kinetik solutions

Lean London Forum

Lean Executives
executive search & selection for the lean enterprise

21 March 2012
Royal College of Surgeons

For more information, please email help@leanlondon.org.uk or telephone 0207 824 8448

We have some broad aims of the forum

- **Create the environment where Lean Solutions in the NHS are shared, discussed and acted upon by practitioners in the health service**
- **Engage in a debate about strengths and weakness of lean in the current NHS climate**
  - The QIPP agenda in reducing costs across the health system
  - Clinical Commissioning Groups that will redefine ‘end to end’ health systems processes
- **To network with colleagues and friends**

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Agenda

- **1800 - 1810** **Welcome and introductions**
- **1810 - 1835** **The Path-ology to Lean Thinking - Dr Mathew Diggle & Suzanne Horobin**
- **1835 - 1900** **Pre-operative health evaluation - engagement with Primary Care - Dr Ahmed Chekairi, Whittington Hospital**
- **1900 - 1930** **Hot seat session**
- **1930 - 2000** **Networking and drinks**

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Introductions

- **Your Name**
- **Your Role**
- **The one thing relating to Lean you are curious about?**

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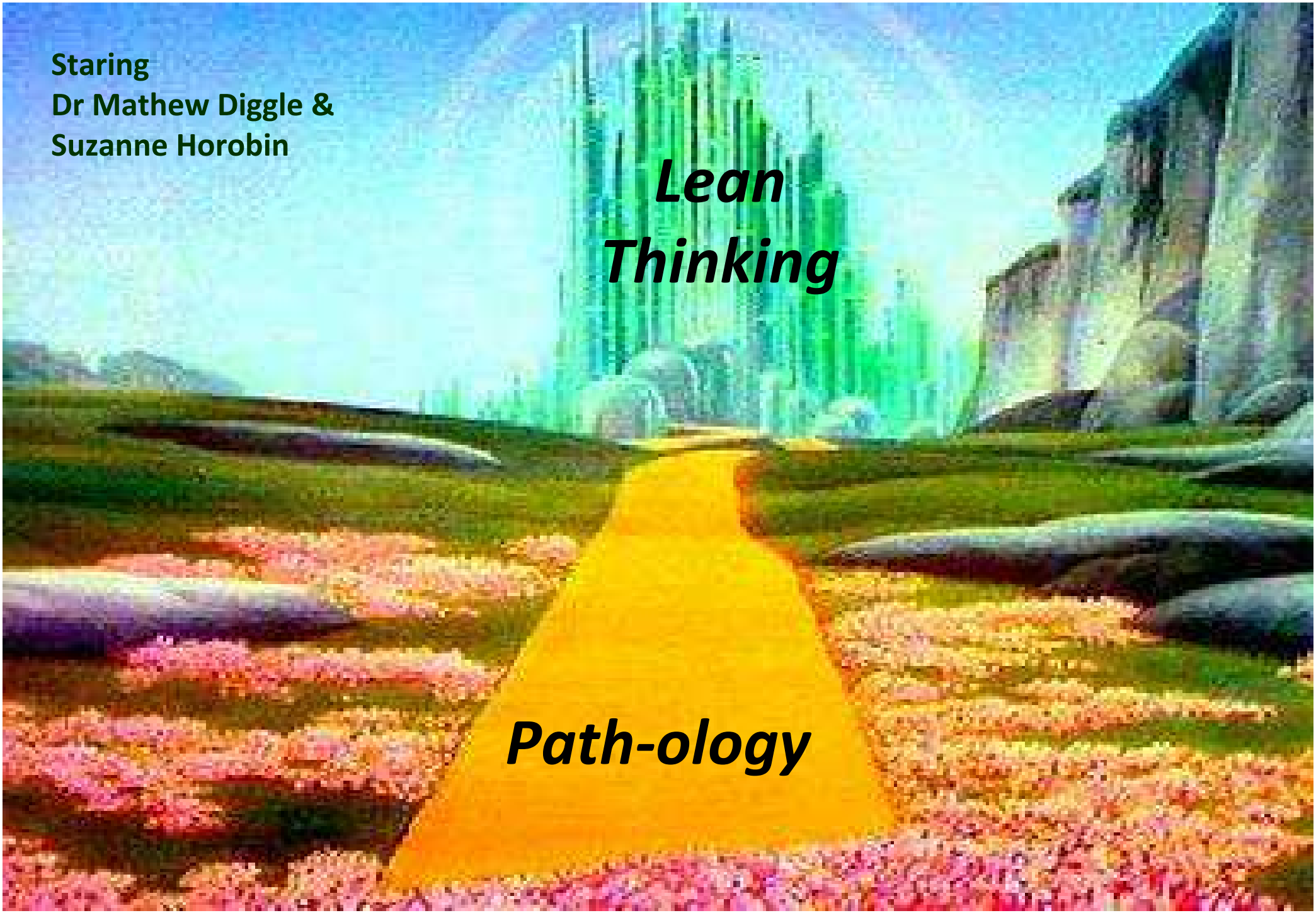
Recap – What is Lean?

