



Measuring quality along care pathways

Sarah Jonas, Clinical Fellow, The King's Fund

Veena Raleigh, Senior Fellow, The King's Fund

Catherine Foot, Senior Fellow, The King's Fund

James Mountford, Director of Clinical Quality, UCL Partners



Rationale

- › The NHS Commissioning Board will assess the performance of clinical commissioning groups (CCGs) on the basis of outcomes, as defined in the Commissioning Outcomes Framework
- › This requires CCGs to monitor care processes and intermediate outcomes along the care pathways that drive those outcomes
- › Measuring quality along pathways is especially important in the context of long-term conditions, that typically have many stages, requiring care over time and in different settings. The rising prevalence of long-term conditions is a growing challenge for the NHS
- › Measuring quality along care pathways is therefore critical for enabling CCGs to monitor progress in improving outcomes

Contents

| Section | Slide no. |
|--|-----------|
| 1. What we mean by measuring quality along care pathways | 4 |
| 2. Reasons for measuring quality along care pathways | 6 |
| 3. What to measure | 10 |
| 4. How to build up sets of care pathway measures | 14 |
| - Bringing existing data sets together to simulate a pathway | 16 |
| - Data linkage | 21 |
| - Collecting new data for constructing a care pathway | 27 |
| 5. A case study from UCL Partners: <i>London Cancer</i> | 28 |
| 6. Challenges to measuring quality along care pathways | 32 |
| 7. Conclusions | 34 |

1. What we mean by measuring quality along care pathways



Defining quality measurement along a care pathway

- › Defined broadly as ‘a set of quality measures that together describe a care pathway for a particular population or group of patients’
- › Differs from ‘clinical pathways’, which generally refer to a standardised set of actions aiming to optimise care for a particular clinical problem, in line with evidence or guidelines

2. Reasons for measuring quality along care pathways



The policy perspective

- › The NHS Outcomes Framework is complemented by outcomes frameworks for public health and social care
- › The NHS Outcomes Framework 2012/13 highlights the government's intention to align outcomes across the three outcomes frameworks, with an emphasis on collaboration and integration
- › The Department of Health's Information Strategy aims to:
 - › promote inter-operability of information systems locally
 - › encourage record linkage locally across different care settings
 - › increase record linkage of national data sets by the Information Centre
 - › make information available to drive integrated care across health and social care, within and between organisations

'Information will move freely through the health and care system'
- › These developments will support quality measurement along care pathways



Developments in measuring quality

- › Quality measurement has focused mainly on measuring isolated aspects of care in specific settings
- › Stand-alone indicators do not assess quality holistically for patients with a given condition and are therefore inadequate for understanding and improving performance at a system level – especially for long-term conditions
- › The growing prevalence of long-term conditions and increased need for integrated care has led the United Kingdom and many developed countries to move towards measuring quality along pathways



Uses of measuring quality along care pathways

- › Planning and developing health care services
- › Improving the co-ordination and integration of care
- › Improving the management of chronic conditions
- › Improving the quality of care, including from a patient perspective
- › Understanding how quality in one part of the health care system impacts on other health care services
- › Lowering costs and improving productivity
- › Commissioning care packages from a consortium of providers, or on the 'accountable care organisation' model, designed to provide integrated care

3. What to measure



Example stages in a pathway

- › Population health and wellbeing, health prevention and promotion (primary prevention)
- › Diagnosis, referral and investigation
- › Control of risk factors
- › Treatment (primary/community/secondary care as appropriate)
- › Recovery and rehabilitation
- › Support and follow-up
- › Secondary prevention
- › Palliative and end-of-life care



Example environments/care settings

- › Population level
- › Primary and community care
- › Urgent, out-of-hours and emergency care
- › Hospital care (emergency and planned)
- › Tertiary and specialist care
- › Mental health care
- › Hospice and other palliative care
- › Social care
- › Domiciliary/home care

