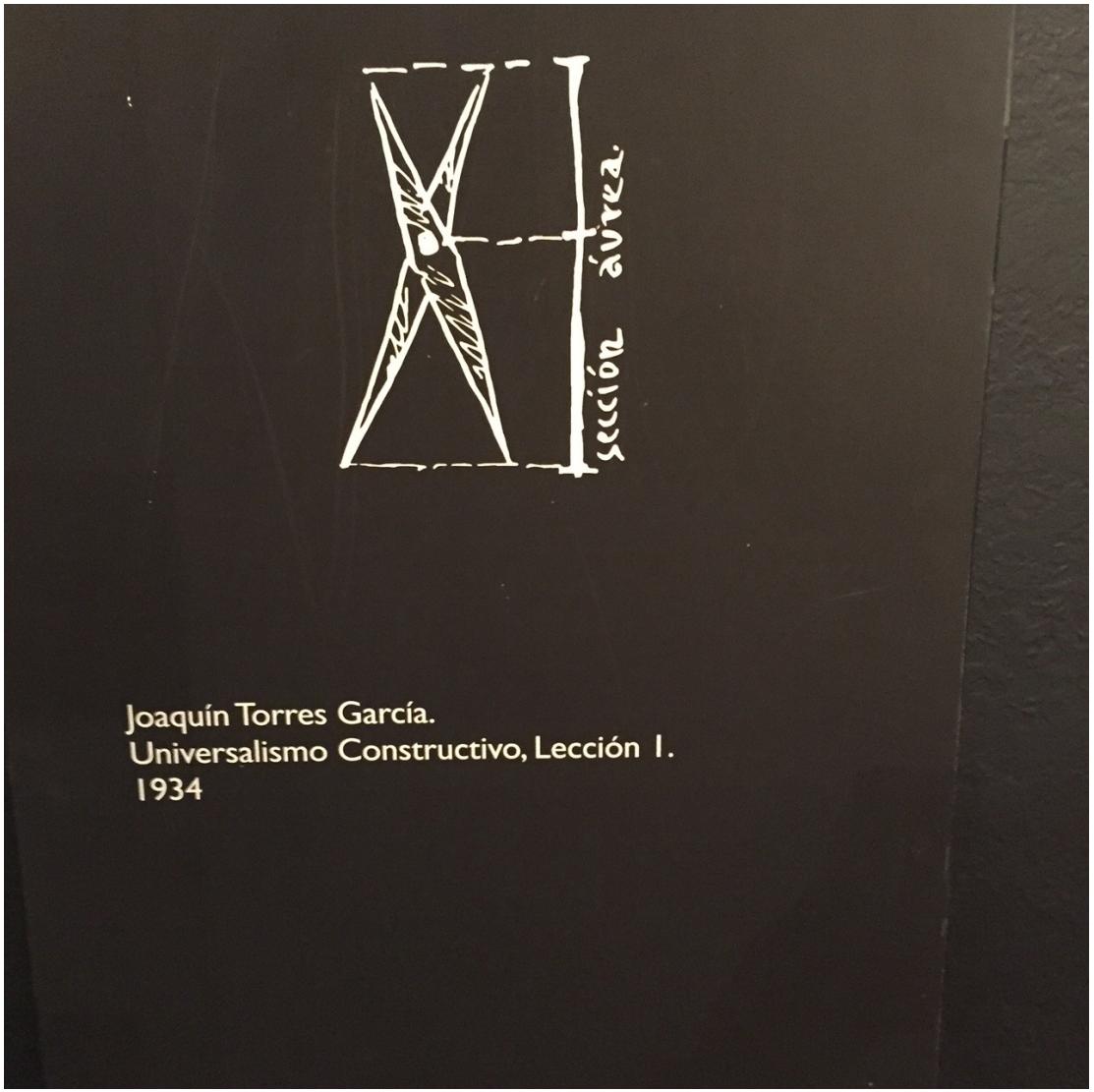
Barts Health NHS
NHS Trust

Creating value: People's health and SNOMED

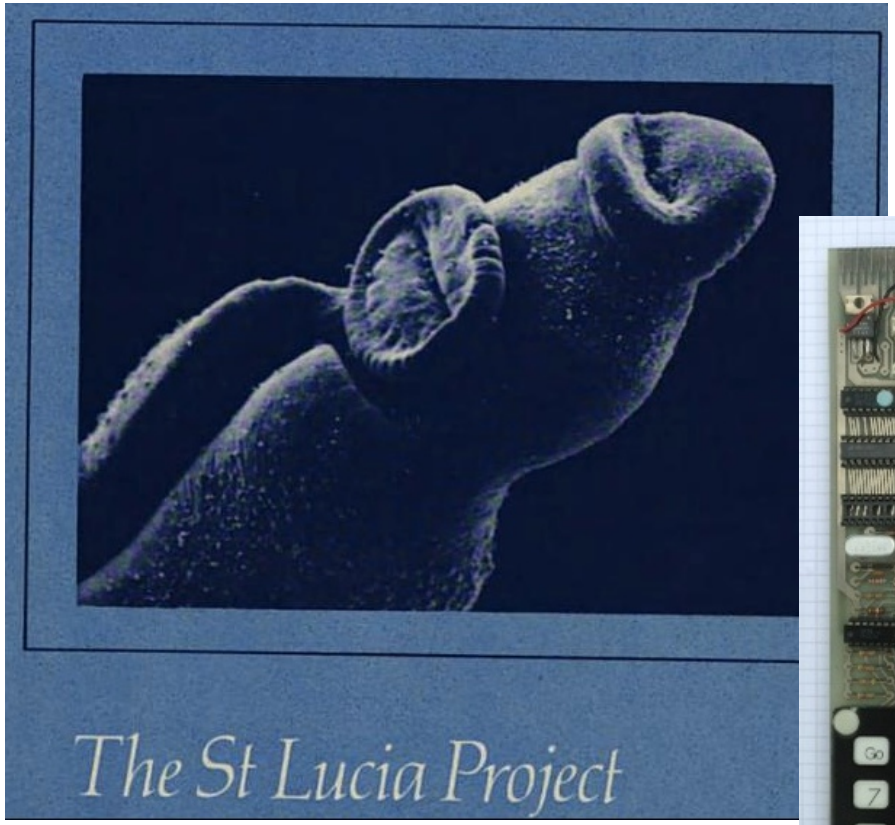
Charles Gutteridge

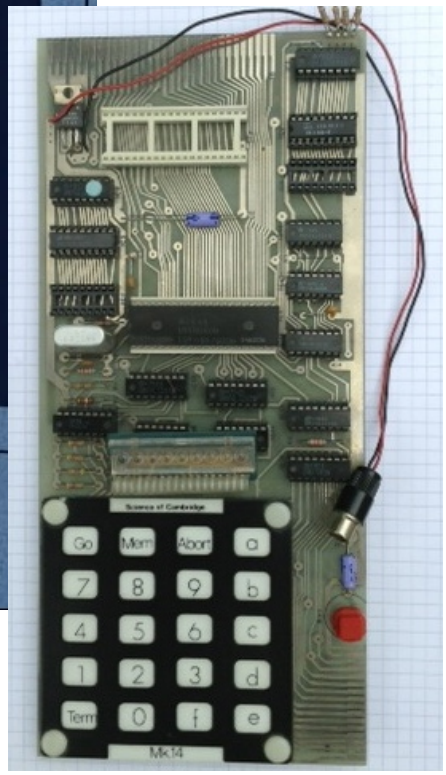
Joaquin Torres Garcia

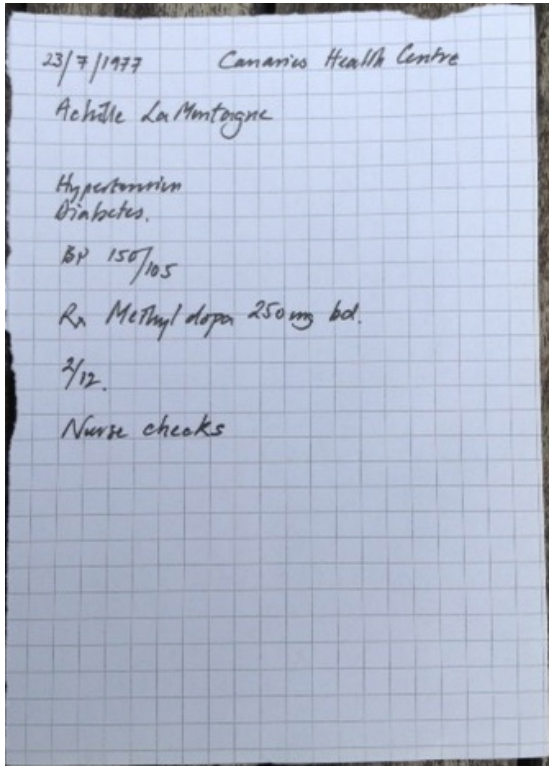


Human interoperation

Portable data -1977







Getting personal

What should
a healthcare professional do?

1682

12 Concepts

- 5 past 3
- 15.05
- 1682
- Scallop shell
- St James
- Church
- Shadow
- South
- Flag pole
- Lead
- Tree
- Christopher Wren

St James Garlickhythe

What does it really feel like….

- To have a hangover
- To be a mother
- To be in labour
- To be a father
- To live in fear
- To mourn the dead
- To be in pain
- To be a patient
- To be happy

Explaining using words

‘Between my finger and my thumb
The squat pen rests
I’ll dig with it’

Seamus Heaney 1966

Complexity - banking analogy is wrong

Clinical work

Listing

Listening

Feeling

Examining

Viewing

Diagnosis

Illustrating

Handing over

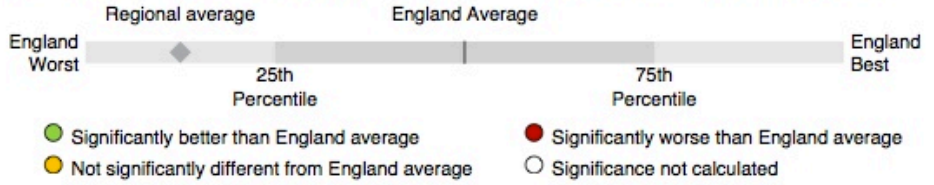
Making sure

Public Health England

UCL Institute of Health Equity

Marmot Indicators for Local Authorities in England, 2014 - Tower Hamlets

The chart below shows key indicators of the social determinants of health, health outcomes and social inequality that broadly correspond to the policy recommendations proposed in Fair Society, Healthy Lives. Results for each indicator for this local authority are shown below. On the chart, the value for Tower Hamlets is shown as a circle, against the range of results for England, shown as a bar. For three indicators, local authority figures are not available and so only the regional value is reported.