- Focus on Value from a Customer (Patient) point of view on every step of process
- Obsession on removing waste within the ‘whole system’
- Bottom up approach in identifying value and waste – assumption that much of waste and value is hidden
- A true lean system would “flow” and need little command and control


Staring
Dr Mathew Diggle &
Suzanne Horobin
Lean
Thinking
Path-ology

Background

- Diagnostic service: 24/7, 365 days per year
- Population served: >2.5 million
- Workload: 970,000 pa
- Isolation, identification and detection of medically important bacteria, viruses and parasites.

Background

- Screening and specialist service: expertise in biological agent detection
- Clinical advice -on the diagnosis, management & treatment of infections, with regular ward rounds on intensive care etc.
- Infection control- MRSA isolation and Clostridium difficile toxin screening

"All these years we battled the bugs, and all it took was a sign?"

What is Lean?

LEAN

- Perfected by Toyota – from 1928
- ‘Lean’ coined by Jones & Womack in 1990s

- Lean is about ***improving flow*** *and* ***eliminating waste***
- getting the right things to the right place,
- at the right time,
- in the right quantities,
- while minimising waste and being flexible and open to change.

- ***Customer*** at heart of the process
- Driver for Quality and Safety

LEAN?

CHANGE

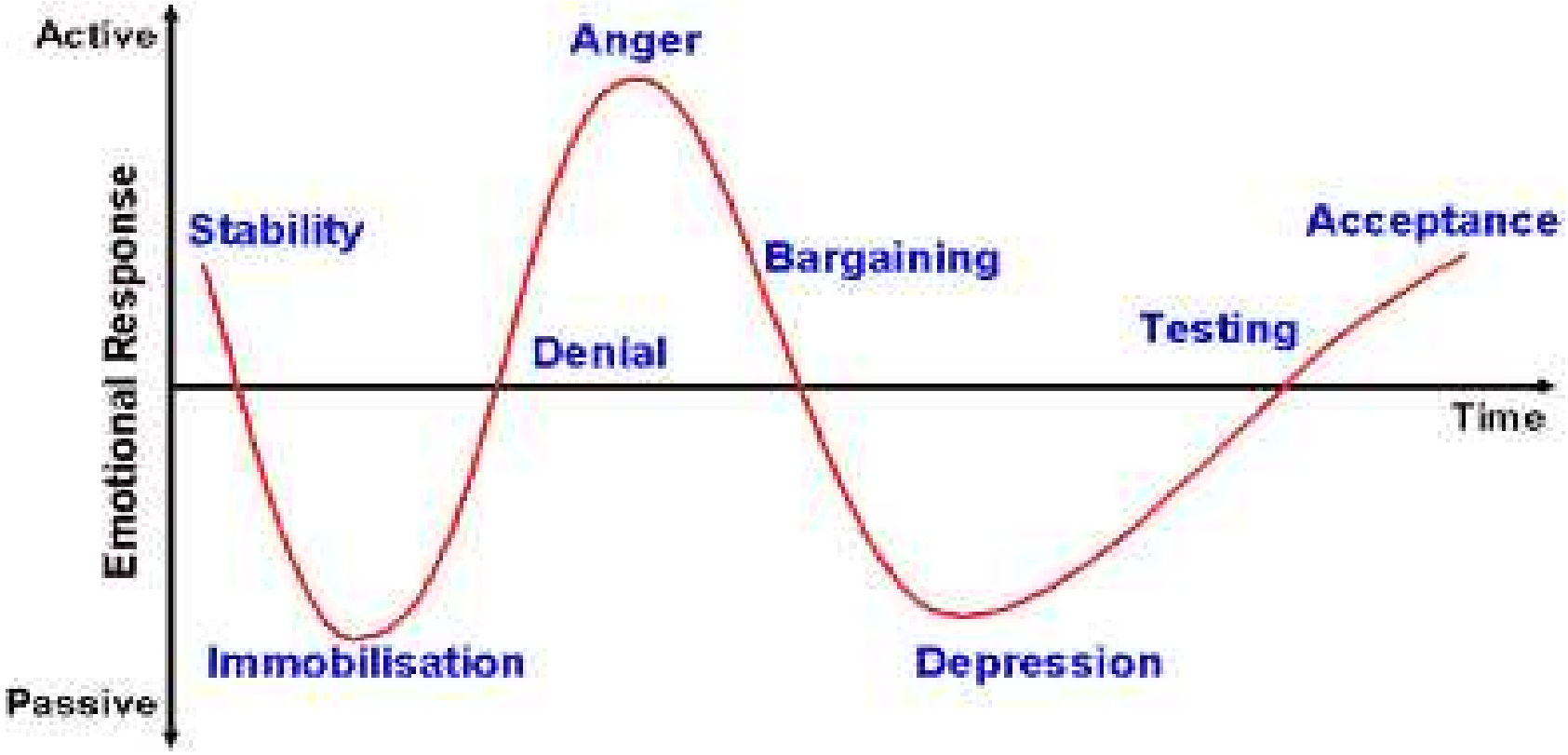
DANGER!