NHS Outcomes Framework: domains

| Outcome domains | Quality domains |
|---|------------------------|
| 1. Preventing premature death | Clinical effectiveness |
| 2. Enhancing quality of life for people with long-term conditions | |
| 3. Helping recovery from ill-health and injury | |
| 4. Ensuring a positive experience of care | Patient experience |
| 5. Treatment in a caring environment and protection from avoidable harm | Safety |

Commissioning
Outcomes
Framework
NICE quality
standards

4. How to build sets of care pathway measures



Three main routes to pathway measures

- › Indicators from available national and/or local data sets can be selected and compiled to simulate a pathway
- › Different sets of patient records can be linked together for analysis. This can be done locally, or centrally by linkage of national data sets by an authorised agency
- › New data can be collected to fill the gaps in available data, to measure quality more comprehensively along pathways



Bringing existing data sets together to simulate a pathway

Existing data sets include:

- › population-based data: eg, prevalence of risk factors, incidence/prevalence of disease, mortality data by cause of death, cancer registration data, use of primary and secondary care services, programme budgeting data
- › primary care data: eg, Quality and Outcomes Framework, Hospital Episode Statistics (HES), prescribing, data in GP computer systems, screening , immunisation
- › secondary care data: HES (data on inpatients, outpatients, A&E patients)
- › mental health data: eg, Mental Health Minimum Data Set
- › national clinical audit data: several data sets (held by the Information Centre and Healthcare Quality Improvement Programme)
- › patient experience data: General Practice Patient Surveys, patient experience surveys in acute/mental health trusts etc
- › patient-reported outcome measures (PROMs) data: currently available for four procedures: hip and knee replacement, hernia, cataract



London Health programmes

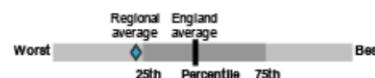
- › London Health Programmes have developed a series of pathway intelligence profiles for London PCTs (stroke) and local authorities (chronic obstructive pulmonary disease and maternity)
- › The aim is to provide information to support policy-makers and commissioners to plan and deliver services, and for benchmarking to identify areas of strength and areas where improvement is needed

COPD pathway profile: Southwark

Key:

- Significantly better than England average
- Not significantly different from England average
- Significantly worse than England average
- No significance can be calculated

England Key:



