Chronic Obstructive Pulmonary Disease (COPD) & Asthma

Value Proposition for Patients with COPD

- **Gains**
  - fewer hospitalisations
  - reduced costs
  - better quality of life
  - self-care involvement in care
  - increasing oversight

- **Pains**
  - loss of independence
  - depression
  - deterioration in lung function

- **Gain Creators**
  - increased insights
  - greater patient autonomy
  - integrated care

- **Pain Relievers**
  - ongoing prediction
  - targeted intervention
  - timely treatment

Objective: Data-driven risk model to encourage patient self-care and enhance input for decision

**Key Partners**
- Clinicians (my mHealth)
- Data scientists (UNIS)
- Pharma (AZ)

**Key Activities**
- Engage with NIS
- Engage with patients

**Value Proposition**
- Improve the long-term patient quality of life for self-care integrated within broader care regime

**Key Resources**
- Data governance utilities; 3-party data sources

**Channels**
- Web portal
- Clinical team

**Cost Structure**
- Development costs; infrastructure; Customer support; Marketing

**Revenue Structure**
- App licensing
- Venture capital
- Cost sharing (because of reduced prescriptions)

Business Model

- **Problem**
  - Patients unaware of actual risk and unable to take control of their care; clinicians over-stretched

- **Key Activities**
  - Enhance trust
  - Enable autonomy

- **Challenges**
  - COPD sufferers
  - NIS
  - GPs
  - Clinicians
  - Specialist nurses
  - Commissioners

**Customer Relationships**
- Enhance trust
- Enable autonomy

**Rules & Regulations**
- GDPR (2018), HRA and IRB; Health & Social Care Act (2012); ABPI Code of Conduct

Self-Reporting: patients begin to take responsibility for their own care regime by regular information update (e.g., daily) self-report on well-being and particular concern. This information is available to the clinical team as a ‘health diary’ to support and enrich periodic face-to-face consultation

Data fusion and modelling: self-reports can be interrogated along with contextual information (such as environmental conditions, hospitalisation, etc.) to develop a pattern (or model) of typical exacerbation events. This helps healthcare providers to plan intervention and ongoing support. However, it may also be personalised to the individual to ensure their specific needs are understood and catered for.

Trust in technology: different trust models are relevant for different stakeholders, but each inter-related in a complex sociotechnical system. Patients are primarily concerned with that the technology should add to and enhance their care regime; clinicians need accurate data to improve and supplement time-constrained one-to-one consultation; but regulators and care providers want to see that data is secure and used appropriately, while improving the overall care strategy. Pilot 4 allows us to investigate some of these issues to extend and improve our understanding of trust leading to technology acceptance.

Healthcare: predictive models can provide alerts both to patient (to advise them to do something) and the clinical team (whether or not to intervene). In the short-term, this helps to manage prescriptions and hospitalisations to the right level: i.e., only when needed. In the longer term, it allows better health and social care planning.

COPOD prevalence has increased by 18% between 2001 and 2011 in Europe

Incidence higher for men than for women and increases with age (especially over 50)