Learning Health Systems

“Every patient contact is an opportunity for learning...”

John Robson; GP, Reader QMUL
Clinical Effectiveness Group

STP: Seven CCGs:
Newham, Tower Hamlets, City & Hackney, Waltham Forest + Barking & Dagenham, Redbridge, Havering

Pop: 2M
250 general practices: 1000+ GPs.
Welcome to East London
East London Diabetes belt

1 in 10 have T2 diabetes
Our journey

High performing CCGs despite extraordinary challenges

A decade ahead of similarly disadvantaged areas

Work with diverse organisations
Providers, researchers, LA, public health
Learning Health System is built on.....

- Trust
- Reciprocity
- Clinical focus
- BI and research

Digital infrastructure essential component

Friedman; Wachter Review 2016
Our learning health system

Practice teams

RAG chart showing practice current performance

Consultant Diabetes

Guideline
Clinically + academically connected

• Staff ~ 30 funded by CCGs and research
• University based, AHSN/UCLP connected
• Clinical connect to 2M – full STP footprint
• Most successful QI in UK QOF
• Public Health and Commissioning reports
• Research Data linkage
• Discovery – links to integrated hospital and GP data
East London Practices – Exceptional QOF success:

C&H and TH 1st, 2nd in 25% QOF metrics; Newham top 10%

C&H 2013
21st COPD FEV1
41st AF anticoagulated
148th Diabetes BP
181st Diabetes chol

C&H 2014
1st AF anticoagulated *
1st Diabetes foot exam
2nd CHD BP
2nd Stroke BP
* with exceptions

C&H 2015
1st BP target CHD, Stroke, PAD, CKD
1st AF anticoagulated (with exceptions)
1st COPD x spiro, MRC, FEV1
1st Asthma review
1st Diabetes exam
2nd Diabetes education
2nd Dementia review
3rd Hptn BP
3rd Diabetes BP

C&H 2016
1st AF Anticoagulated (with exceptions)
1st CHD BP
1st HYPTN BP
1st PVD BP
1st Stroke BP
1st Asthma 3Q
1st COPD Spirom
1st COPD MRC
1st COPD FEV1
1st Diab BP
1st Diab exam
1st Smoking advice
2nd Diab Chol
2nd Dementia
NE and NC STPs

City and Hackney CCG
Ranked 1\textsuperscript{st} or 2\textsuperscript{nd} (out of 194 CCGs in England)
in 11 (42\%) out of the 26 clinical attainment measures in QOF

Ranked in the Top 20 nationally (of 26 clinical attainments)
Camden, Newham, Barking and Dagenham =11
Redbridge = 9
Tower Hamlets= 6
Enfield = 3  Waltham Forest/Havering = 2  Barnet =1
East London CCGs – Highest /capita spend all CCGs in England
High intensity statins for CVD

Items for Atorvastatin Tab 40mg + Atorvastatin Tab 80mg vs Lipid-Regulating Drugs by NHS CITY AND HACKNEY CCG + NHS TOWER HAMLETS CCG

From OpenPrescribing
CHD BP <150/90mmHg
QOF 2015 All CCGs in England
## Kaiser Permanente S. California. Vs East London

2015 Top 10% USA

2015 HEDIS vs QOF data without exceptions

<table>
<thead>
<tr>
<th></th>
<th>Kaiser</th>
<th>Tower Hamlets</th>
<th>C&amp;Hackney</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes HbA1c &lt;9%</td>
<td>76%</td>
<td>80%</td>
<td>81%</td>
</tr>
<tr>
<td>COPD Spirometry</td>
<td>81%</td>
<td>82%</td>
<td>89%</td>
</tr>
<tr>
<td>Child imms 2yrs</td>
<td>89%</td>
<td>94%</td>
<td>90%</td>
</tr>
</tbody>
</table>
## Improvement Tower Hamlets 2015-16

<table>
<thead>
<tr>
<th>Tower Hamlets</th>
<th>Q1 2015</th>
<th>Q3 2016</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;75 CVD or diabetes high intensity statin</td>
<td>33.8%</td>
<td>42.3%</td>
<td>+28%</td>
</tr>
<tr>
<td>LAA Insulin T2 D</td>
<td>4.7%</td>
<td>4.1%</td>
<td>- 11%</td>
</tr>
<tr>
<td>CVD on long term NSAIDs</td>
<td>2.7%</td>
<td>2.2%</td>
<td>- 18%</td>
</tr>
<tr>
<td>cephalosporin/quinolone/cephalosporin (as % all Antibiotics)</td>
<td>17.5%</td>
<td>9.7%</td>
<td>- 45%</td>
</tr>
</tbody>
</table>
PULSE CHECKS > 65 years

Waltham Forest 2016

Newham 2016
CKD eGFR surveillance
Public health use of practice level data

Figure X: Recorded smoking prevalence by GP practice and Neighbourhood (aged 20 plus; CEG 2017)

Figure 30: Prevalence of Type 2 Diabetes in City and Hackney patients by migration status (aged 20+, 2017)

Source: Clinical Effectiveness Group
Achieving successful improvement

It’s a system not a plug-in!
**Capable**
- Evidence
- Stakeholders
- Consensus
- Guidance and KPIs
- Education

**Actionable**
- IT support
- On screen prompts
- Script switch
- Trigger tools
- Patient recall and review lists

**Motivated**
- Financial targets
- Dashboards
- Peer performance

[Image of ducks representing Learning]

**Clinical Effectiveness Group (CEG)**
**Key messages**

- People with atrial fibrillation on aspirin, clopidogrel or no antithrombotic medication should be reviewed to assess suitability of anticoagulation.