| Domain | Indicator | Local Number | Local Value | Lon Avg | Eng Avg | Eng Worst | England Range | Eng Best |
|------------------------------|---|--------------|-------------|---------|---------|-----------|---------------|----------|
| Risk Factors | 1 Adults who smoke | n/a | 26.9 | 20.8 | 22.2 | 35.2 | | 10.2 |
| | 2 Population aged 35yrs and over | 129,423 | 45.3 | 49.6 | 56.2 | 70.4 | | 37.8 |
| | 3 Population aged 75yrs and over | 12,278 | 4.3 | 5.6 | 7.8 | 16.0 | | 3.4 |
| General Practice: diagnosis | 4 COPD prevalence, recorded* | 3,649 | 1.2 | 1.0 | 1.6 | 3.3 | | 0.7 |
| | 5 COPD prevalence, modelled | 10,325 | 4.4 | 3.9 | 3.6 | 6.1 | | 1.9 |
| | 6 COPD prevalence, modelled v. recorded* | 4.4 | 3.8 | 3.9 | 2.4 | 6.2 | | 1.3 |
| | 7 Asthma prevalence, recorded* | 12,790 | 4.0 | 4.8 | 5.9 | 7.1 | | 3.5 |
| | 8 COPD diagnosis confirmed by post bronchodilator spirometry* | 594 | 88.3 | 89.4 | 90.3 | 82.8 | | 94.8 |
| | 9 Exception rate for COPD indicators* | 1,699 | 0.14 | 0.11 | 0.13 | 0.20 | | 0.07 |
| General Practice: treatment | 10 Adults with COPD who smoke | | | | | | | |
| | 11 Patients with long-term conditions with smoking status recorded* | 44,661 | 93.7 | 95.3 | 95.2 | 93.3 | | 97.4 |
| | 12 Patients with long-term conditions offered stop smoking advice* | 8,736 | 92.0 | 92.7 | 92.8 | 88.7 | | 96.7 |
| | 13 Exception rate for smoking indicators* | 511 | 0.89 | 0.77 | 0.71 | 1.40 | | 0.36 |
| | 14 Successful smoking quitters at 4 weeks, CO validated* | 973 | 417 | 550 | 614 | 51 | | 1,455 |
| | 15 Prescribed nicotine replacement therapy (NRT)* | 7,133 | 2,520 | 2,184 | 2,997 | 143 | | 10,887 |
| | 16 Prescribed varenicline* | 3,961 | 1,400 | 984 | 1,704 | 275 | | 5,221 |
| | 17 Eligible COPD patients offered pulmonary rehabilitation | | | | | | | |
| Secondary Care | 18 COPD patients with medical review in last 15 months* | 2,710 | 85.7 | 89.6 | 89.9 | 80.7 | | 93.9 |
| | 19 Length of stay, emergency inpatient COPD admissions* | 3,230 | 5.9 | 6.7 | 6.8 | 9.6 | | 3.2 |
| | 20 Emergency admissions for COPD, overall* | 559 | 3.3 | 1.9 | 1.8 | 4.9 | | 0.9 |
| | 21 Emergency admissions for COPD, COPD registered patients* | 470 | 12.9 | 13.6 | 12.5 | 17.9 | | 9.6 |
| | 22 Emergency readmissions within 28 days, overall* | 23 | 22.1 | 23.3 | 21.6 | 44.2 | | 9.9 |
| Mortality & End of Life Care | 23 Emergency readmissions within 90 days, COPD admitted patients | 131 | 41.6 | 40.2 | 33.9 | 63.8 | | 7.5 |
| | 24 Deaths from COPD, all ages | 291 | 38.9 | 25.4 | 26.2 | 48.7 | | 11.9 |
| | 25 Deaths from COPD, <75yrs | 112 | 21.0 | 11.4 | 11.8 | 27.5 | | 3.4 |
| | 26 Years of life lost due to mortality from COPD | 112 | 21.5 | 9.8 | 10.5 | 26.0 | | 1.2 |
| | 27 Deaths with any mention of respiratory disease as cause | 1,694 | 37.9 | 35.1 | 33.9 | 41.1 | | 25.7 |
| | 28 Respiratory deaths at own residence | 127 | 21.2 | 12.9 | 13.7 | 7.5 | | 29.1 |
| Spend | 29 Cost of oxygen prescribing | | | | | | | |
| | 30 Overall spend on obstructive airways disease* | 3,690,000 | 10.7 | 10.9 | 13.1 | 24.5 | | 6.4 |
| | 31 Primary care spend on obstructive airways disease* | n/a | n/a | 4.1 | 5.4 | 13.8 | | 0.8 |
| | 32 Secondary care spend on obstructive airways disease* | 3,586,000 | 11.9 | 6.8 | 7.6 | 16.4 | | 1.8 |

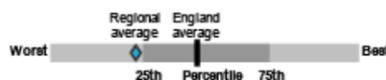
Source: NHS London Health Programmes. © Crown Copyright 2011.

Stroke pathway profile: Southwark

Key:

- Significantly better than England average
- Not significantly different from England average
- Significantly worse than England average
- No significance can be calculated