Health outcome indicators

	Period	Local value	Regional value	England value	England worst	Range	England best
Healthy life expectancy at birth - Male (years)	2010 - 12	52.5	63.2	63.4	52.5		70.0
Healthy life expectancy at birth - Female (years)	2010 - 12	57.2	63.6	64.1	55.5		71.0
Life expectancy at birth - Male (years)	2010 - 12	77.1	79.7	79.2	74.0		82.1
Life expectancy at birth - Female (years)	2010 - 12	82.0	83.8	83.0	79.5		85.9
Inequality in life expectancy at birth - Male (years)	2010 - 12	6.9	-	-	16.0		3.9
Inequality in life expectancy at birth - Female (years)	2010 - 12	3.3	-	-	11.4		1.3
People reporting low life satisfaction (%)	2012/13	6.7 *	6.3	5.8	10.1		3.4

Giving every child the best start in life

	Period	Local value	Regional value	England value	England worst	Range	England best
Good level of development at age 5 (%)	2012/13	45.9	52.8	51.7	27.7		69.0
Good level of development at age 5 with free school meal status (%)	2012/13	42.6	43.1	36.2	17.8		60.0

Population health management

- Biology of prognosis
- Determinants of childhood and adult disease
- Pregnancy and later health
- Diaspora health

Explaining

3 core elements for transformation

- A people's health data movement
- Empowering clinicians with point of care information and outcomes data
- Developing data for population health

The call for information….

Dear Charles,

Thank you so much for this. I will consider surgery and will go and see the GP. Hopefully the surgery will have access to the X-ray itself as well as to the report through the hospital's online system.

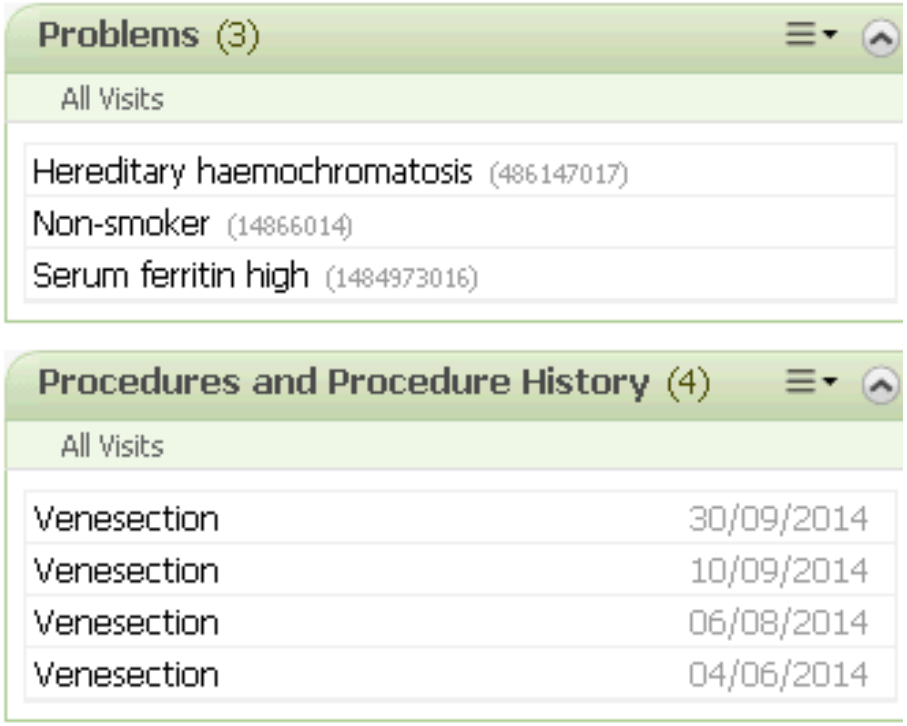
Warm regards,

314114000 230063003 160643000

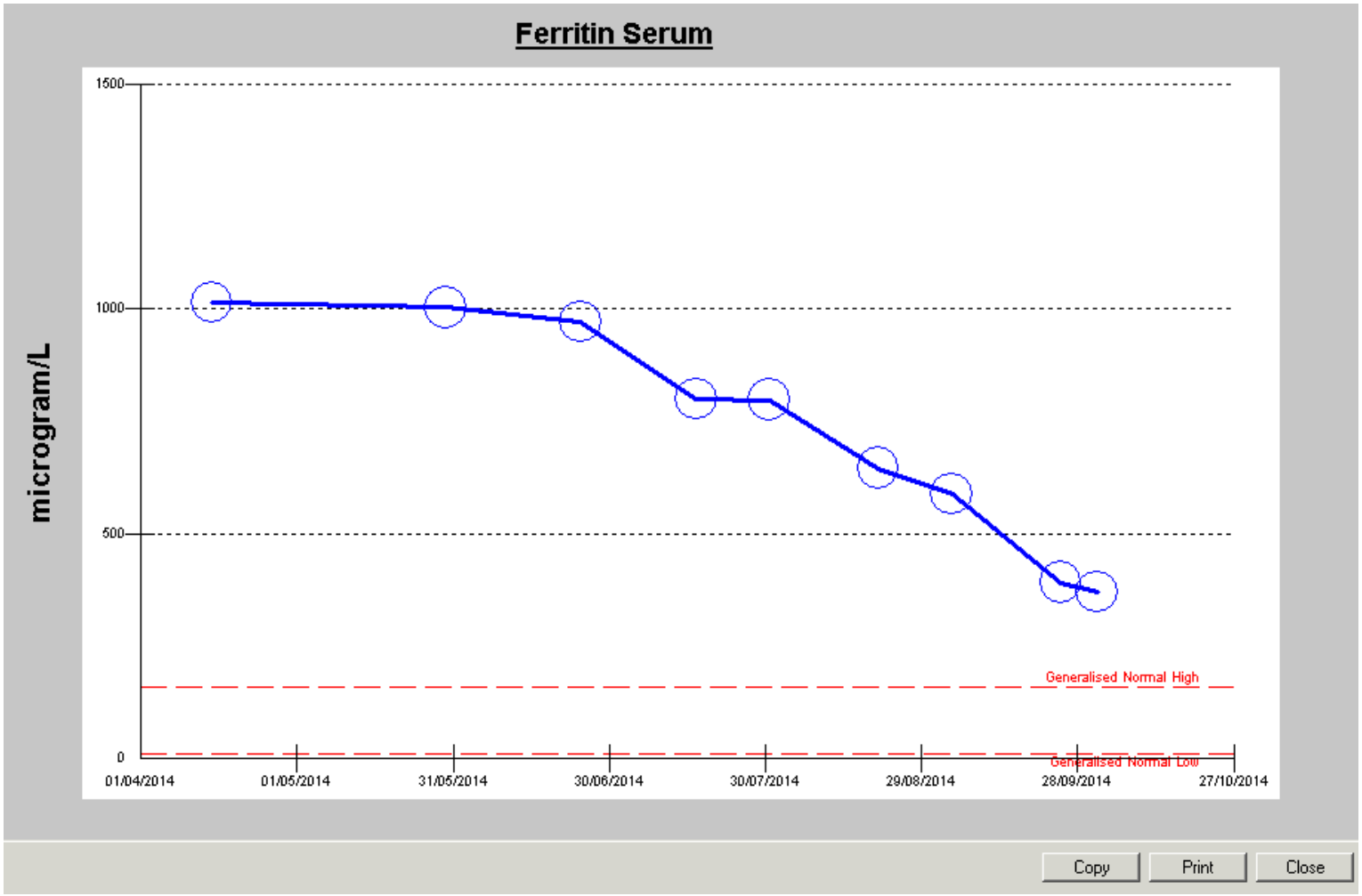
Machine readable

- 31411400
  - Recommendation to reduce meat intake
- 230063004
  - Heavy cigarette smoker
- 16064300
  - Anaerobic exercise 3+times/week