- Warfarin or new oral anticoagulants may be suitable after an informed discussion with the patient.

- Aspirin does not significantly reduce stroke in atrial fibrillation. At older ages bleeding may result in net harm.

**Aim of the guideline**

Only half the people with atrial fibrillation are on anticoagulants which reduce strokes by 64%.

This guidance aims to increase the use of anticoagulants and reduce the inappropriate use of antiplatelet agents.

**What this guidance covers**

The guidance concerns antithrombotic agents for the treatment of non-valvular atrial fibrillation. It is consistent with NICE Guidance.

See 2014 NICE AF guideline 180

guidance.nice.org.uk/cg180
Self monitoring blood glucose type 2 diabetes
All type 2 diabetics excluding insulin

% of patients


Newham
City and Hackney
Tower Hamlets
ACTION

- Web enabled - Single systems for IT
- IT decision support - search and analysis capability
- Locally engineered
- CCG, GP provider, and public health facing
- Academically supported

And also facilitated
Facilitation + Analysis

Clinical Effectiveness Group
Software tools: practice performance + patient summaries
### Individual patient summary views

<table>
<thead>
<tr>
<th>Patient Details</th>
<th>Gender</th>
<th>Date of Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>Medication</td>
<td></td>
<td>Date of Issue</td>
</tr>
<tr>
<td>Warfarin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSAIDs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Anticoagulants/Not specified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin/Antiplaeret</td>
<td>Aspirin /75mg dispersible tablets</td>
<td>19-Oct-2017</td>
</tr>
<tr>
<td>NSAID</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statins</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: use of aspirin recorded by GP, all other included above.*

<table>
<thead>
<tr>
<th>Risk Score</th>
<th>Score</th>
<th>Date Calculated/Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHADS2-VASC – APL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHADS2-VASC – GP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Comorbidities                   |       |                          |
| Dementia                        |       |                          |
| Palliative Care                 |       |                          |
| Heart Failure, Renal Failure, IHD, Stroke/TIA, FAO, Diab |       |                           |
| Liver Failure/Alcohol drinking risk |       |                           |
| Heart Valve                     |       |                          |
| SMI/Severe Disability/Housebound |       |                           |

<table>
<thead>
<tr>
<th>Bleeding Risk</th>
<th>Score</th>
<th>Date Calculated/Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAS-BLED – APL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAS-BLED – GP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process Measures</th>
<th>Value</th>
<th>Date Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latest international normalised ratio (INR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latest Systolic BP</td>
<td>120</td>
<td>02-Dec-2017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medication Review</th>
<th>Date Recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Medications Reviewed (Last 12m)</td>
<td></td>
</tr>
</tbody>
</table>
MOTIVATE – Dashboards in near real time

How am I driving? 19%  
How far to go? 1 more patients
It’s a system... not a plug-in ....

• CHOOSE WISELY – clinical engagement; quick wins
• GUIDELINES
• TEMPLATES: Multimorbid smart templates
• FACILITATION workshops, in-practice, telephone support
• TOOLS: AF-APL  HF-APL  eGFR
• SEARCHES - practice searches and patient recall
• DASHBOARDS – including PROMIS; LTCs
Research collaborations

- East London Genes and Health, NHS Health Checks
- Liver disease, CVD
- HIV screening, Latent TB screening trial
- Asthma, Childhood obesity, Diabetes

**New Funding**

- CRUK lung cancer care pathways
- ESRC antibiotic resistance
- NIHR methodology grant
- MRC Rutherford fellowships
- LHCR
- HDRUK
The result – A learning health system

2008 bottom quartile performance

4 yrs top in UK and London
THIS IS LEADING NOWHERE
Trust and digital maturity

• NHS as the trusted entity
• Local data ownership - federated structure
• Tools to do the job – state of the art technology (blunt scalpels)
• Smarter working for clinicians
• High quality data: single entry
• Accessible to patients and professionals
East London Patient Record: Viewing

Provides summary views of the patient record (not data exchange!)

100,000 views per month

Hospital views GP record – meds, Problem list etc
GP views hospital – limited info.

Covers all major providers in east London – mental health, hospice, hospitals, ambulance and OOH.
Discovery

- Integrated GP, hospital, OOH, community and Local authority
- Real time clinical care
- Connected to disease registers, cancer registers, research cohorts
- (Cerner HealtheIntent)
Discovery dataservice

SOURCES
Hospital
GP
OOH, Community Mental health
Local Authority Research

Identifiable zone
Data Service
Pseudonymised zone

Data access approvals

Information Service
Discovery – actionable health

• Discovery - Gets all our data into one place; links GP, hospital, LA

• Community Interest Company: providers and patients. The clinical orgs remain data controllers.

• Funded by Endeavour Healthcare Charity approx. £4m + £225k per year total shared from the 4 CCGs
Information Service
clinically driven with third party access

- Near real time reporting
- Relates process to outcomes bleeding anticoags; hypos; renal
- Efficiency – no duplicate tests
- Predictive scores + Decision support
- Research
- Patient connection + Apps
- Social services, OOH, 111 frailty
• Create severe frailty flag from GP and hospital record
• Caller rings 111
• Frailty flag displayed from Discovery
• Call handler passes to clinician to reduce call time and complexity
Wider picture

Discovery

Health Data Research UK and Digital Innovation hubs

One London: Local Integrated Health Care Record Exemplars

Health data science: patient and virtual health care applications