburden and shortage of healthcare workers by optimizing resource allocation, healthcare delivery and health outcomes.

3) Closer collaboration between hospitals and medtech industry is needed to create a dialogue for new solutions and services.

4) Prerequisite for innovation capability are smart systems that incentivize innovation (regulatory framework, procurement, HTA and funding).
Med Tech: Value for Healthcare Workers and Systems

- Continuous training and education
- Increased productivity
- Expand technical competencies
- Reduced hospital stays
- Protecting healthy workforce
- Ambulatory / Home Care / self-management
- Increase resource efficiency & ROI
- Remote interventions
- Connectivity and solutions to allow integrated care
- Reducing risk of infections & medical errors
- Reducing impact of human factor on health outcome

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