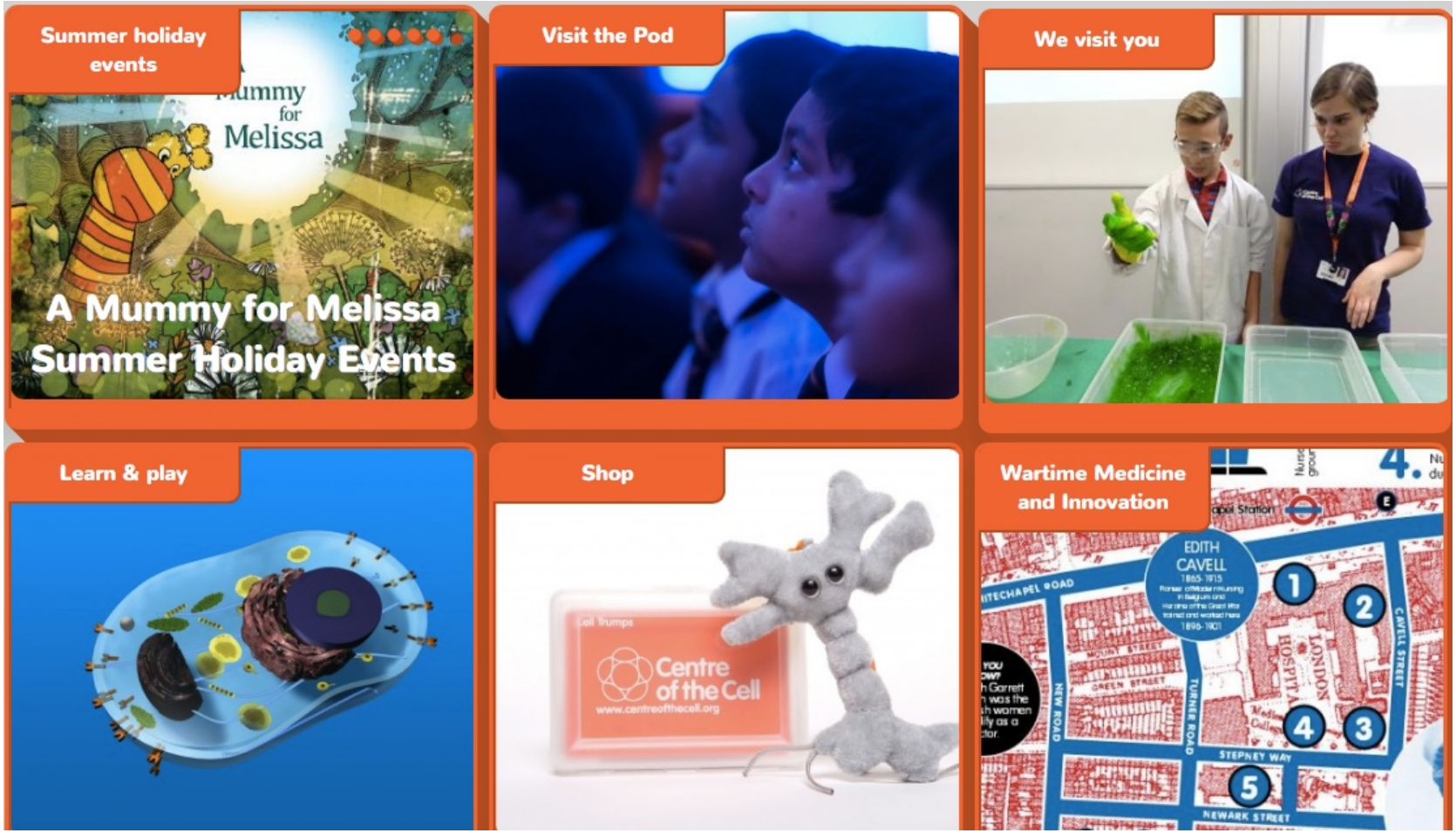
Clinical comprehensiom



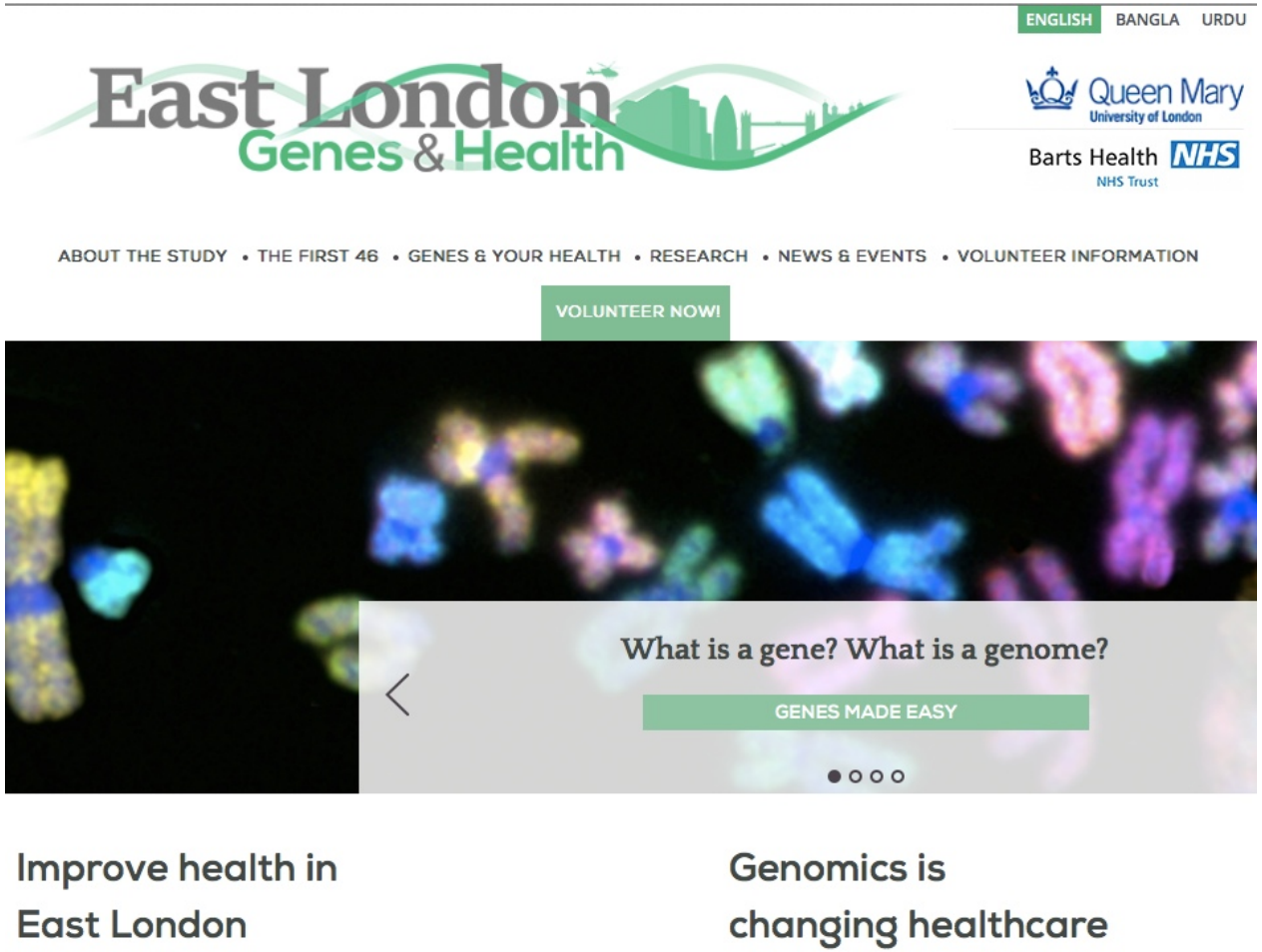
Patient visualisation



Learning with citizens and patients



Generational health



Show me all the GENES with somatic mutations in BIOBANK samples with the SNOMED Clinical Term for LUNG CANCER and reference with PHARMA database to show me all COMPOUNDS known to modulate those GENES