FEAR


RESISTANCE
© basictextures.com 00382


LEAN
Microbiology

The Path-ology

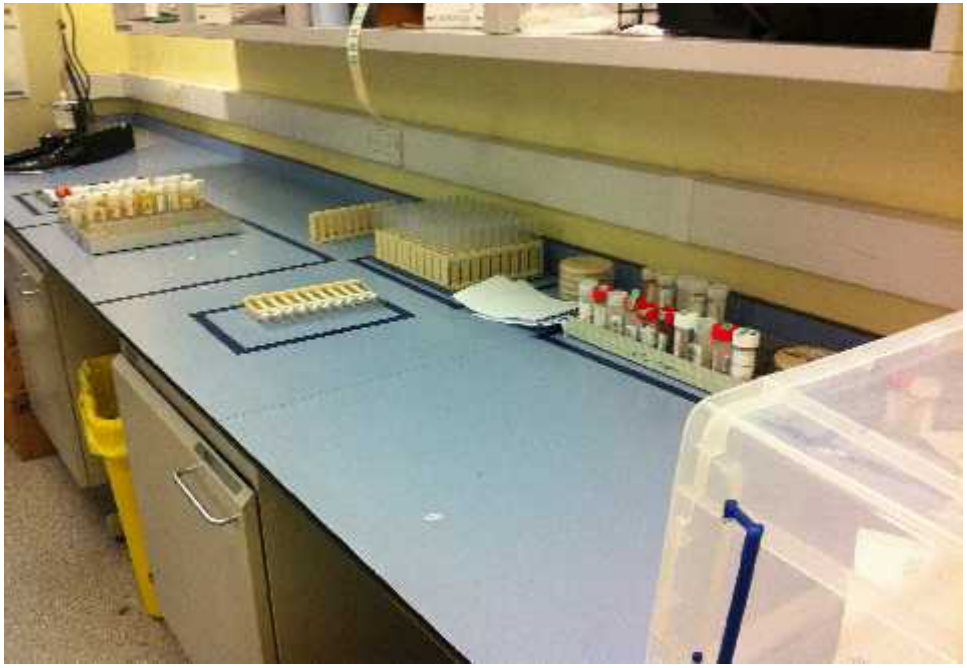


The Path-ology

- High Volume testing – Urines and MRSA screening
- Highly visible – Reception area
- Highly productive – What matters to me!
- Highly effective!

