Common Semantic Data Model - St Michael's House

The amount of data collected in the **electronic healthcare record** (EHR) about an individual's health state and associated condition, has grown exponentially over recent decades. Access to EHR information is no longer required solely in secondary care clinics and hospitals, but are also needed by the individual service user and their families, community healthcare organizations, community healthcare networks and primary care teams to deliver self-management support in the home.

The relationships between the systems which provide access to data and the actors who access the data from the systems needs to be carefully designed. Specifically the systems which inform health and social care interventions across online networks needs to be carefully designed to understand the relational effect and impact between humans and non-humans' agents such as IoT. In this diverse data enrich healthcare network. Actor-Network Theory (ANT) helps us to distinguish how one-factor may influence others within a social process workflow. Specifically, ANT can contribute to understanding how inanimate entities (IoT) can effect and impact on the social process of care and associated impact on behavioural change. But ANT can only provide one aspect of understanding this complex process in context.

It does not provide a solution for integration of multiple sources of data across a diverse range of resources which is considered the main challenge. Standard-based approaches try to solve the data heterogeneity problem by enforcing all stakeholders engaged in service delivery to use the same specifications and techniques. Realistically, such an approach is proving challenging and complex. To achieve **interoperability** across one to many platforms by transforming all data to a single standard capturing all features, properties, and data fields in single schema model is multifaceted and involves a number of stakeholders. In this

proposal, a **Common Semantic Data Model (CSDM**) for complex Healthcare Network, we propose a hybrid approach to tackle the complexity based on two popular standards, FHIR (Fast Healthcare Interoperability Resources) and OMOP (Observational Medical Outcomes Partnership) to accommodate maximum amount data fields in every aspect of healthcare experiment.