Department of Health

National Information Board

See more information about this Policy paper

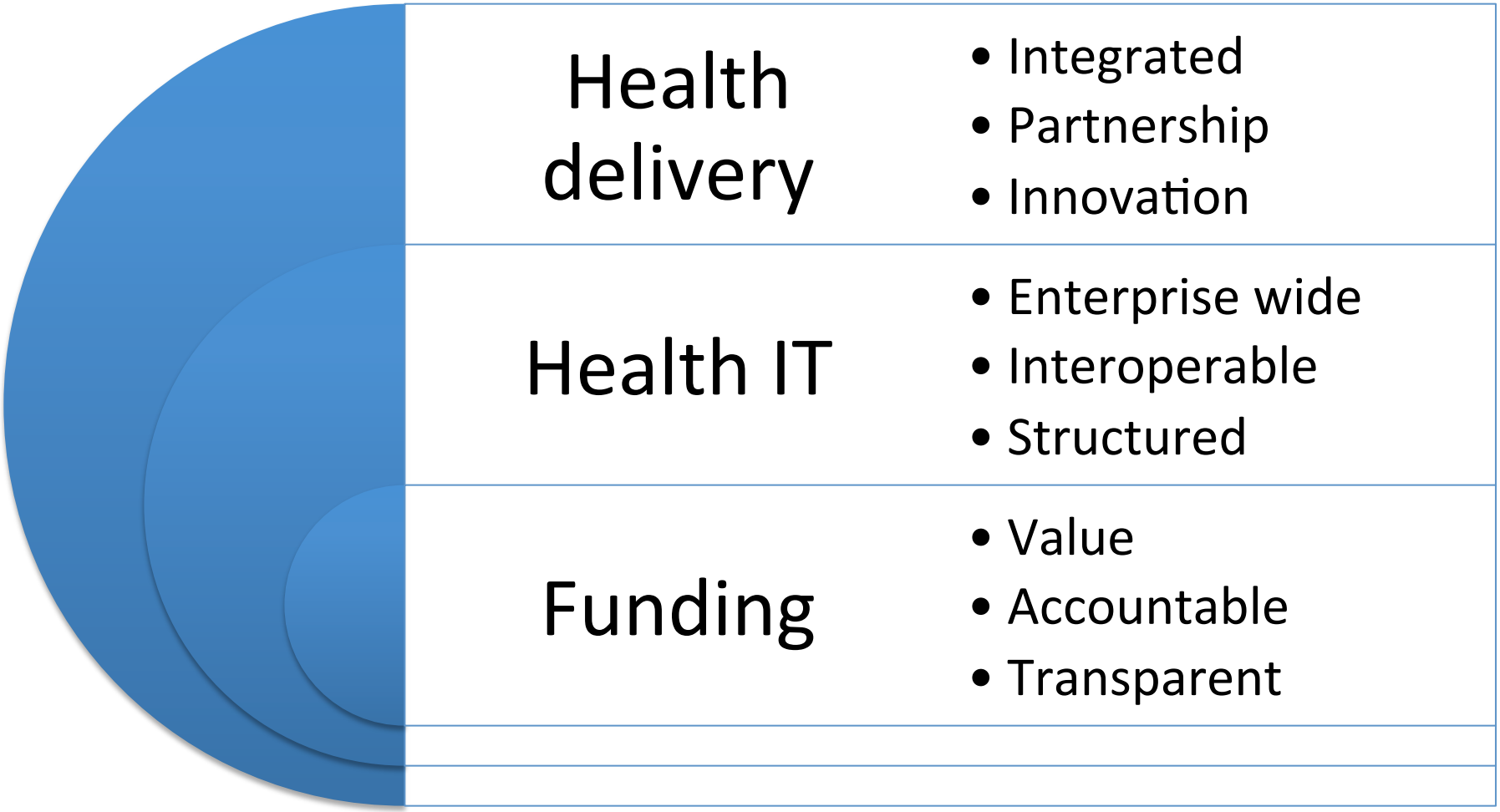
Policy paper

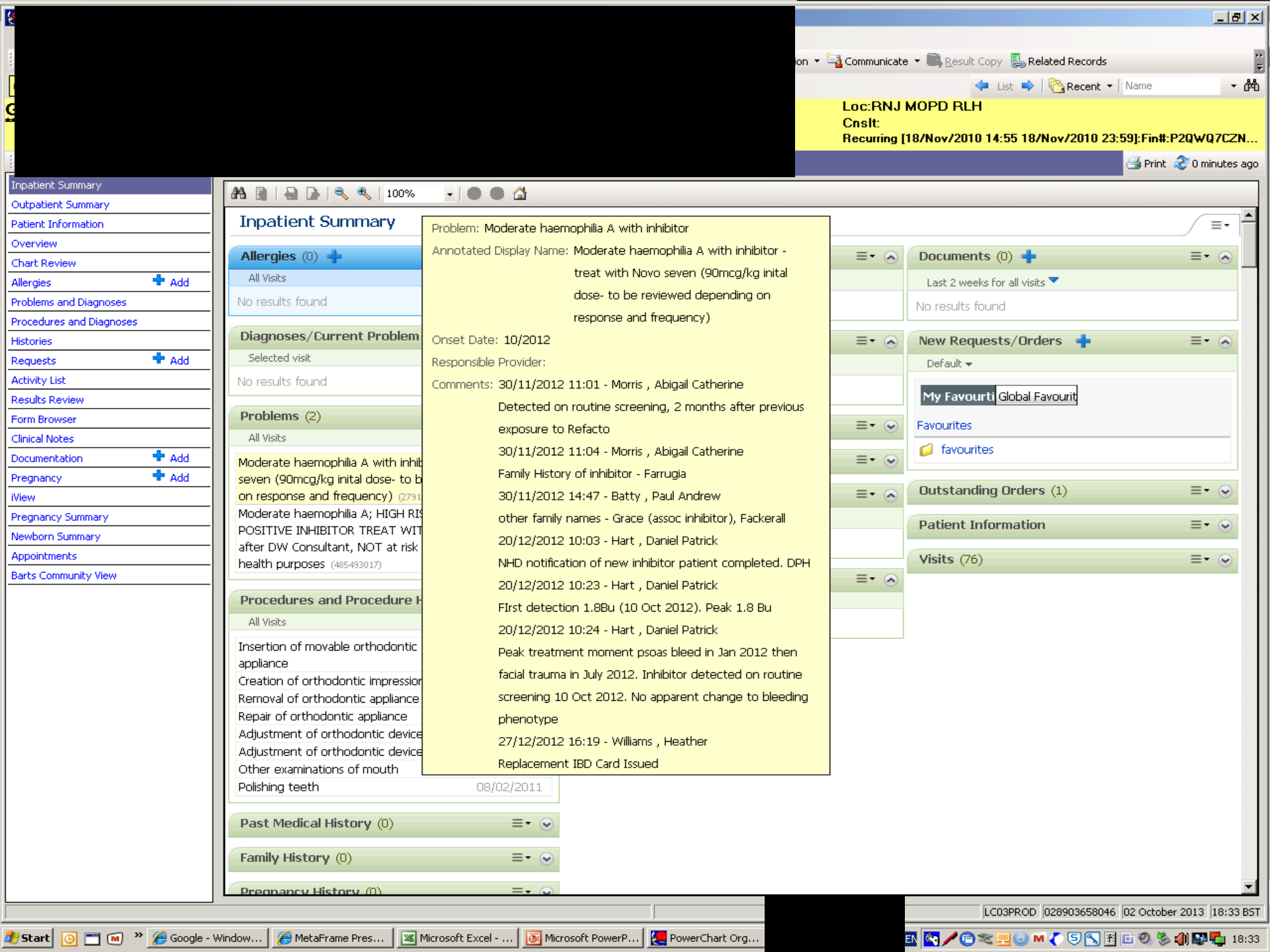
Personalised health and care 2020: a framework for action

Published 13 November 2014


ST BARTHOLOMEW'S
HOSPITAL

Single system




Communicate
Result Copy
Related Records
List
Recent
Name
Loc:RNJ MOPD RLH
Cnslt:
Recurring [18/Nov/2010 14:55 18/Nov/2010 23:59]:Fin#:P2QWQ7CZN...
Print
0 minutes ago
Inpatient Summary
Outpatient Summary
Patient Information
Overview
Chart Review
Allergies Add
Problems and Diagnoses
Procedures and Diagnoses
Histories
Requests Add
Activity List
Results Review
Form Browser
Clinical Notes
Documentation Add
Pregnancy Add
iView
Pregnancy Summary
Newborn Summary
Appointments
Barts Community View
100%
Inpatient Summary
Allergies (0)
All Visits
No results found
Diagnoses/Current Problem
Selected visit
No results found
Problems (2)
All Visits
Moderate haemophilia A with inhib
seven (90mcg/kg inital dose- to b
on response and frequency) (2791
Moderate haemophilia A; HIGH RIS
POSITIVE INHIBITOR TREAT WIT
after DW Consultant, NOT at risk
health purposes (485493017)
Procedures and Procedure H
All Visits
Insertion of movable orthodontic appliance
Creation of orthodontic impressior
Removal of orthodontic appliance
Repair of orthodontic appliance
Adjustment of orthodontic device
Adjustment of orthodontic device
Other examinations of mouth
Polishing teeth 08/02/2011
Past Medical History (0)
Family History (0)
Pregnancy History (0)
Problem: Moderate haemophilia A with inhibitor
Annotated Display Name: Moderate haemophilia A with inhibitor - treat with Novo seven (90mcg/kg inital dose- to be reviewed depending on response and frequency)
Onset Date: 10/2012
Responsible Provider:
Comments: 30/11/2012 11:01 - Morris , Abigail Catherine
Detected on routine screening, 2 months after previous exposure to Refacto
30/11/2012 11:04 - Morris , Abigail Catherine
Family History of inhibitor - Farrugia
30/11/2012 14:47 - Batty , Paul Andrew
other family names - Grace (assoc inhibitor), Fackerall
20/12/2012 10:03 - Hart , Daniel Patrick
NHD notification of new inhibitor patient completed. DPH
20/12/2012 10:23 - Hart , Daniel Patrick
FIrst detection 1.8Bu (10 Oct 2012). Peak 1.8 Bu
20/12/2012 10:24 - Hart , Daniel Patrick
Peak treatment moment psoas bleed in Jan 2012 then facial trauma in July 2012. Inhibitor detected on routine screening 10 Oct 2012. No apparent change to bleeding phenotype
27/12/2012 16:19 - Williams , Heather
Replacement IBD Card Issued
Documents (0)
Last 2 weeks for all visits
No results found
New Requests/Orders
Default
My Favourit
Global Favourit
Favourites
favourites
Outstanding Orders (1)
Patient Information
Visits (76)
LC03PROD
028903658046
02 October 2013
18:33 BST
Start
Google - Window...
MetaFrame Pres...
Microsoft Excel - ...
Microsoft PowerP...
PowerChart Org...
18:33

HELPING SMOKERS QUIT

London Clinical Senate

NO SMOKING DAY
11 March 2015

Adding value to every clinical contact by treating tobacco dependence

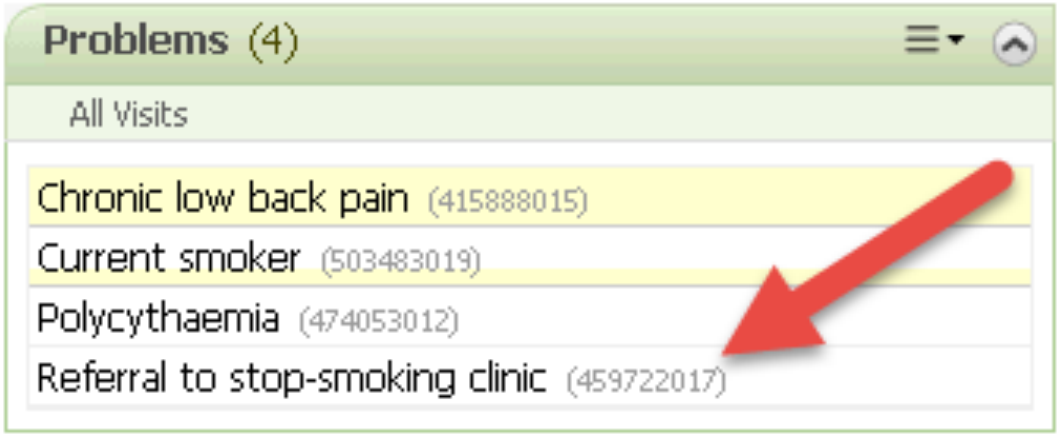
London's Clinical Senate is asking health professionals working with London's 1.2 million smokers to support the NO SMOKING DAY campaign.

'Smoking cessation is THE value proposition for the NHS today' – Prof John Moxham, Director of Clinical Strategy, King's Health Partners

The Clinical Senate asks London's health organisations to commit to CO4 from 11 March 2015:

1. The 'right' CO nversation for every patient and staff member who smokes that gives him or her a chance to quit, referring if necessary.
2. Make routine desktop exhaled carbon monoxide (CO) monitoring by clinicians possible: *"Would you like to know your level?"*
3. CO de the intervention so we can evaluate effectiveness - including death certification.
4. CO mmission the system to do this right: so right behaviours incentivised systematically.

