

**Using sensor networks to address  
global issues:  
Policy opportunities and challenges**

Session 1:  
**Health and Elderly Care**

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## 1- *Technology Maturity:*

- Leveraging existing technologies
- A range of technological developments for health monitoring and assisted care as 'open or closed systems
- Numerous ongoing pilots and demonstration projects-
- Perceived as generally mature-analysis tools are also mature and critical.
- Hand-held device solutions: All hardware components not only exist but are available in consumer technology .
- Biosensors are less mature and in need of funding.

## 2- *Developments address main societal and health needs*

- Chronic disease management.
- Preventative health
- Mobility affecting degenerative diseases
- Patient safety
- Medication adherence
- Reduction in hospitalization
- Delay transition to long term care facilities

### 3- *Rolling out and scalability remain a challenge-*

- End-to-end systems need equivalent data capture methods-
- Scalability will largely depend on standards-setting, ability to integrate with other systems-commercial drivers and appropriate incentives .

### 4-*Acceptance*

- *Provider Acceptance:*
- Sensor networks and remote patient monitoring rely on changes in the usual workflow.
- Special issues arise in systems where physicians are payed fee-for-service
- Implementation may impact on hospital revenues or on employment.
- *Patients Acceptance:*
- Familiarity with device, usability, feedback loops necessary- use of sensor networks could improve this.
- Many users are willing to accept some loss of privacy in exchange for increased safety (E.g. with wearable fall sensors)

## **5-*Market-Who pays ?***

- There is a difference btw open and closed system
- Coverage is limited
- Willingness to pay by patients/consumer will be key
- Evidence of cost-effectiveness will be necessary to convince public and private payors (and beginning to emerge).

## **6-*A variety of new business models are emerging-***

- long term sustainability of these models currently unknown

## **7-*How risky is investment in this area?***

- ROI generally uncertain- most business models based on cost-avoidance. (there is a difference btw an open and closed system).

## **8- *Should Governments intervene?:***

- Health a special sector- significant misalignment of incentives
- Action is needed to drive industry to comply and implement interoperable solutions –educate and facilitate organisational change (staff training ).
- Government funding needed for R&D can have huge impact . facilitate interdisciplinarity/ interoperability and open systems.

## **9-*Privacy and security:***

- Special privacy and security implications in the home care context and
- Access and data ownership
- Privacy and Security issues should be embedded at design stage.
- Patient-ownership of his/her own data is a critical point from which to build privacy support (although its not the only component of the solution)
- Location based data is a privacy issue
- Public Key management

## **10- *Data Acquisition and Processing:***

- Acquisition of data and information will need to be meaningful and accurate.
- Legibility of data relevant also so that patient, caregivers and others can make reasoned privacy decisions.
- Data processing will need to take into account the established medical knowledge and professional expertise.