

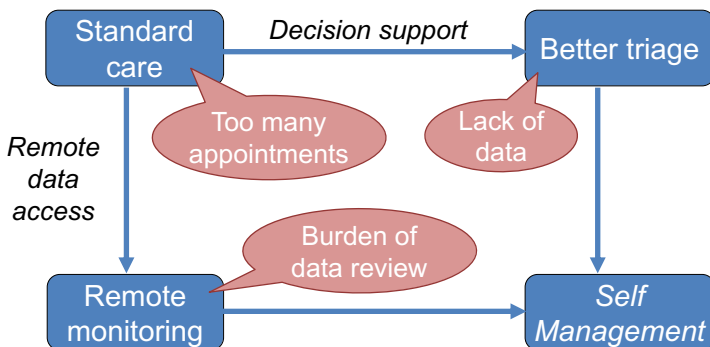


William Marsh, Turing Fellow

Practical decision support solutions in engineering and medicine

- Inter-disciplinary collaboration
- Probabilistic reasoning and risk assessment

Patient Managed Decision Support using Bayesian Networks

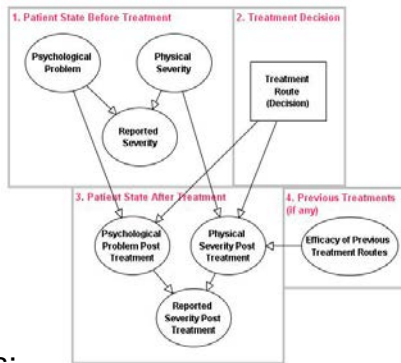


- Managing chronic conditions on fixed appointment sub-optimal
- Decision support could improve triage *BUT* lack of data for training
- Remote data available *BUT* burden of review
- Combine with patient decision support: safely reduce appointments



Managing Musculoskeletal conditions

- Many treatment options
- Progressive diagnosis
- Severe pathology masquerades
- Many conditions; complex data



REALM AI
Management of Musculoskeletal Conditions
Using Bayes Nets



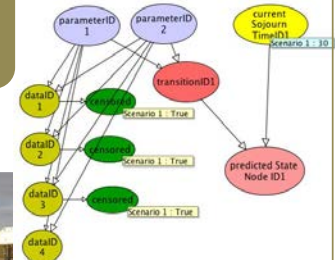
Collaborative project to investigate decision support for high-risk surgery.

- How do patients & doctors make decisions?
- Morbidity, care use & quality of life after major surgery versus alternatives
- Co-design a decision support system, with information about the long-term outcomes

Using AI in a GP App to Triage MSK Appointments



Making Maintenance Decisions from Available Data and Expert Knowledge



Images from Network Rail Media Centre

Knowledge Discovery from Health-Use Data



Can we use data from Electronic Health Record for decisions support?

- Data request or explore?
- Efficient 'data-wrangling'
- Understand semantic structure
- Handling relations (e.g. aggregation)



Tower Hamlets Clinical Commissioning Group