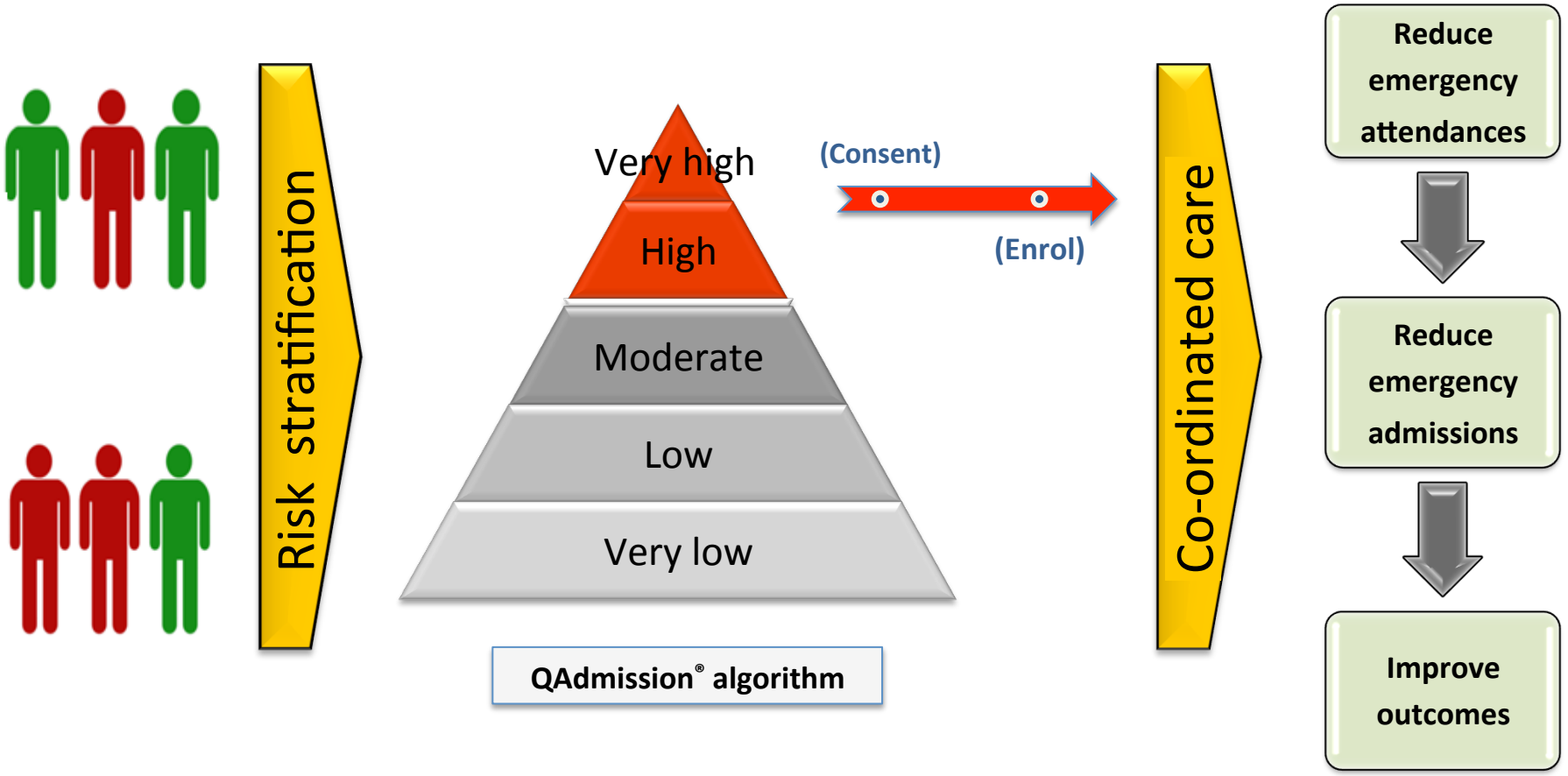
Connecting up for benefit

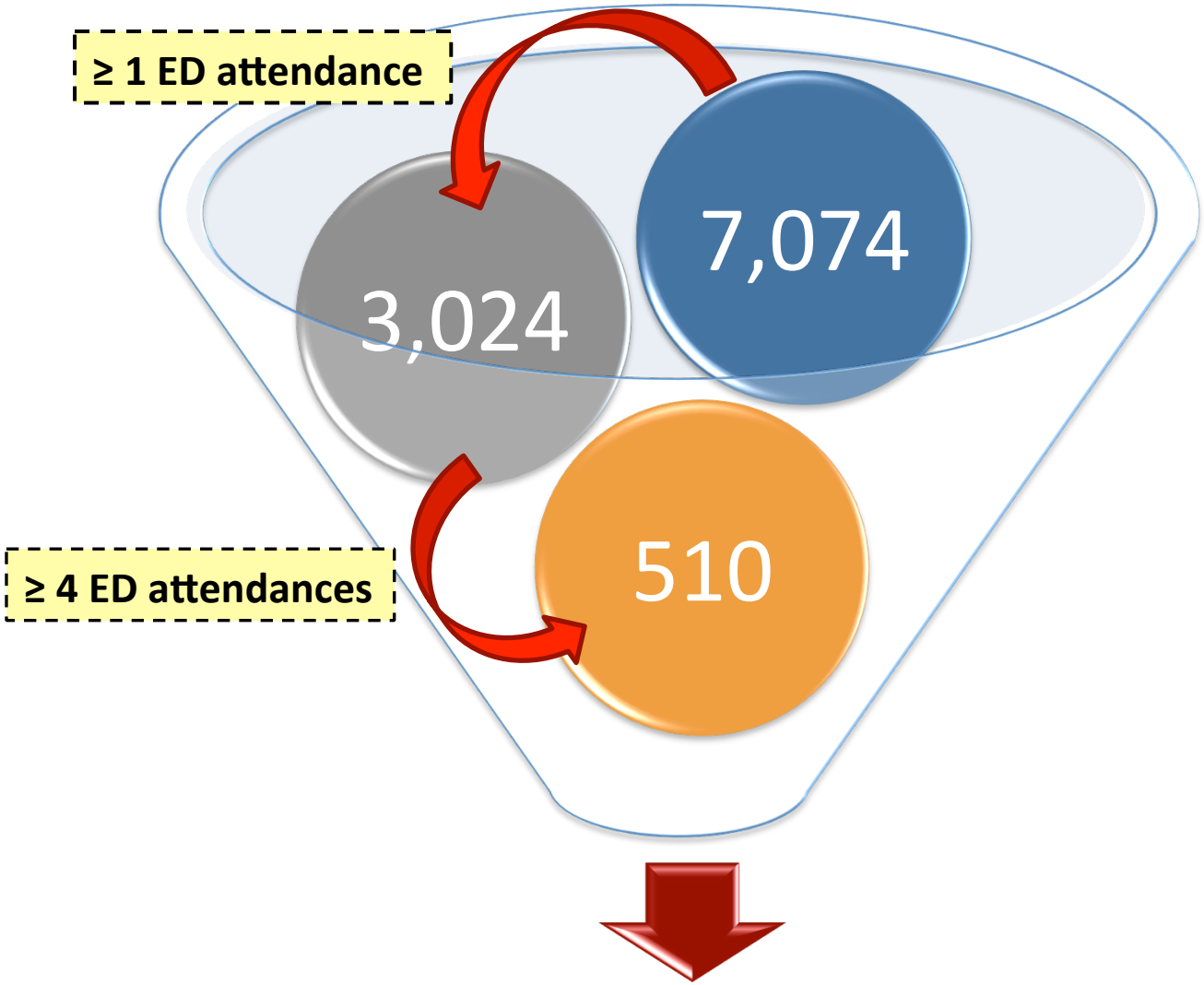


Maternal smoking statistics

	Count
Current smoker	1328
Ex-smoker	3498
Never smoked	20290
Unknown	39
Grand Total	**25435**

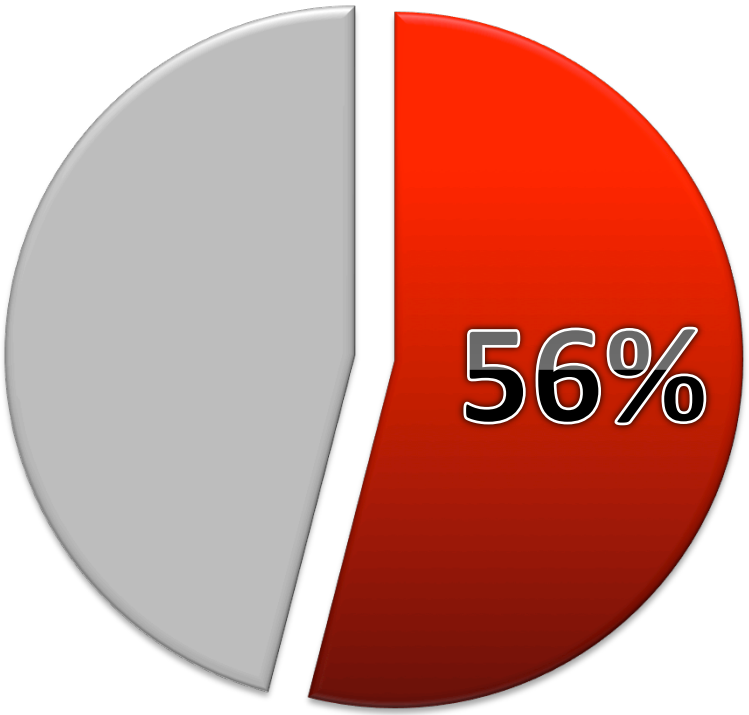
East London Integrated Care Programme





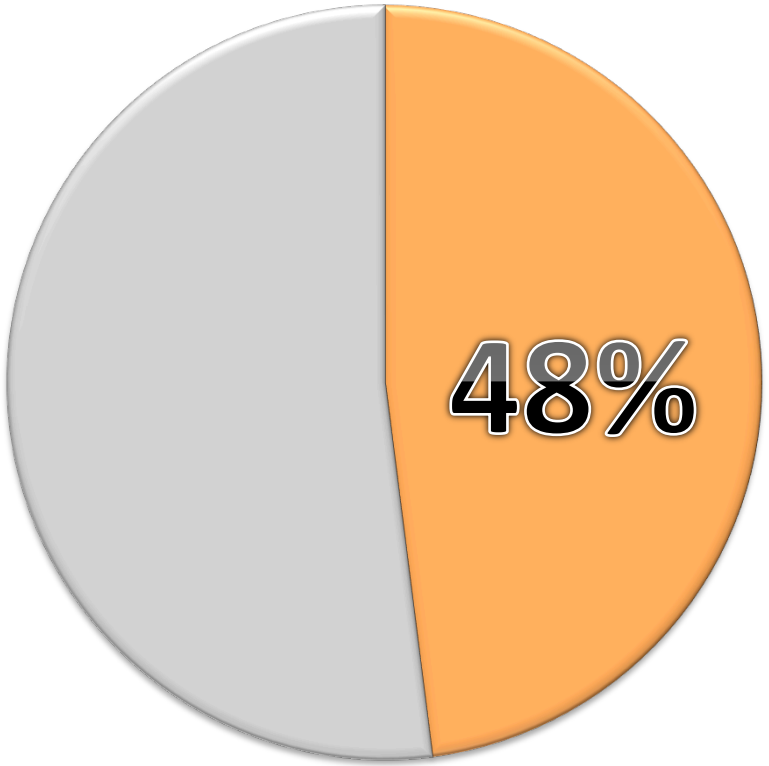
Target population for community-based intervention

