Epilepsy Networks Project

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Disclosures

• Educational support:
  • GSK, UCB, Orion Pharma, Bial

• Clinical IT innovation funding:
  • Innovate UK – Epilepsy Care Alliance, Project TACTIC
  • Wessex AHSN – NeurAvatar project

• IT Consultancy: UCB

• Speaker fees: UCB, GSK

• Off-label product usage: none
The problem - Silos of care
Epilepsy

2-3% of ED attendances & 1.3M bed days/year
Current best treatment is underperforming by ~25%
Misdiagnosis in >25% (syncope, dissociative...)
Annual cost of treating epilepsy in UK £2B (direct & indirect - NICE)

500,000 in the UK
1 in 131 citizens
990 deaths a year in England

365 young adults or children
400 preventable deaths

Potential savings from improvements in care:
£134M/year for England
£55M/year through reduced DLA payments
Epilepsy

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Michael
- Qualified engineer
- Early life normal
- RTA age 24 (TBI)
- Seizure onset age 30
- Witnessed GTCSz
- Increasing frequency despite Rx

365 young adults or children

400 preventable deaths
Patient Facing components and data collection
Accurate identification of 83% of GTCSz with no false positives.

Subtle motor and dialeptic seizures remain challenging.

Ongoing collection using additional sensor data.

Machine learning algorithms to be applied to larger data sets.
• Previous head injury
• LOC whilst driving
• Witnessed 2°GTCSz
• MRI – normal at 1.5T
• vEEG – right temporal focus

• Started on medication
  • Timing of changes?
  • Current dose?
  • Adherence?
  • Side effects - skin
Clinical Benefits:

- Co-contributed record
- Improve seizure freedom to ≥70%
- Real-time response to patient need
- Reduce epilepsy related deaths
- Clinical conversations documented live in record
- Flexible follow-up on basis of need
- Secure text/telephone/Skype at point of need
- Facilitates safe self-management of LTCs
Financial Benefits

- 5% ↓ ED attendances = £13k
- 5% ↓ Epilepsy admissions = £37k
- 5% ↓ Epilepsy OPAs = £21k
- 5% ↓ Epilepsy DNA's = £2k
- Recurring saving > £80k pa

... transferable technology to other LTCs
Truly Personalised Medicine

A platform for connecting patients, family, hospital teams and community staff around a shared digital record.

Information from patients and a network of trusted, close social contacts...

... using smartphones and wearable technology to record and track seizure incidents, and with contextual information...

... a channel for healthcare practitioners to communicate to the patient, friends and family.
“The aim of medicine is to prevent disease and prolong life, the ideal of medicine is to eliminate the need of a physician.”

William Mayo (1861-1939)