High Volume testing – Urines and MRSA screening

One piece flow

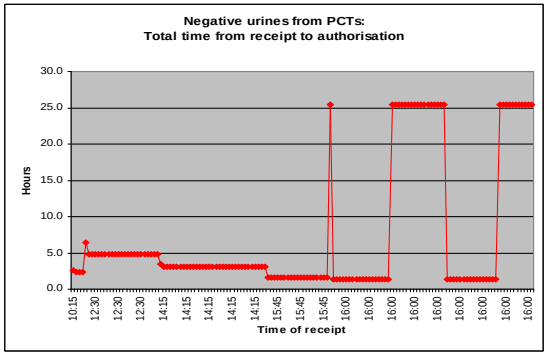


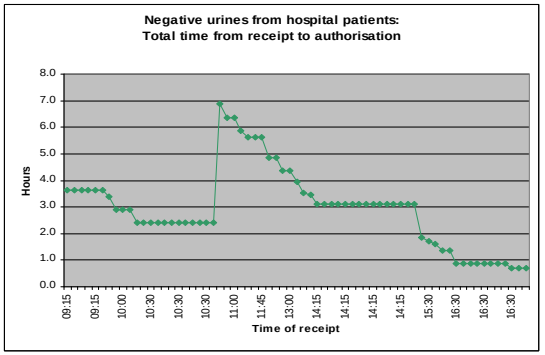
Results from Urines

% reported day of receipt			% reported within 24 hrs			% reported within 48 hrs		
Baseline Aug-11	Sept-11	Oct-11	Baseline Aug-11	Sept-11	Oct-11	Baseline Aug-11	Sept-11	Oct-11
40.9	**39.8**	**39.2**	**58.7**	**66.1**	**77.4**	**85.9**	**86.9**	**95.7**

Results from Reception

Then

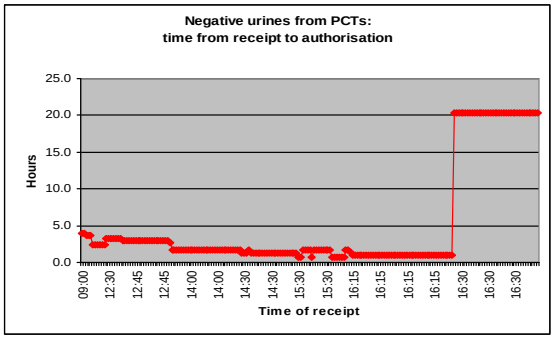


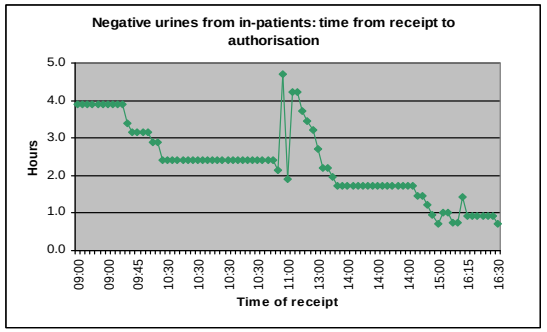


Most GP specimens' turnaround time (TAT) < 5h (median=3.1h). Overnight storage results in TAT *c.* 25h

Most in-patient specimens' TAT <4h, but may be as high as 7h (median=3.1h).

Now





Most GP specimens' turnaround time (TAT) < 4h (median=1.7h). Overnight storage results in TAT *c.* 20h

i.e. **median TAT reduced by 45%** (mean TAT reduced by 29%)

Majority of in-patient specimens' TAT<3h (median=2.4h)

i.e. **median TAT reduced by 23%** (mean TAT reduced by 23%)

Overall, **TAT for all negative samples has been reduced by 45%** (median 3.1h to 1.7h)

Number of samples processed via UF100 **increased by 11%** on dates sampled.

Highly visible – Reception area

Highly visible – Reception area

Improved process

- Post-Lean, there is improved prioritisation of in-patient samples, as the time from receipt to UF100 processing has been reduced by 50% (median 0.8h to 0.4h) and time from receipt to registration has been reduced by 25% (median 0.8h to 0.6h).
- Removal of excessive checking (demo-checking) has reduced the processing time for negative samples by 43% (from 2.3h to 1.3h).
- Positive feedback from staff as process runs more smoothly and calmly.

The Path - Key Challenges

- Maintaining momentum / energy / time
- Communication with all stakeholders
- Support laboratory staff and stakeholders

CANCER DIAGNOSTICS HEART LUNG STROKE

NHS Improvement Diagnostics

Right First Time?

