Syncope/T-LOC Clinics

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Syncope/T-LOC Clinics

• Absence of a systematic approach to T-LOC incurs higher health and social care costs
• Systematic approach through a dedicated service may ensure better management of T-LOC
• European Society of Cardiology 2015 Syncope Unit: Rationale and requirement
South Tees Blackout Service
James Cook University Hospital South Tees NHS Foundation Trust
Key Drivers

- Syncope Trust and Reflex anoxic Seizures (STARS)
- NICE TLOC Guidelines
- European Society of Cardiology Guidelines for the Management of Syncope
- NSF Chapter 8 Arrhythmias and Sudden Cardiac Death
- No dedicated pathway for patients experiencing blackout
- Local audit showed delayed patient pathway and over use of diagnostic testing
Audit Findings

- Costly and inappropriate investigations/Omission of important investigations
- High rates of hospitalisation (often unnecessary) with prolonged stay in hospital
- Multiple attendances to A&E
- Multiple referrals to multiple specialities
- Evidence of misdiagnosis
Traditional Pathway

- GP/A&E
- Neurology
- AAU
- Cardiology
- Neurology
- Cardiology
- GP
- Neurology
- Cardiology
Streamlined Pathway

GP/A&E/AAU – *sign-posting*

Blackout Service – Triage Nurses

Blackout – Specialist Nurse Management

Cardiology

Neurology
MDT Rapid Access Blackout Triage Clinic

• Provide rapid clinical assessment and ECG within 2 weeks of referral

• Assess and where possible diagnose the cause of blackouts

• Triage patients into high/low risk groups and ensure rapid specialist assessment

• Decrease hospitalisation of low risk patients by providing a short wait for assessment

• Use clinical assessment to determine the cause of blackouts, apply tests, treat if appropriate or redirect patients to the most appropriate specialist care promptly
The Beginning .........

- Identification of a coordinator
- Audit to examine existing pathways/process map
- Development of business case/Referral pathways
- Visits to other established services
- Liaise with key stakeholders/steering group
- Form core blackout team
South Tees Blackout Team

- Consultant Cardiologist
- Cardiac Physiologists
- Consultant Neurophysiologist
- Secretaries
- Health Care Assistants
- Epilepsy Specialist Nurse
- CRM Specialist Nurses/Nurse Consultant
Cardiac Rhythm Management (CRM)/Blackout Team

- Consultant Cardiologists
- Consultant Neurophysiologist
- CRM Specialist nurses
- Epilepsy Nurse Consultant
- CRM Nurse Consultant
- Cardiac Physiologists
- Health Care Assistants
- Administrative Assistants
- Specialist nurses – At least masters level/non medical prescribers, clinical skills, arrhythmia/syncope module, competency based in house training
South Tees Blackout Service

- Commenced in December 2010
- 6 month pilot funded by Middlesbrough, Redcar & Cleveland Primary Care Trust (PCT)
- Evaluation after the first 6 months concluded that the model was efficient and cost effective and a further 6 months were block funded
- At the end of the first 12 months a tariff was agreed
Referrals

- Accident and Emergency  52%
- Primary Care  39%
- Other  9%
South Tees Blackout Service

Did the patient have a spontaneous blackout (Transient loss of consciousness (T-LOC))?  

Yes, or uncertain

12 lead ECG with appropriate report

Abnormal

Normal

Family history of Sudden Cardiac Death (SCD) <40?

Yes

No

Is there any history of brain injury?

Yes

No

Is there significant structural heart disease?

Yes

No

Does T-LOC occur on exercise?

Yes

No

Features that strongly suggest epilepsy?

Yes

No

Features that strongly suggest Reflex Syncope/Simple Taint?

Yes

No

Recurrent Episodes?

Yes

No

Give patient relevant information and refer back to GP

Uncertainty about Diagnosis?

Refer to Blackout Triage service

Consider Falls, TIA/CVA Drug misuse and Usual Care

e.g. previous MI heart failure cardiomyopathy heart valve disease

e.g. tonic/clonic movements cyanosis lateral tongue-biting prolonged post-ictal confusion

e.g. occurs on standing, extreme palor, limb jerks, always collapse to floor, quick recovery

IF PATIENT IS CLINICALLY UNSTABLE/UNWELL ADMIT TO HOSPITAL AS PER LOCAL PROTOCOL
What happens in the blackout clinic?

- Nurse triage of all referrals
- Patients then triaged by nurses in clinic
- Same day access to Consultants
- 3 new clinic per week – 20 slots, 1 review clinic per week – 10 slots
- One stop shop offering:
  - History taking/Witness Accounts
  - Clinical examination
  - Active stands
  - ECG
  - Echocardiogram
  - Holter monitoring
  - Tilt Test (not same day)
  - EEG/MRI/CT (not same day)
Assessment Tool to exclude Red flags’—indicators of high risk of a serious adverse event, needing specialist assessment

- **Cardiac red flags**
  - Abnormal 12-lead ECG
  - Presence of structural heart disease
  - Family history of sudden cardiac death (SCD) aged <40 years
  - Blackout occurring during exercise

- **Neurological red flags**
  - History of brain injury
  - Features which strongly suggest epilepsy
  - New neurological deficit

