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CONFERENCE ABSTRACT

Vectors and drivers of connected health in Europe: a foundation for integrated care

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Coordinated, integrated care requires connected "inputs, delivery, management and organization of services related to diagnosis, treatment, care, rehabilitation and health promotion" (Grone & Barbero, 2002). Connected health (CH) offers a key building block as a "paradigm shift, looking after the individual and community health in a process that speaks to the health journey of the person, through the entire lifespan, leveraging a variety of technologies to do so" (ENJECT, 2016). However, CH is failing to reach its full potential – and therefore failing in its contribution to the realization of integrated care.

We conducted a multi-disciplinary literature review across business, technology and healthcare journals, triangulated with a survey of CH experts from academia, industry and clinical settings representing 19 European countries (ENJECT, COST Action TD1405). We hereby identify key vectors for CH and related drivers of change:

Policy and regulation: There is a gap between national policy/strategy statements and local or regional implementation, despite 80% of European countries having a national CH strategy and political support of CH. Currently, 2/3 of European countries rely on generic privacy, security or other legislation whereas customised regulation would better recognise the uniqueness of health-related data and its need to flow within specified channels.

Technology and interoperability: Interoperability is an ongoing process in healthcare across Europe with ePrescription and Electronic Health Records leading the field while personal health systems adoption varies. Again privacy and security concerns come to the fore, as well as usability and ease-of-adoption related issues.

Training and education: Training programmes are beginning to incorporate CH elements to equip future healthcare leaders to fully exploit CH's potential, however this is neither widespread nor in-depth. An emerging topic is education of health professionals in skills needed to participate in the design and adoption of CH solutions. Health literacy programmes

targeting the general public are largely ad hoc and rely on unconnected methods such as leaflets and booklets.

Business and revenue models: Europe's healthcare business models typically involve public and private providers while relying largely on public funding. CH reimbursement and revenue models are limited and non- standard. Innovation at both service and process levels is slow to diffuse and reimbursement models stymied due to a lack of standardised evaluation methodologies or agreement on what constitutes value. Value creation models in health are primarily built to address medical conditions, rather than prevention and self-care.

Citizen and Clinician engagement: Actors considered across both academic papers and survey vary – from industry giants, start-ups, researchers and social entrepreneurs, to government and regulatory agencies. Academic authors speak of users, patients, customers, funders and payers, highlighting the complex nature of CH markets. On the practice side, inclusion of patients in the design and development of connected health solutions relies on voluntary methods in 2/3 of European countries. We lack methods - to include a wider range of citizens, and to develop skills for both care professionals and citizens to fully participate in design and development of CH solutions.

Conclusion: Key enablers for CH span multiple directions and scales.

Keywords: connected health; data; citizen engagement; design; business models