The cost of poor quality

Suzanne Horobin

National Improvement Lead - Diagnostics

THE SUNDAY TIMES 100 BEST NOT-FOR-PROFIT ORGANISATIONS TO WORK FOR 2012

POSITION 50 ★★

DiagnosticsImprovement

NHS Improvement

Who are NHS Improvement?

- DH partnership - aligned to support delivery of national strategies and priorities - support QIPP Pathology Programme
- Key sponsors – Prof Sir Mike Richards, Prof Roger Boyle, Dr Ian Barnes, Dr Erika Denton, Prof Sue Hill
- Over 10 years improvement experience, practical knowledge and “how to” approach to improve quality and productivity
- Last 12 months – supported 240+ sites - improving Cancer, Diagnostics, Heart, Lung and Stroke services

DiagnosticsImprovement

NHS Improvement

NHS Improvement - Diagnostics

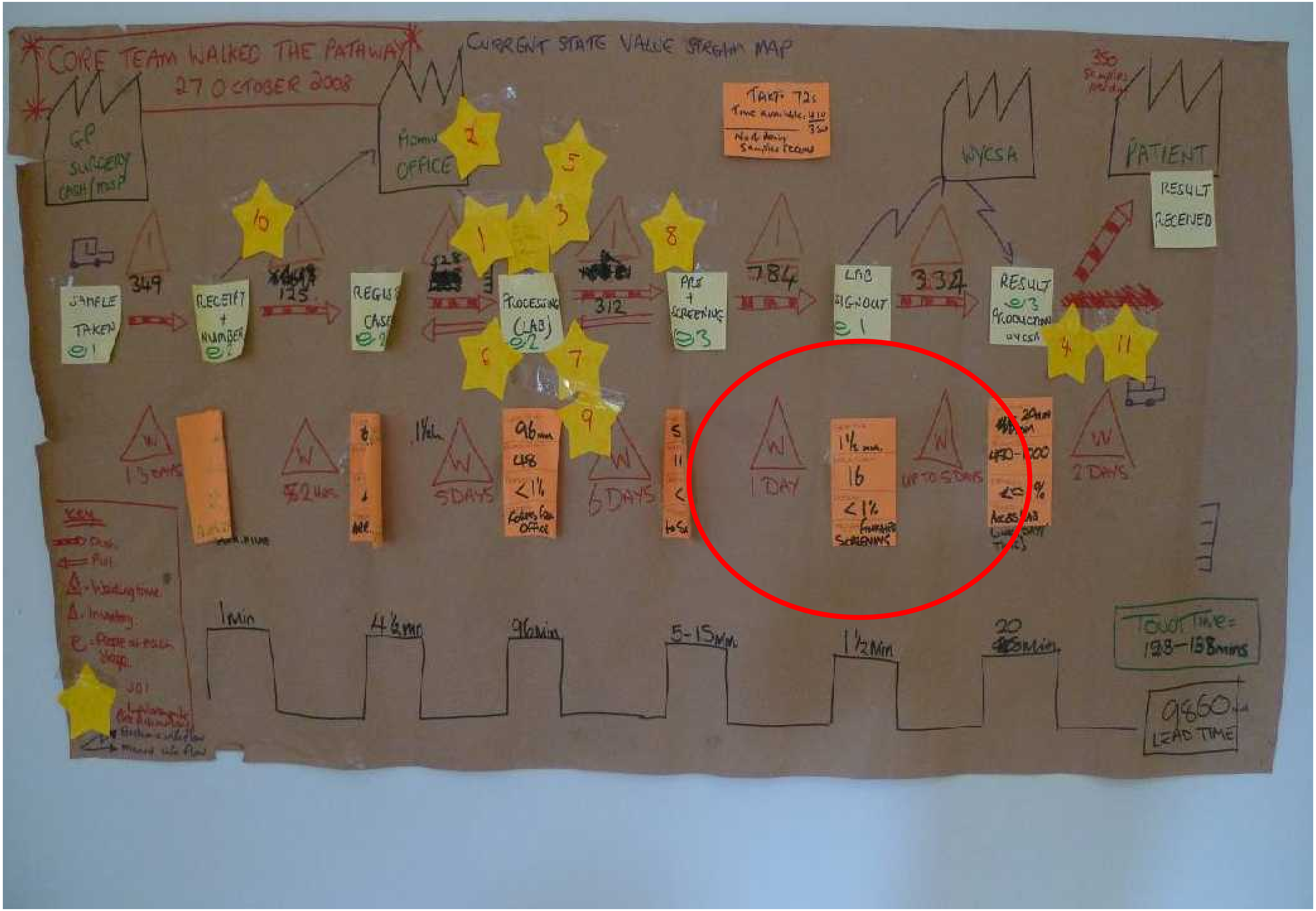
- Proven success in Pathology
  - 95% Histopathology results in 7 days, 50% in 3 days – Whipps Cross
  - 100% Cytology results in 14 days, >50% in 7 days – Phase 1/2 pilot sites
  - 50% improvement in Phlebotomy outpatient waiting times - Doncaster
  - 90% reduction in Microbiology TAT – Stoke on Trent
  - 43% reduction in Histopathology TAT – Calderdale & Huddersfield
  - 62% reduction in Haematology TAT – St James Hospital
  - 21% reduction of inappropriate demand urines – St Helens & Knowsley
- Improvements in safety and quality
- Increased capacity and space utilisation
- Improved staff engagement
- National Clinical Lead / Associate support