- NB No red flags = patient at low risk of a serious adverse event

(NICE, 2010)
Is the South Tees Model Effective?
Monitoring results

- Admission rates
- Bed days
- Waiting times to be seen
- Impact on cardiology and neurology waiting times
- Time to diagnosis/treatment
- Admission rates compared to centres with no dedicated blackout service
- Patient satisfaction
Initial Results

- Comparison of admission rates for patients presenting with non-complicated syncope May 2010 - November 2011 and December 2010 - June 2011
  - Average reduction of 20 admissions per month
  - Reduction of 409 bed days over 31 week period
Multidisciplinary/multispecialty management

South Tees Blackout Service

- Specialist nurses 72%
- Neurophysiologist 25%
- Cardiologist 3%
At the first appointment in the blackout and first fit clinics 88% and 88% respectively received a diagnosis compared to 70% in the general neurology clinic.
Waiting Times

- The median waiting times for the blackout clinic 10 days
- First fit clinic 38 days
- General neurology clinic 47 days
- Cardiology 39 days
Audit of ECG/EEG in JCUH A&E/Neurology Department

• Audited against NICE guideline CG137 and SIGN Guideline 70 - EEG should only be carried out in those with a high probability of epileptic seizures – ECG should be carried out in all those with blackouts and ‘funny do’s’

• 41% of EEGs carried out were in those who do not have high probability of epileptic seizures

• ECG carried out in 53% only
Comparisons

• **Investigations**

  100% of patients seen via the blackout clinic model had ECG performed compared to 36% attending the first fit clinic and 17% attending general neurology. EEGs only carried out on patients with high probability of epileptic seizures.

• **Hospital admissions**

  In areas without access to a blackout service admissions were 100% & 55% compared to 18% in the South Tees area.
Pre blackout service – 46 year old gentleman presents to A&E with blackout

- 2001 – A&E (ECG, NAD – discharged, with no further follow up)
- 2005 – Re presents to GP with further episodes of blackout
- 2005 – GP refers to Consultant Physician (CT head and chest, ECG, bloods, CXR – NAD) advises GP to refer to Neurologist
- 2005 – GP refers to Neurology
- 2005 – Consultant Neurologist (EEG, ECG, Bloods, Tilt test) Cardiac cause suspected and referral advised. No evidence of this happening in notes.
- 2009 – Re presents to A&E following RTA after having blackout - Re referred to Neurology
- 2009 – Neurologist again advises referral to cardiology
- 2010 – GP refers to cardiology
- 2010/2011 – Seen by cardiologist who suspects cardiac cause. ECG, 7 day ambulatory ECG NAD. Implantable loop recorder (ILR) implanted
- 2011 – Ventricular pauses evident on interrogation of ILR
- 2011 - Permanent pacemaker implanted
**Post blackout service** – 66 year old gentleman presents to A&E with a blackout (2 episodes)

- February 2011 – **A&E** (ECG NAD) refer to blackout service

- February 2011 – **Blackout clinic** (triage, history taking, cardiac cause suspected - ECG, 72 hr ambulatory ECG NAD). Discussed with cardiologist and listed for ILR

- April 2011 – ILR implanted. Ventricular pauses evident on analysis

- June 2011 – **Permanent pacemaker implanted**
Pre blackout service - 26 year old female presents to GP after 2 episodes of blackout

- July 2008 – **GP** refers to Cardiology. (ECG, Tilt test, 72 hour ambulatory ECG, NAD). **Cardiologist** suggests referral to Neurology

- Nov 2008 – GP refers to **Neurology**

- Jan 2009 – **Neurology** – (EEG, CT scan, history taking, witness account). Epilepsy diagnosed. Medication commenced
Post blackout service – 47 year old gentleman presents to A&E with blackout

- Feb 2013 – A&E. Blackout. (ECG, NAD). Referred to blackout service

- March 2013 – Blackout clinic (Triage, history taking, first hand witness account obtained. Epilepsy suspected). Liaise with Consultant Neurophysiologist for same day assessment

- Consultant Neurophysiologist – Epilepsy confirmed, anti-epileptic drugs commenced. Lifestyle advice given
Benefits of a collaborative approach

• Clear referral pathway
• One point of access
• Change in culture within Neurology/Cardiology in terms of the management of blackouts
• Less need for hospital admission
• Improved management of patients in A&E/AAU
• Reduced waiting times
• Appropriate & focused investigations
• High rate of diagnosis at first appointment
• High levels of patient satisfaction
• Strong links with A&E/MAU
• Closer liaison with elderly care/falls service
Further Development ....

• Expand service to cover North Yorkshire

• Nurse led implantable loop recorders (ILR) implant and follow up ....
Implantable Loop Recorder (ILR)
Nurse Led ILR Implant and Follow up

- Moved from catheter laboratory to clean room
- Scheduled implant and explant list (weekly)
- Competency based training programme
- Daily follow up via remote monitoring
- Telephone review clinics and 12 monthly face to face
ILR Results

- Streamlined pathway
- Daily review of transmission leading to prompt diagnosis
- Implant to diagnosis 270 to 32 days
- Diagnosis to upgraded device 31 to 22 days
- Waiting times reduced from 49 to 17 days
- Length of stay reduced from 5 hours to 1.5
- Better utilisation of catheter laboratory slots saving approximately 190 hours per annum
Blacked out? Come to South Tees!