Reasons for attending the ED



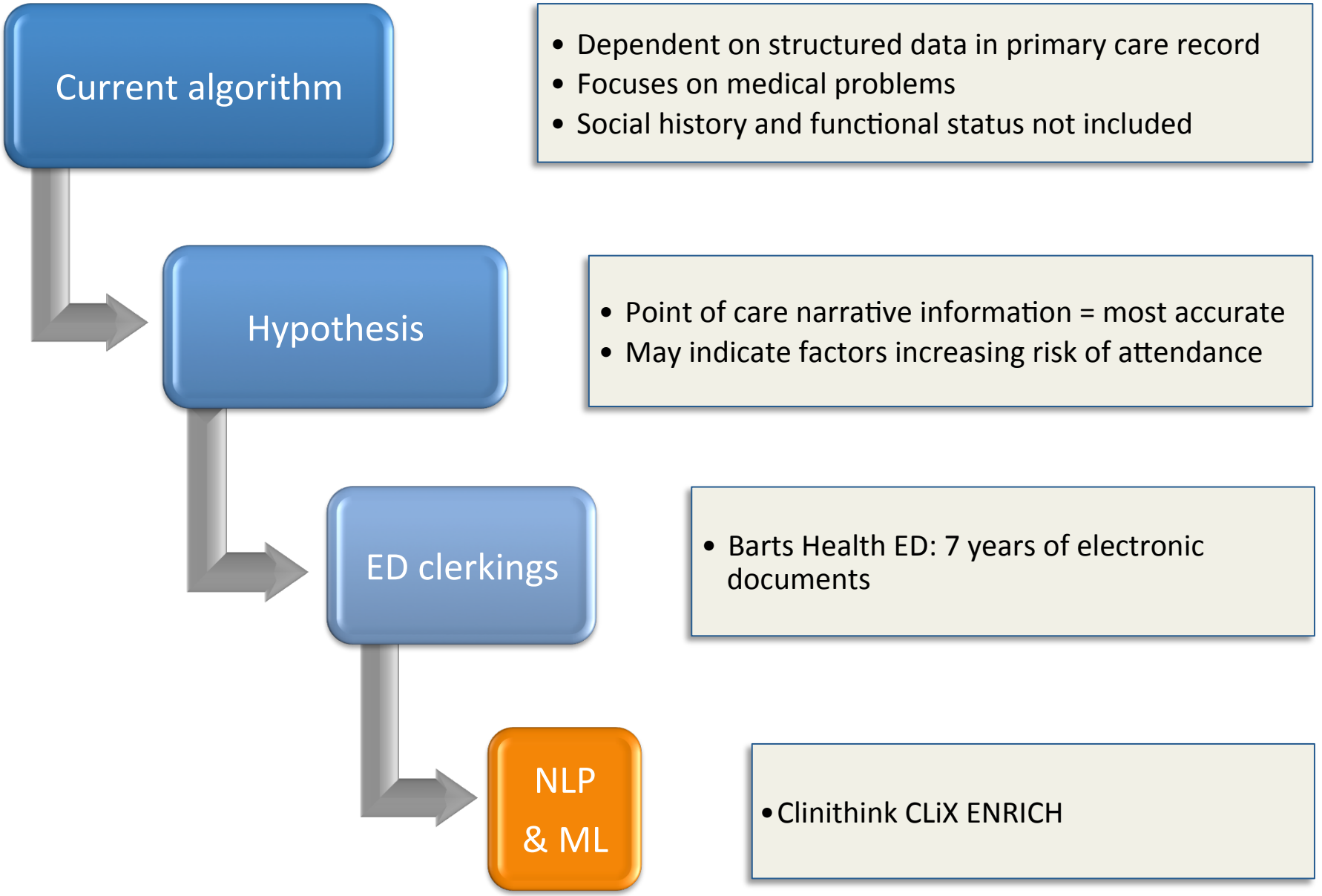
- Pain
- Shortness of breath
- Generally Unwell
- Fall
- Chest Pain
- Confusion
- Chest infection

Primary diagnosis at discharge (ICD-10)

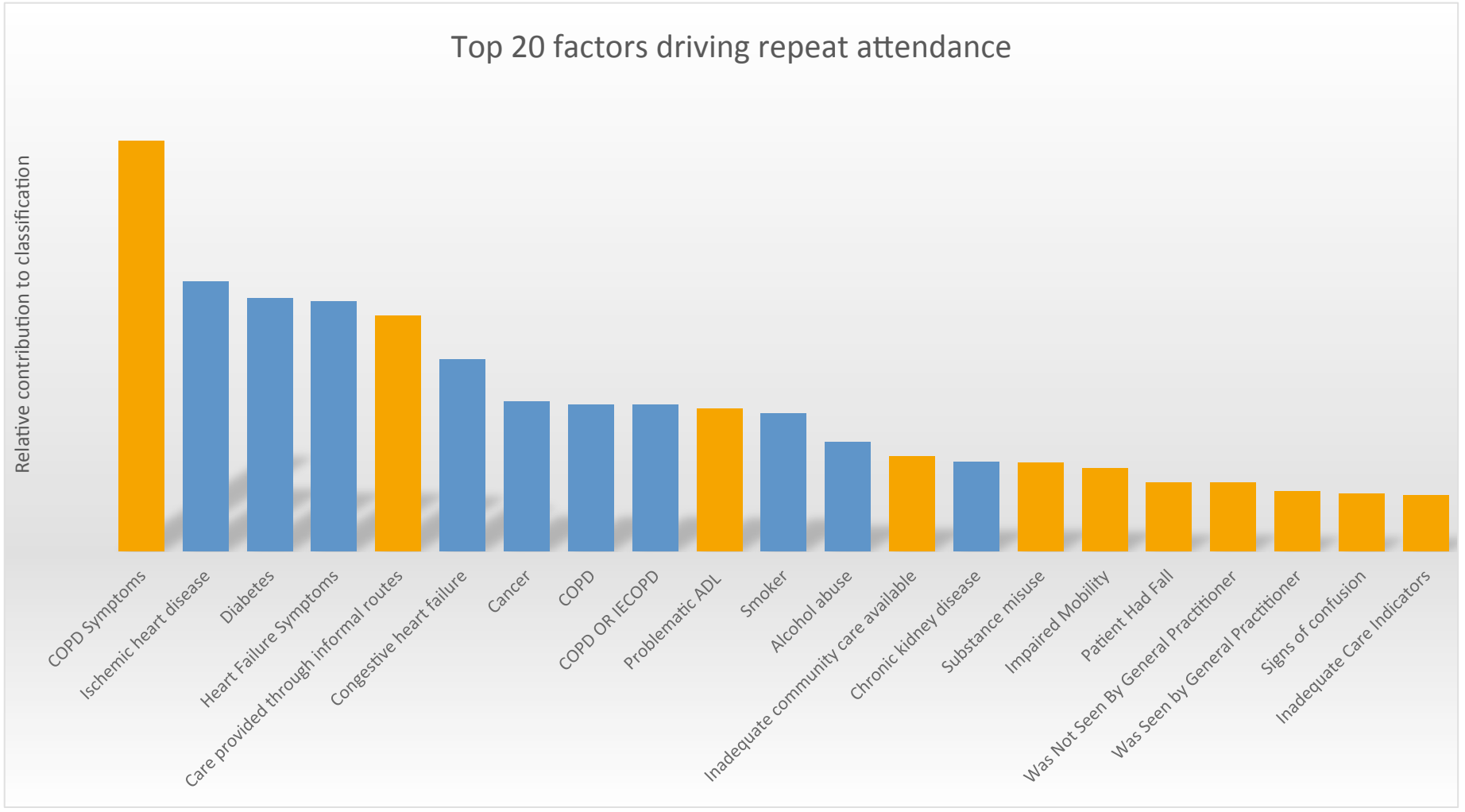


LRTI
UTI
Gastroenteritis
IHD
COPD
Heart failure
Superficial injury
Fracture
Electrolyte imbalance
Unspecified chest pain
Unspecified fall / collapse