Right first time?

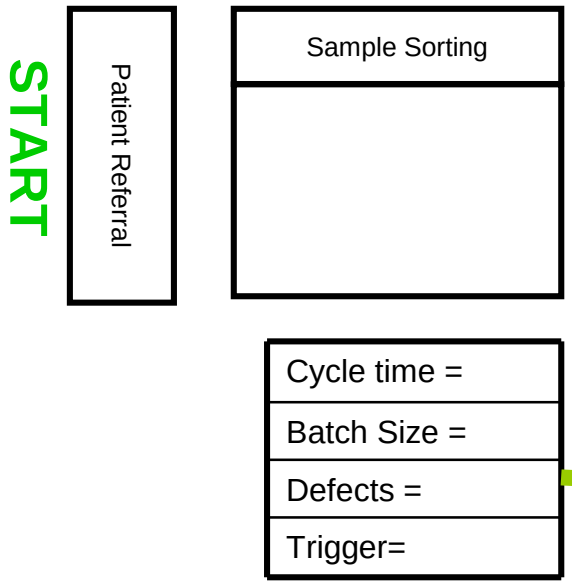
What's the problem?

- University Hospitals Coventry and Warwick Cytology – 47% forms missing sender code
- Hull and East Yorkshire Hospitals NHS Trust – 154 cytology samples in 2 weeks received with errors
- Taunton & Somerset NHS Foundation Trust – Musgrove Park Histopathology – 28% specimen receipt / data entry errors
- Nottingham University Hospital NHS Trust – 8941 microbiology samples rejected due to defects (12.8%)

How do we know?


CORE TEAM WALKED THE PATHWAY
27 OCTOBER 2008
CURRENT STATE VALUE STREAM MAP
GP SURGERY
HOME OFFICE
WYCSA
PATIENT
RESULT RECEIVED
SAMPLE TAKEN
RECEIPT + NUMBER
REGIS CASE
PROCESSING (LAB)
PAS + SCREENING
LAB SIGN OUT
RESULT PRODUCTION
349
125
312
784
332
1 DAY
UP TO 5 DAYS
2 DAYS
5 DAYS
6 DAYS
1 min
96 min
5-15 min
1½ min
TOTAL TIME = 128–138 mins
9860 LEAD TIME
KEY
Push
Pull

Insert the measurements - Gather **real data** - this is your chance to **really understand** what's happening.



Defects – What percentage is not right first time and requires further work?

Date	Lab number or NHS number	Patient name does not match PAS	Patient address does not match PAS	Form and pot mismatch	Unlabelled pot	Leaking pot	No sender code	No report destination info	No clinical details	Insufficient sample volume	No date / time sample taken	Other	Specimen Rejected	Specimen Processed	Total estimated staff time to resolve issue

- Manual data collection
- One week
- Tick every error that occurs
- Capturing lab number will enable root cause analysis later
- Errors as a % of total workload for the week

So what?