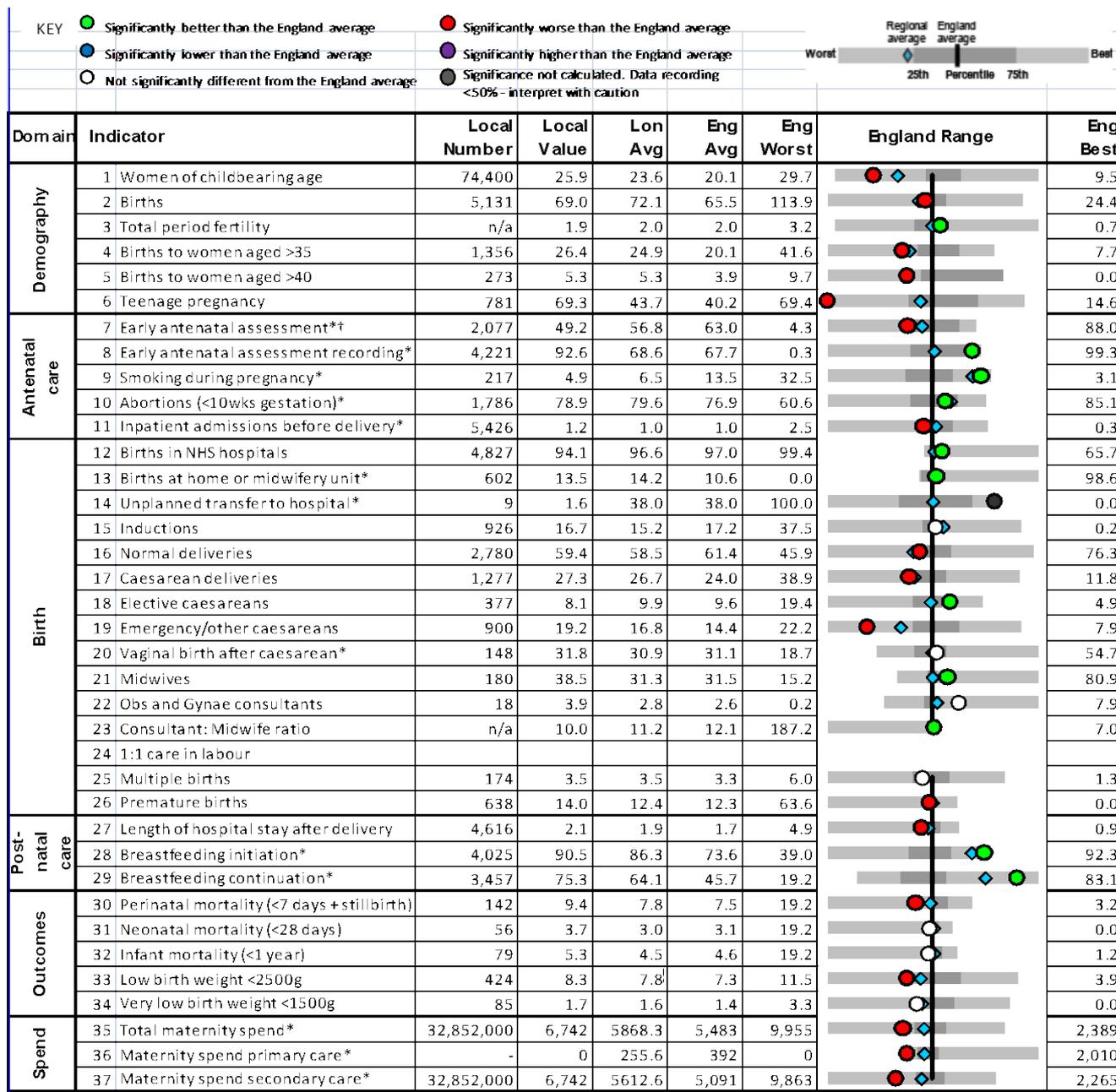
England Key:



| Domain | Indicator | Local Number | Local Value | Eng Avg | Eng Worst | England Range | Eng Best |
|----------------|---|--------------|-------------|---------|-----------|---------------|----------|
| Risk Factors | 1 Hypertension prevalence | 29,390 | 9.8 | 12.8 | 16.2 | | 7.7 |
| | 2 Adults w ho smoke | n/a | 26.9 | 22.2 | 35.2 | | 10.2 |
| | 3 Binge drinking adults | n/a | 18.4 | 20.1 | 33.2 | | 4.6 |
| | 4 Obese adults | n/a | 21.0 | 24.2 | 32.8 | | 13.2 |
| Primary Care | 5 Modelled prevalence of stroke/TIA, male | 2,631 | 2.2 | 2.5 | 3.7 | | 1.4 |
| | 6 Modelled prevalence of stroke/TIA, female | 2,591 | 2.3 | 2.5 | 3.7 | | 1.4 |
| | 7 Modelled prevalence of Stroke/TIA, persons | 5,222 | 2.2 | 2.5 | 3.7 | | 1.4 |
| | 8 Stroke/TIA prevalence | 2,595 | 0.8 | 1.7 | 2.4 | | 0.8 |
| | 9 Blood pressure recorded in last 15 months | 2,447 | 96.5 | 96.9 | 94.8 | | 98.4 |
| | 10 Blood pressure reading 150/90 mmHg or less | 2,091 | 85.1 | 87.9 | 83.7 | | 90.3 |
| | 11 Cholesterol recorded in last 15 months | 2,212 | 90.3 | 91.6 | 86.2 | | 94.5 |
| | 12 Cholesterol readings 5nmol/L or less | 1,730 | 75.0 | 77.0 | 69.9 | | 83.0 |
| | 13 Immunisation for influenza | 1,821 | 87.0 | 89.3 | 83.9 | | 93.1 |
| | 14 Anti-platelet / anti-coagulant therapy | 1,245 | 94.4 | 94.2 | 92.1 | | 96.5 |
| | 15 New patients referred for further investigation | 207 | 93.2 | 91.3 | 80.0 | | 96.5 |
| Secondary Care | 16 Emergency hospital admissions for stroke, male | 98 | 137.1 | 134.5 | 251.4 | | 41.5 |
| | 17 Emergency hospital admissions for stroke, female | 94 | 96.1 | 101.9 | 168.3 | | 19.3 |
| | 18 Emergency hospital admissions for stroke, persons | 192 | 113.5 | 115.4 | 192.6 | | 36.3 |
| | 19 Emergency hospital readmissions for stroke, persons | 17 | 10.9 | 10.8 | 23.7 | | 5.1 |
| | 20 Return to usual place of residence after stroke, male | 75 | 67.3 | 59.0 | 35.0 | | 72.1 |
| | 21 Return to usual place of residence after stroke, female | 65 | 77.1 | 56.3 | 23.5 | | 77.1 |
| | 22 Return to usual place of residence after stroke, persons | 140 | 71.7 | 57.6 | 29.9 | | 71.7 |
| | 23 Stroke admissions w ho spent 90% of time on stroke unit | 201 | 38.4 | 60.2 | 23.3 | | 97.1 |
| | 24 TIA patients treated w ithin 24 hours | 27 | 44.4 | 51.2 | 1.1 | | 100.0 |
| Mortality | 25 Mortality from stroke all ages, male | 148 | 47.0 | 48.6 | 69.9 | | 26.8 |
| | 26 Mortality from stroke all ages, female | 166 | 32.8 | 45.5 | 60.0 | | 21.2 |
| | 27 Mortality from stroke all ages, persons | 314 | 39.2 | 47.3 | 63.1 | | 23.7 |
| | 28 Mortality from stroke age <75yrs, male | 59 | 22.3 | 15.7 | 32.1 | | 9.8 |
| | 29 Mortality from stroke age <75yrs, female | 39 | 13.0 | 11.9 | 21.0 | | 6.6 |
| | 30 Mortality from stroke age <75yrs, persons | 98 | 17.4 | 13.7 | 25.6 | | 8.4 |
| | 31 Years of life lost due to mortality from stroke, male | 59 | 23.5 | 18.6 | 47.4 | | 9.5 |
| | 32 Years of life lost due to mortality from stroke, female | 39 | 15.0 | 14.5 | 28.1 | | 6.1 |
| | 33 Years of life lost due to mortality from stroke, persons | 98 | 19.1 | 16.5 | 35.8 | | 8.6 |
| | 34 Death in 30 days of emergency stroke admission, male | 16 | 21,158 | 21,033 | 33,568 | | 11,341 |
| | 35 Death in 30 days of emergency stroke admission, female | 20 | 19,943 | 24,026 | 34,332 | | 9,574 |
| | 36 Death in 30 days of emergency stroke admission, persons | 36 | 20,430 | 22,746 | 31,378 | | 11,664 |
| Spend | 37 Overall spend on cerebrovascular disease | 4,434,000 | 14.5 | 19.4 | 41.9 | | 2.4 |
| | 38 Primary care spend on cerebrovascular disease | 174,000 | 0.6 | 2.5 | 0.2 | | 15.3 |
| | 39 Secondary care spend on cerebrovascular disease | 4,260,000 | 13.9 | 16.9 | 40.4 | | 1.1 |

Source: NHS London Health Programmes. © Crown Copyright 2011.