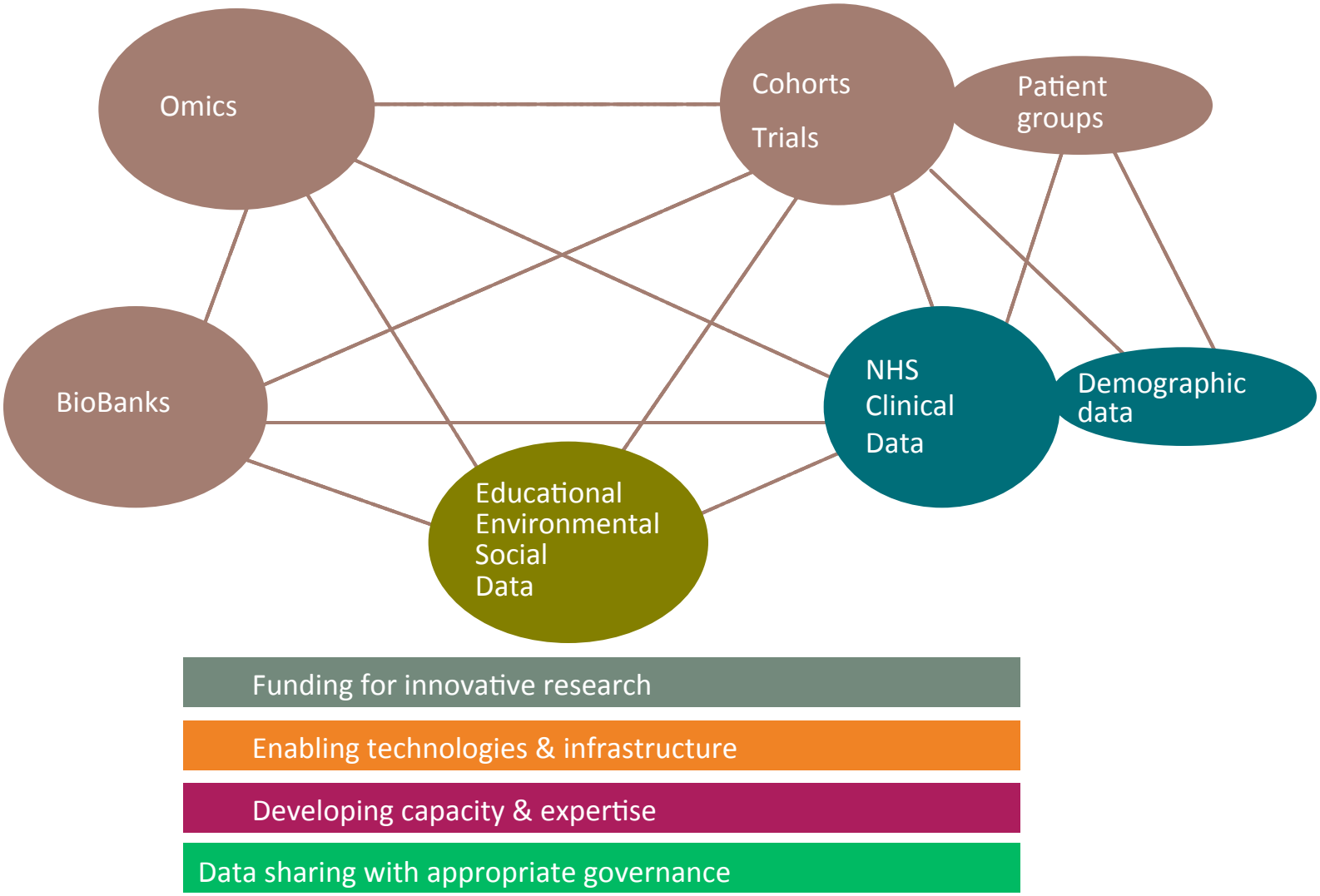
The answer is in the data…?



Value proposition



The data needs of a population health management system



Clinical analytics service

- Training and learning
  - Data science seminars
  - Mentoring and 1:1
- Desktop data extraction
- Advisory service
  - SNOMED expertise
  - Data visualisation
- Data linkage

hscic Health & Social Care Information Centre

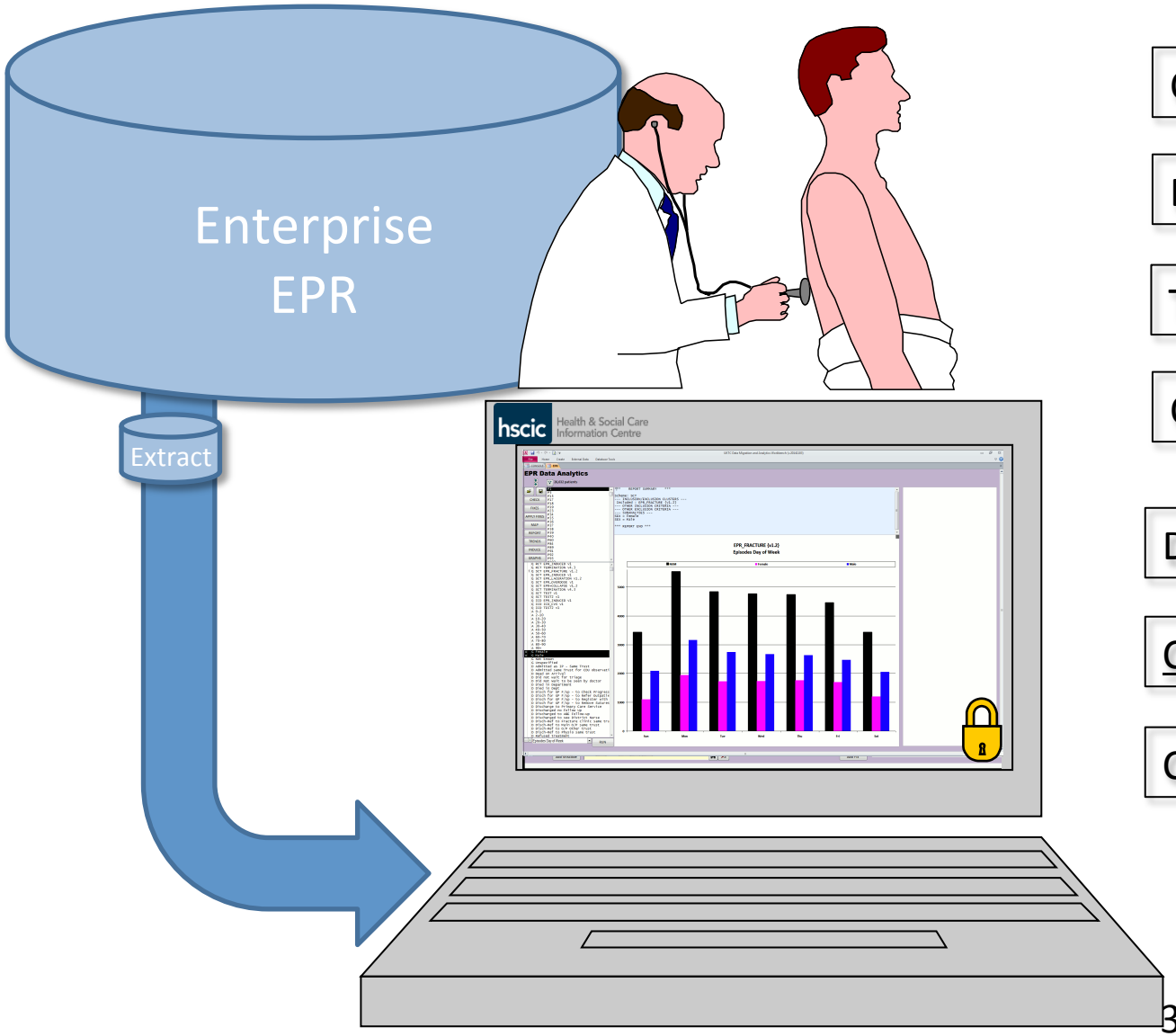
CDAT: A desktop tool for analysing clinical data

Dr Jeremy Rogers

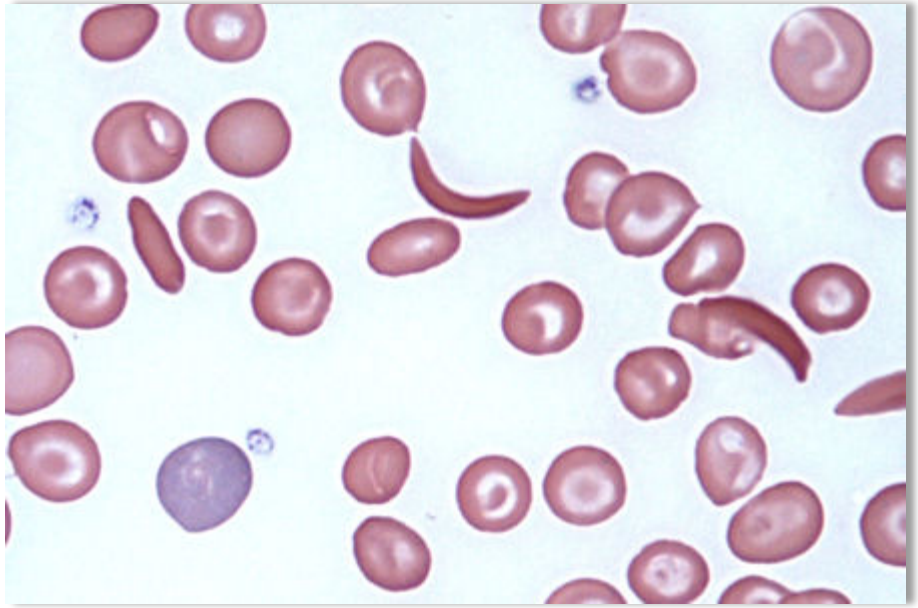
IHTSDO Consultant Terminologist
Principal Terminology Specialists NHS HSCIC

Strategic Clinical Reference Group
London, March 10th 2015

CDAT Project Overview



- Clinicians
- Encrypted laptop
- Their own data
- CDAT application
- Data Quality/Repair
- Clinical Reports
- Clinical Engagement



Clinical Analytics with SNOMED CT : A&E Case Study #1

SICKLE CELL CRISES @ A&E

38 MONTHS

417,211 ATTENDANCES

Queen Mary University of London

Barts and The London School of Medicine and Dentistry

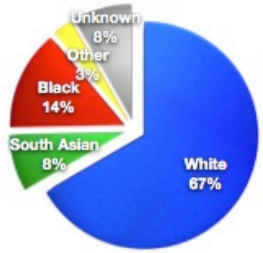
Creating a multiple sclerosis population dataset in East London as an example of changing the way routine patient data is used

Albor C, Richards O, Gunawan A, Turner BP, Ramagopalan S, Gutteridge C, Boomla K, & Schmierer K

BACKGROUND

Few geographically-linked datasets of people with multiple sclerosis (MS) exist in the UK. The development of these datasets enriched with clinical information would aid in testing etiological hypotheses, comparing disease progression between treatment regimes, and recruiting clinical trial participants. The population in East London (defined here as The City, Hackney, Tower Hamlets, and Newham) is of particular interest because of its ethnic mix, which is reflected by its population with MS (see below).