Result for patient?

- Repeat testing
- Delayed diagnosis
- Potential for incorrect diagnosis / treatment

Result for department?

Cost of poor quality - COPQ

DiagnosticsImprovement NHS Improvement NHS

Cost of poor quality - COPQ

Ideal – every case is booked in RIGHT FIRST TIME

- Dealing with a typical error requires a 5 minute search of the current laboratory database followed by a 5 minute telephone call to find the correct information = 10 mins per error
- 5% of cases have errors requiring this rework
- 5% of annual workload of 50,000 samples = 2500
- Handling time 2500 samples x 10 minutes = 25000 minutes
- Or 416 hours
- Or 55.5 WORKING DAYS
- At midpoint Band 3 = £5170.88

This is the cost of poor quality

What do we do about it?

“ALL USERS” email

DOESN’T WORK!!!

how many emails do you get every day?

GET MORE DATA

DiagnosticsImprovement

NHS Improvement

A weeks worth of data tells you enough

GO SEE

Now we’re getting there!


© Original Artist
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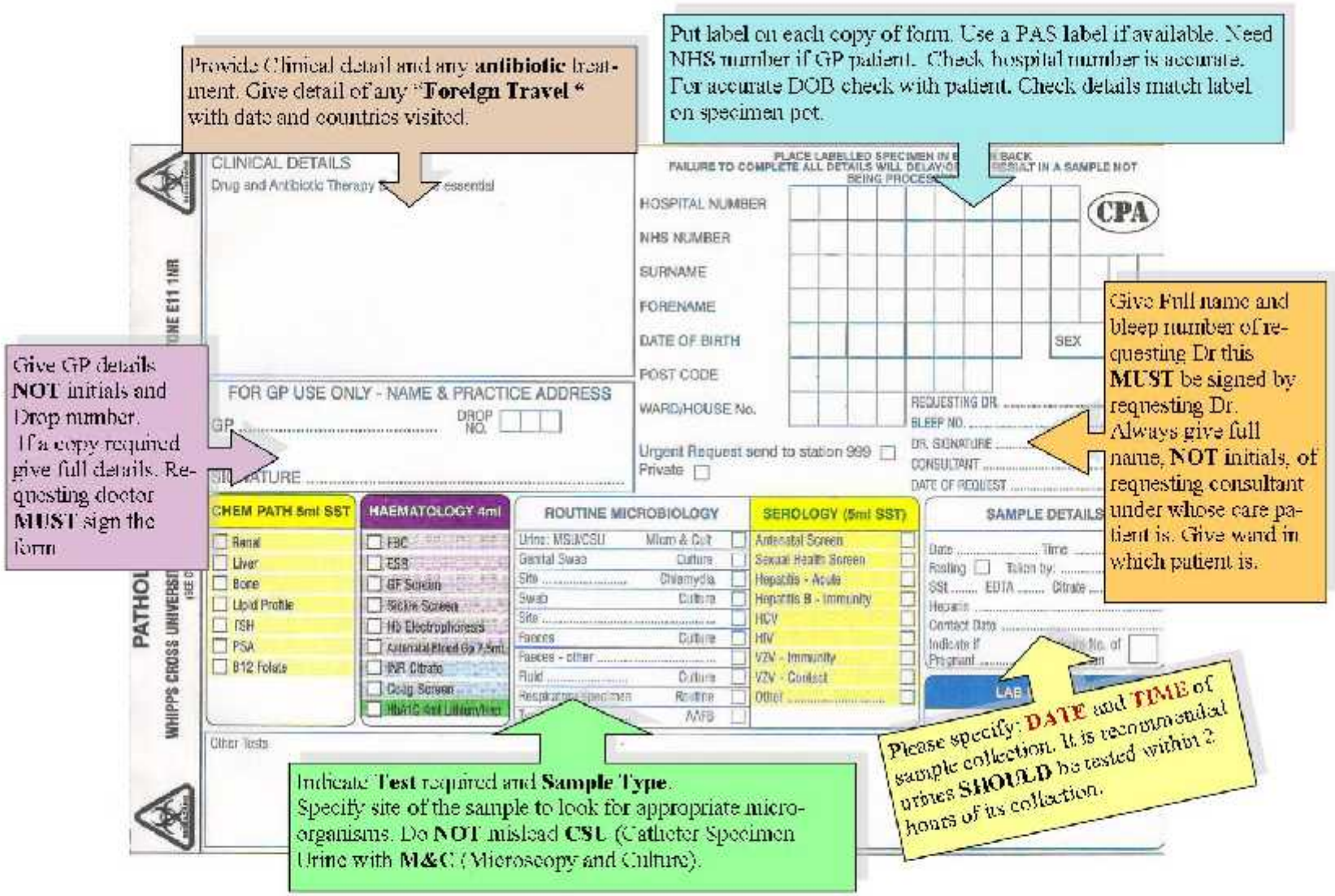
www.CartoonStock.com
I didn't mean a p-e-a sample.
search ID: dre2547
Reynolds


