PROJECT SNAPSHOT

7A: Identification of Sociotechnical System Elements, to Inform Knowledge Products and Internet of Things (IoT) Innovations

Pillar: Prevention of Transmission

Theme: Education & Societal Impact

Keywords: Human Factors; Information Design

AMR
One Health Consortium

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AIM

The aim of this research is to apply human factors in the design and evaluation of sociotechnical systems. Also, we aim to implement Internet of Things (IoT) enabled design strategies for surveillance, behaviour change, and education.

WHY IS THIS IMPORTANT?

There is currently a lack of understanding of the sociotechnical factors associated with antibiotics. The systems approach is meant to generate knowledge applicable to all system stakeholders (e.g. health care professionals, policy makers, technology developers, end-users).

OUTCOMES

1 Knowledge translation through interaction/information design.

2 An increase in system knowledge among stakeholders.

3 Develop a real-time, open-source system for data collection and management (e.g., keeping track of vaccines for cows).

RESEARCH QUESTIONS

1 What sociotechnical system elements influence the use of antibiotics in humans and food animals?

2 How can these characterizations be translated into knowledge products for key stakeholders within the system?

3 Can these knowledge products inform technology development opportunities to encourage behaviour change among key stakeholders?

OUR APPROACH

Apply Human Factors Methodologies to evaluate the interconnectedness of products, processes, and environments as they relate to AMR in a one health "system". The sociotechnical model reflects an emphasis on mixed-methods research to describe the barriers and facilitators to optimized system performance across individual, organizational, geographical, and cultural boundaries.

Internet of Things' enabled strategies capitalize on the ability to transform products, environments, and people into interconnected data sources through network-enabled sensing and monitoring technologies. These strategies enable novel applications of Interaction Design principles for behaviour change and surveillance.

ALIGNMENT WITH THE AMR - ONE HEALTH CONSORTIUM

LEVERAGED SOURCES OF SUPPORT

Mount Royal University (Infrastructure) • W21C Human Factors in Healthcare Laboratory

KNOWLEDGE & TECHNOLOGY EXCHANGE AND EXPLOITATION

- Knowledge in the form of information/ interaction design and open source software solutions meant to inform technology development opportunities that will encourage behaviour change.

TRAINING OF HIGHLY QUALIFIED PERSONNEL

- 4 Research Associates (W21C)
- 4 Summer Students (3 Master of Biomedical Technology, 1 Information Design)
- Collaborative Input (WP5 - Treatment Optimization) from 3 Research Associates (1 PHD./DVM, I BHSc and 1 MA)

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