Maternity pathway profile: Southwark



Source: NHS London Health Programmes. © Crown Copyright 2011.



Data linkage

- › Linkage across data sets can enable analyses that would not otherwise be possible. It is suitable for data sets comprised of individual patient records

- › Linkage is often done using NHS number and/or other patient identifiers; the Information Strategy stipulates that all health and social care providers should record these to allow this

- › Linkage is increasingly being undertaken with national data sets. Examples include:
 - › HES with ONS mortality records from death registration records
 - › HES with the patient-reported outcome measures data for selected procedures
 - › cancer registration data with HES
 - › data from national clinical audits such as Myocardial Ischaemia National Audit Project, to HES and ONS mortality records

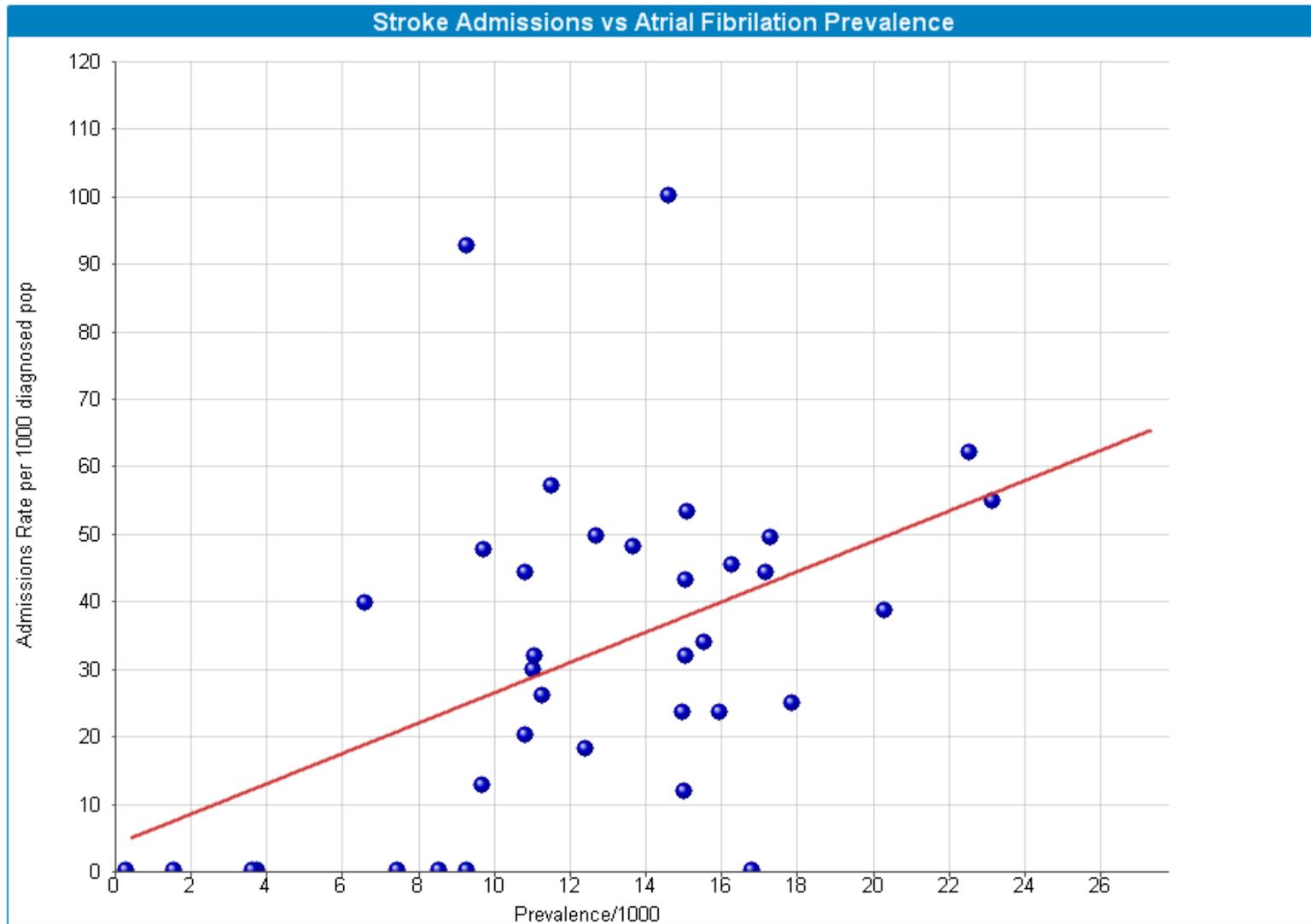
- › Information governance issues associated with linkage must be adequately addressed, and appropriate data protection safeguards put in place