Ethnic mix of population with MS in East London*



METHODS

Identifying cases: Based on existing outpatient clinic lists at The Royal London Hospital, a list of MS patients was created on 'Cerner Millennium Software' (CRS). These patients were matched to their demographics** (age, sex, ethnicity and primary care trust - PCT). MS patients that were matched to the PCTs of Tower Hamlets, Newham, and City & Hackney formed our East London MS Cohort. Completeness of this cohort was tested against counts of MS patients registered to GP practices in the same area*.

Phase 1 of coding clinical data (ongoing): Scanned clinical letters are manually searched to code key variables on each patient's CRS hospital record: MS course (relapsing-remitting, secondary progressive, or primary progressive), year of onset, first symptoms, and whether on disease-modifying treatment.

Phase 2 of coding clinical data (ongoing): When patients attend outpatient clinics, they are given questionnaires asking for further MS-related information◆. Completed questionnaires combined with updates from consulting clinicians are used to code further variables on patients' CRS hospital records.

Preparing data for analysis: Coded clinical data of MS patients are extracted from CRS hospital records using the CRS 'Explorer Menu'. This data is then anonymised in the secure network, before analysis with *Stata* statistical software.

RESULTS

1,230 MS patients attending the Royal London outpatients department have been identified. 451 of these patients were matched to the three East London PCTs (City & Hackney, Tower Hamlets, and Newham), therefore make up our East London MS Cohort. They account for 60% of the count of MS patients identified by GP records*.

Approximate demographic characteristics of the population with MS in East London can be derived from our MS Cohort (see below). The similarity of the ethnic breakdown of our MS cohort (below) to the population with MS identified by GP records (shown left as pie chart) indicates that our cohort is a good representation of the East London population with MS.

Ethnicity-specific demographic characteristics of East London MS Cohort

	% (n)	Mean Age	♀ : ♂	Prevalence per 100K†
White	62% (280)	51	2.3 : 1	145
South Asian	9% (40)	38	2.6 : 1	28
Black	16% (71)	44	2.6 : 1	76
Other	6% (28)	37	1.3 : 1	18
Unknown	7% (32)	52	3.6 : 1	0
Total	100% (451)	48	2.4 : 1	92

Currently, phase 1 and phase 2 coding of all 1,230 people with MS using the outpatient service at the Royal London Hospital is in progress. The majority of our variables of interest have been coded for over 10% of patients. MS course classification has been coded for 50% of patients. This is summarised for just a selection of variables below in the context of the 451 patients in the East London MS Cohort.

CONCLUSIONS

The demographic characteristics of the White MS patients in our cohort are very similar to those recently described in another UK-based geographically-linked MS cohort of 620 patients in Wales which was 97% White††. They described a mean age of 51 (same in East London), a female:male ratio of 2.4:1 (2.3:1 in East London), and a prevalence of 146 (145 in East London) per 100,000. However, what is unique to our cohort is the ethnic diversity, allowing us to show prevalences for ethnic minorities. What is more, when our coding of clinical data is complete, we will be able to conduct further epidemiological analyses such as:

- **Migration studies**: Difference in prevalence amongst ethnic minorities depending on whether UK-born, immigrated as a child, or immigrated as an adult.
- **Treatment effectiveness studies**: Difference in disease progression by treatment regime (using disability level by EDSS✣, use of walking aid, maximum walking distance, and eligibility status for disease-modifying treatment)
- **Case-control studies of risk factors**: Difference in factors such as Vitamin D levels, history of glandular fever, family history, and smoking status between MS patients and a geographically matched control group.

NOTES

* GP registration data for City & Hackney, Tower Hamlets & Newham provided by Kambiz Boomla from the Clinical Effectiveness Group, Centre for Primary Care & Public Health, Blizard Institute, Barts & The London.

** CRS-linked demographic data provided by Gillian Grierson from the Data Warehouse of Barts Health NHS Trust.

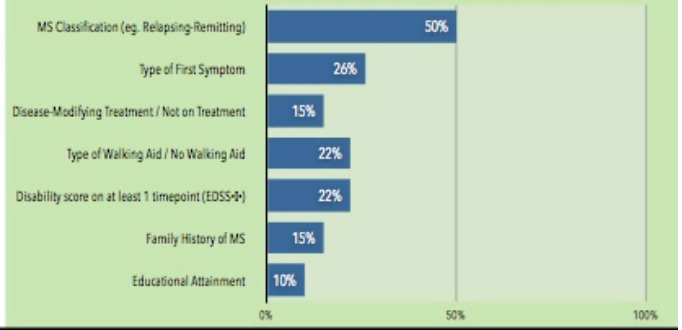
◆ MS specialist nurses Freya Edwards and Grace Anjorin provided crucial support with questionnaire dissemination and collection.

† Prevalences shown here are crude unadjusted rates produced using GP registration data from Clinical Effectiveness Group and Census 2011.

†† Hirst, C. et al., 2008. Increasing prevalence and incidence of multiple sclerosis in South East Wales. J Neurol, Neurosurg & Psychiatry, 80(4): 386–391.

✣ EDSS = Expanded Disability Status Scale for Multiple Sclerosis.

% of patients in East London MS Cohort with complete information on some chosen variables



Contact: c.albor@qmul.ac.uk

This work has been supported by a non-restricted educational grant from Novartis.

Why do adult patients known to palliative care present to the emergency department (ED)?

"They shouldn't be coming to the ED, should they?"

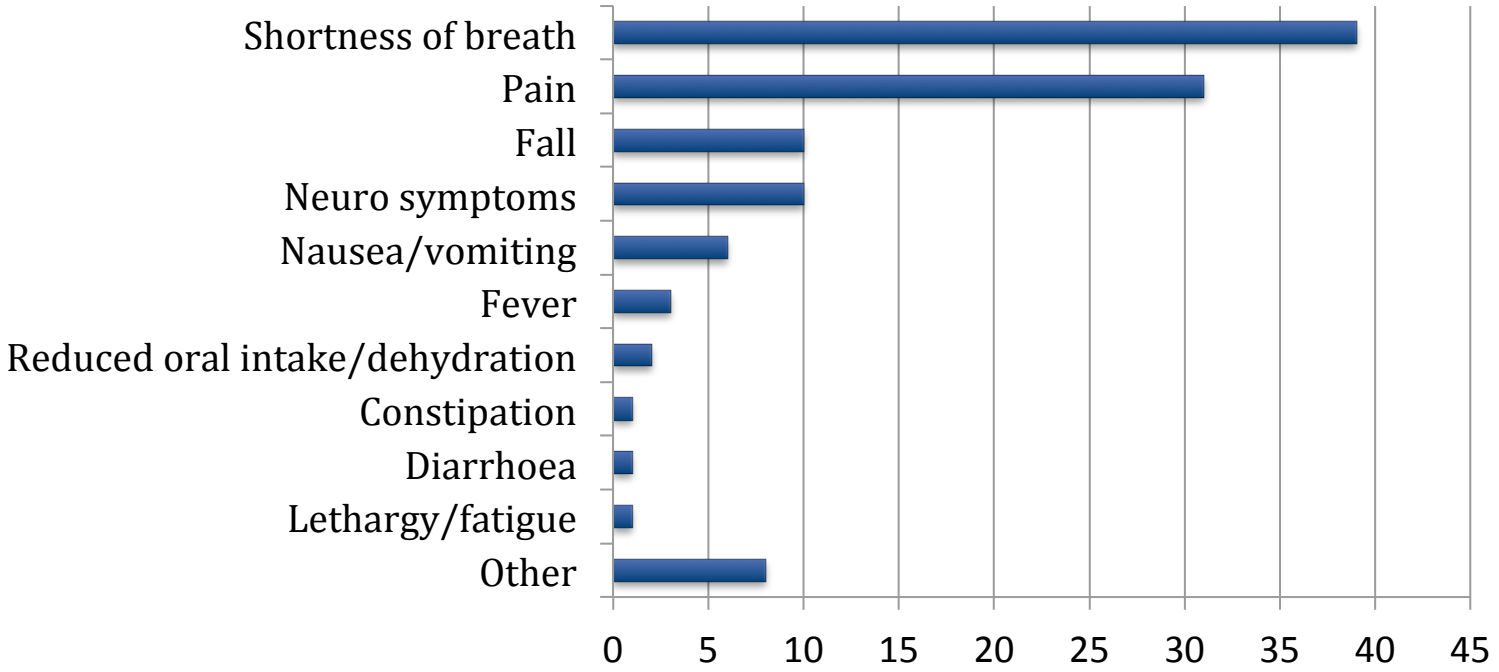
A mixed-methods service evaluation

Green E, Shaw S, Ward S, Riley B, Sattar H, Brierley W, Harris T

Barts Health NHS
NHS Trust

Quantitative Findings

- ✓ 105 patients made 112 presentations to the ED
- ✓ 53% female, mean age 73



Leadership challenges

- Clinical staff work in time limited episodes
- Clinical work is emotionally charged
- Clinical training does not YET include data science

Working together

- Project deliverables and clinical timescape
- Clarity about what the software does to non-experts
- Ensuring everyone is on the same page
- Manage the cultural divide between tech and medicine
- W constant of SNOWMED – assume no knowledge of mathematics or descriptive logic

SNOMED based interventions

- Point of care patient knowledge
- Clinical algorithms
- Medical undergraduate development
- Research
- Clinical analytics
- Population health management

Opportunities

- Handover tools
- Data entry tools
- Problem analytics
- Health information exchange
- Support tools for social care
- Life style management


SNOMED
NOW
AND LIVE THE REST OF YOUR Life -AS-
a Champion
-MUHAMMAD ALI
TOW-AWAY ZONE
24 HRS 7 DAYS
UNAUTHORIZED VEHICLES OR VESSELS WILL BE TOWED AWAY AT OWNERS RISK & EXPENSE
ALPINE TOWING
305-633-9001