Fracture Liaison Service Database (FLS-DB)

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Introduction to the FLS-DB Project

Our ultimate goal – to ensure that every patient with a fragility fracture is assessed and treated to minimise the risk of another fracture

– Osteoporosis
– Falls risk

‘FLS’ is the shorthand for any clinical system designed to ensure that this happens

The FLS-DB aims to improve systems by measuring the success of what is currently in place

– Following the example of the NHFD
Employment of a dedicated coordinator in the fracture service is the most effective system.
NEW FRACTURE

INPATIENT ORTHO/TRAUMA WARD

OUTPATIENT FRACTURE CLINIC

Falls Risk Assessment

Exercise Classes

Rx FOR FRACTURE 2Y PREVENTION

Education Programme

Prescription Issued By GP

Fracture Liaison Nurse (FLN)
Secondary prevention

Secondary prevention is more effective than primary prevention
A systems approach is needed, where capture of patients is automatic
When it is done vigorously, it is *cost-saving*
Cost-saving

Fracture liaison services for the evaluation and management of patients with osteoporotic fracture: a cost-effectiveness evaluation based on data collected over 8 years of service provision

A. R. McLellan · S. E. Wołowacz · E. A. Zimovetz · S. M. Beard · S. Lock · L. McCrink · F. Adekunle · D. Roberts

Per 1000 fragility fracture patients, 18 fractures (11 hip) prevented – net saving £21,000
FLS-DB aim and questions

Aim:

- to provide comparative information on the provision of secondary prevention for patients with non-hip fragility fractures.

Questions:

- What proportion of non-hip fragility fracture patients are **assessed** for (i) osteoporosis and (ii) falls risk?
- What proportion of patients are **treated** for osteoporosis?
- What proportion of patients are **treated** for falls risk?
- What proportion of patients have a **subsequent fracture**?
- What proportion of patients comply and persist with treatment?
The reasonable hope is that continuous feedback to the providers of secondary prevention, comparing their performance with the national, will encourage and empower them to drive up standards.

The challenge is that, unlike acute hip fracture care, secondary prevention takes place in both primary and secondary care.

Data from these two disparate settings therefore needs to be combined at individual patient level.
FLS-DB feasibility questions

1. Can we identify the population who sustain a fracture in areas covered by Clinical Commissioning Groups (or Primary Care Trusts) using the Hospital Episode Statistics (HES), A&E and outpatient databases?

2. Can we identify the population who sustain a fracture using GP electronic records?

3. Can we identify patients who are assessed and treated for osteoporosis and falls risk using GP electronic records?

4. Can we identify and match records for the same fracture from secondary care-based Fracture Liaison Services (FLS) and GP databases?
Patient paths and data flows

- GP
- GP IT system
- # ward
- A+E
- Inpatient
- # clinic
- FLS clinic
- GP FLS-DB
- GPES
- FLS-DB
- Web entry
- FLS-DB

Royal College of Physicians
Setting higher standards
Hospital A&E and outpatient data – analysis currently underway

A&E extract: all attendances by over 50s in 1 year (5M)
Outpatients extract: over 50s attending T&O clinic in 1 year (4.5M)

Difficulty – diagnosis fields are not well used (60% complete in A&E, just 3% in outpatients)!

Challenge – to develop algorithm for identifying likely fracture without using diagnosis fields, eg, “Episode of care for someone seen in T&O outpatient clinic within 2 weeks of an A&E attendance”.

Test this algorithm using consistency checks, data for NHS trusts in which diagnosis fields are well used, and external data sources.
# Data Completeness for Relevant Fields in A&E Database

<table>
<thead>
<tr>
<th>Field name in HES</th>
<th>Definition (missing field)</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance category</td>
<td>Initial or follow-up attendance within a particular A&amp;E Department (missing = “9”)</td>
<td>5,011,691</td>
<td>99.3</td>
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<tr>
<td>Patient group</td>
<td>Reason for an A&amp;E attendance (missing = “99”)</td>
<td>4,815,397</td>
<td>95.4</td>
</tr>
<tr>
<td>Source of referral</td>
<td>Source of referral for A&amp;E attendance (missing = “99”)</td>
<td>5,004,376</td>
<td>99.2</td>
</tr>
<tr>
<td>Attendance disposal</td>
<td>Way in which A&amp;E attendance ended (missing = “99”)</td>
<td>5,036,487</td>
<td>99.8</td>
</tr>
<tr>
<td>Primary diagnosis</td>
<td>Diagnosis description at 2-character level covering the diagnosis condition</td>
<td>3,035,866</td>
<td>60.2</td>
</tr>
<tr>
<td>First investigation</td>
<td>Description of investigation (missing/other = “99”)</td>
<td>4,367,718</td>
<td>86.6</td>
</tr>
<tr>
<td>First treatment</td>
<td>Description of treatment (missing-none = “99”)</td>
<td>3,301,266</td>
<td>65.5</td>
</tr>
</tbody>
</table>
Data completeness for fields in outpatient database

<table>
<thead>
<tr>
<th>Field name in HES</th>
<th>Definition (missing field)</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>First attendance</td>
<td>Whether attendance was the first or follow-up appt (not known = “X”)</td>
<td>4,527,100</td>
<td>99.9</td>
</tr>
<tr>
<td>Source of referral</td>
<td>Source of referral of each consultant outpatient episode (not known = “99”)</td>
<td>4,525,553</td>
<td>99.8</td>
</tr>
<tr>
<td>Outcome</td>
<td>Outcome of attendance eg, discharged (not known = “9”)</td>
<td>4,391,726</td>
<td>96.9</td>
</tr>
<tr>
<td>Primary diagnosis</td>
<td>First 3 characters of valid ICD-10 diagnosis code (not known = “R69”, general = “R68”,)</td>
<td>48,837</td>
<td>1.8</td>
</tr>
</tbody>
</table>
GP & FLS data - planned analysis

- Assess data quality
- Create algorithms (procedures for combining data fields) to identify fragility fractures
- Estimate number of fractures in over-50s captured within GP/FLS records by CCG/PCT
- Estimate number of patients who had a DXA scan, therapy for osteoporosis, and assessment of falls risk.
## Timeline

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Webtool goes live</td>
<td>1 June 2013</td>
</tr>
<tr>
<td>Secondary care data collection period</td>
<td>1 June 2013 – 30 Sep 2013</td>
</tr>
<tr>
<td>Primary care data extraction</td>
<td>Complete by 30 Sep 2013</td>
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<tr>
<td>Analysis</td>
<td>October-November 2013</td>
</tr>
<tr>
<td>Feasibility study report</td>
<td>January 2014</td>
</tr>
<tr>
<td>Business case for further roll out</td>
<td>January 2014</td>
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<tr>
<td>Public report</td>
<td>May 2014</td>
</tr>
<tr>
<td>Next phase (we hope)</td>
<td>Apr 2014 onwards</td>
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Next phase

- Rolling out FLS services and rolling out FLS-DB implementation amount to the same thing
- Regional meetings based on FLS-DB data are key to raising awareness and pressure for investment in FLS
- FLS Champions – will be the drivers
- Public reports will raise awareness more generally