RAIDR: linking primary and secondary care

- › Reporting Analysis and Intelligence Delivering Results (RAIDR) is a business intelligence tool for use by commissioners and practices in NHS North of Tyne and Durham and Darlington
- › RAIDR links real-time primary care and secondary care data to enable analysis of patient care pathways and events for different conditions across different settings (eg, primary care, inpatient, outpatient, A&E). Comparative data is available by practice, and enables drilldown to individual patients
- › RAIDR provides health care professionals in commissioning and primary care with a single portal for information that integrates multiple stand-alone data sources into graphical dashboards that users can drill down into for more information

RAIDR: Non-elective stroke admissions for atrial fibrillation patients





NW London Integrated Care Programme

- › The programme aims to provide integrated care to 750,000 diabetic and elderly patients
- › Data from primary care, outpatients, A&E, inpatients, mental health, community services and social care is linked using NHS number; can be used by clinicians, providers and commissioners
- › The programme builds capability for primary, community, hospital and social care services to work collaboratively to support people at home, so reducing unnecessary hospital stays
- › Launched in 2011, it is clinically led by GPs, hospital doctors and community care professionals, and involves a partnership between NHS organisations, local authorities and charities. Boundaries between providers are lifted so they can work as a team, allowing patients to receive the right treatment, in the right place at the right time

NW London ICP: performance dashboard

Performance Management Metrics

| Financial Impact | Operations |
|---|---|
| <ul style="list-style-type: none">Total number of emergency admissionsTotal number of A&E attendancesTotal number of UCC attendancesTotal number of emergency inpatient days | <ul style="list-style-type: none">Patients on care planAdherence to care planAverage length of stay <hr/> <ul style="list-style-type: none">Quality of care planningCommunity nursing hours per patientBed occupancy rate |
| Quality | Staff |
| <ul style="list-style-type: none">Number of acute re-admissionsNumber of emergency admissionsControl measuresLevel of community, social and mental health care <hr/> <ul style="list-style-type: none">Reduction in long-term careWaiting lists for non-acute careHard outcomes (including PROMs)Patient experience metrics (including PREMs) | <ul style="list-style-type: none">Attendance at multi-disciplinary groupsStaff satisfactionTeam effectivenessSkills and capabilities |
| Quarterly audit | |

 = Scorecard

 = Quarterly audit



Torbay Care Trust

- › Torbay Care Trust brings together commissioning and provision of adult social care and community health services
- › The Trust records NHS number for users of social care services and uses this to link health and social care records. It has linked hospital inpatient, outpatient and A&E records with community services activity and adult social care services. It is now linking with GP practice records also
- › Integrating health and social care information sources enables individual patients, pathways or services, and the associated costs, to be tracked over time
- › The information has been used to support patients at home and reduce hospital bed use, emergency bed days, delayed transfers of care and costly care home placements



Collecting new data for constructing a care pathway

- › Routinely available data sets are not always comprehensive enough to construct a profile of performance along a whole care pathway
- › Data about acute episodes of care is often readily available, but information about performance at either end of the care pathway is less so
- › Professionally led initiatives – national and local – can drive the collection of additional data as needed
- › National clinical audits, such as those co-ordinated by the Healthcare Quality Improvement Partnership (HQIP), are examples of data sets developed by health care professionals



5. A case study from UCL Partners: London Cancer



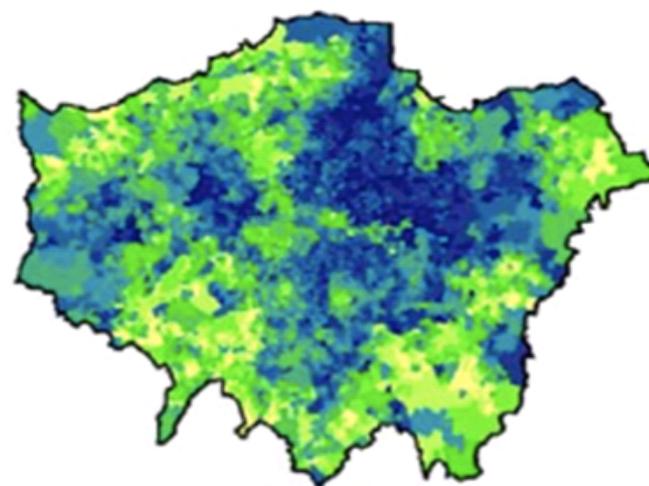
London Cancer

- › London Cancer is an integrated cancer system for North Central & North East London and West Essex. It designs an integrated care pathway for each cancer, to drive improvements in patient experience and outcomes, with associated metrics on:
 - › clinical outcomes
 - › patient-reported outcomes
 - › patient experience
- › Based on information about existing good practice, published guidance and local priorities, care pathway measures were developed in five phases:
 - › specialist clinical development
 - › consultation with patients
 - › engaging with commissioners
 - › bringing partners together from across the cancer community
 - › consolidation of the measures, specification of the definitions, and construction of a scorecard for each cancer pathway

Achieving earlier diagnosis of cancer

– addressing variation in London

1 year survival



Deprivation index:  most deprived
 least deprived

London Cancer

| Care pathway measures for brain and other central nervous system tumours | |
|---|--|
| Pathway stage | Sample indicators |
| Presentation | Patients diagnosed on emergency presentation Patients seen <2 weeks of urgent referral |
| Diagnostics | Diagnostic surgery <14 days of diagnosis Treatment <31 days of decision to treat |
| Multidisciplinary team | Patients finding it easy to contact their key worker |
| Treatment <ul style="list-style-type: none"> • surgery • radiotherapy • chemotherapy | Complication rates, 30 day survival rates Treatment delivered <45 minutes from home Patients admitted as an emergency during course of treatment |
| Follow-up | Patients undergoing holistic needs assessment |
| Survival | 1, 2, 5 year survival rates |
| End of life | Patients who die in their preferred place of death |
| System | Patients and carers given clear information during pathway stages |

6. Challenges to measuring along care pathways



Challenges

- › Data gaps remain
- › Information governance must be robust when personal information moves across organisations or is used for record linkage
- › Measurement across institutional boundaries requires acceptance of joint responsibility, attribution, accountability and new ways of working
- › Focusing on particular conditions will not capture issues related to co-morbidities and multi-morbidities
- › Development of care pathway measures will need to be an incremental process, determined by local priorities and data availability and information developments

7. Conclusions



Conclusions

- › Measuring quality along care pathways has the potential to improve quality and outcomes, and reduce costs – especially for patients with chronic conditions and multiple morbidities
- › The development and use of quality measures along care pathways can also support CCGs in commissioning integrated care packages from a range of local providers
- › CCGs will need to demonstrate that they are working with local partners to improve the continuity, co-ordination and integration of care across services and providers. Care pathway measures can help with this. Joint commissioning and health and wellbeing board strategies provide a basis for identifying priorities and taking this forward
- › Currently available data sets offer considerable potential for such measurement
- › Information developments in the pipeline – such as increased use of record linkage, wider availability of clinical audit data, improved information flows across providers and services, more data transparency – will improve the prospects for measuring quality along care pathways