Provide Clinical detail and any **antibiotic** treatment. Give detail of any "**Foreign Travel**" with date and countries visited.
Put label on each copy of form. Use a PAS label if available. Need NHS number if GP patient. Check hospital number is accurate. For accurate DOB check with patient. Check details match label on specimen pot.
CLINICAL DETAILS
Drug and Antibiotic Therapy
HOSPITAL NUMBER
NHS NUMBER
SURNAME
FORENAME
DATE OF BIRTH
SEX
POST CODE
WARD/HOUSE No.
CPA
FOR GP USE ONLY - NAME & PRACTICE ADDRESS
GP
DROP NO.
Urgent Request send to station 999
Private
REQUESTING DR
BLEEP NO.
DR. SIGNATURE
CONSULTANT
DATE OF REQUEST
Give GP details **NOT** initials and Drop number. If a copy required give full details. Requesting doctor **MUST** sign the form
Give Full name and bleep number of requesting Dr this **MUST** be signed by requesting Dr. Always give full name, **NOT** initials, of requesting consultant under whose care patient is. Give ward in which patient is.
CHEM PATH 5ml SST
Renal
Liver
Bone
Lipid Profile
TSH
PSA
B12 Folate
HAEMATOLOGY 4ml
FBC
ESR
GF Screen
Sickle Screen
Hb Electrophoresis
INR Citrate
Coag Screen
ROUTINE MICROBIOLOGY
Urine: MSU/CSU
Mlum & Cult
Genital Swab
Culture
Site
Chlamydia
Swab
Culture
Site
Faeces
Culture
Faeces - other
Fluid
Culture
Routine
AAFB
SEROLOGY (5ml SST)
Antenatal Screen
Sexual Health Screen
Hepatitis - Acute
Hepatitis B - Immunity
HCV
HIV
VZV - Immunity
VZV - Contact
Other
SAMPLE DETAILS
Date
Time
Fasting
Taken by:
SST
EDTA
Citrate
Heparin
Contact Date
Indicate if Pregnant
No. of
LAB
Other Tests
Indicate **Test** required and **Sample Type**. Specify site of the sample to look for appropriate micro-organisms. Do **NOT** mislead **CSU** (Catheter Specimen Urine with **M&C** (Microscopy and Culture).
Please specify: **DATE** and **TIME** of sample collection. It is recommended urines **SHOULD** be tested within 2 hours of its collection.

Clinical Microbiology
Bacteriology
Virology
Parasitology
Mycology

Histopathology

Automated Blood Sciences
Clinical Chemistry
Haematology
Blood Transfusion

Whipps Cross University Hospital NHS
NHS Trust

It's your Lab

PATHOLOGY SAMPLES

SPECIMEN TYPE	CONTAINER TYPE	STORAGE CONDITIONS
BLOOD		
FAECES		
SWABS		
URINE		
CSF		

Submit a SEPARATE sample (SST tube) from chemistry otherwise infectious disease serology will NOT be performed

CSF, Blood Cultures Bottles and Stool Samples MUST NOT be sent via the Pneumatic tube

CSF: do NOT store, send to the Lab ASAP

Where to find us

Pathology Reception is located on the 2nd floor accessible from section 2 off the main hospital corridor in the Orange Zone

Pathology reception:
Monday – Friday 9.00am – 5.00 pm
Telephone 020 8535 8050 Ext 5252

Submit a SEPARATE URINE sample from chemistry otherwise Microbiology investigations will NOT be performed

Microbiology:

Chemistry:

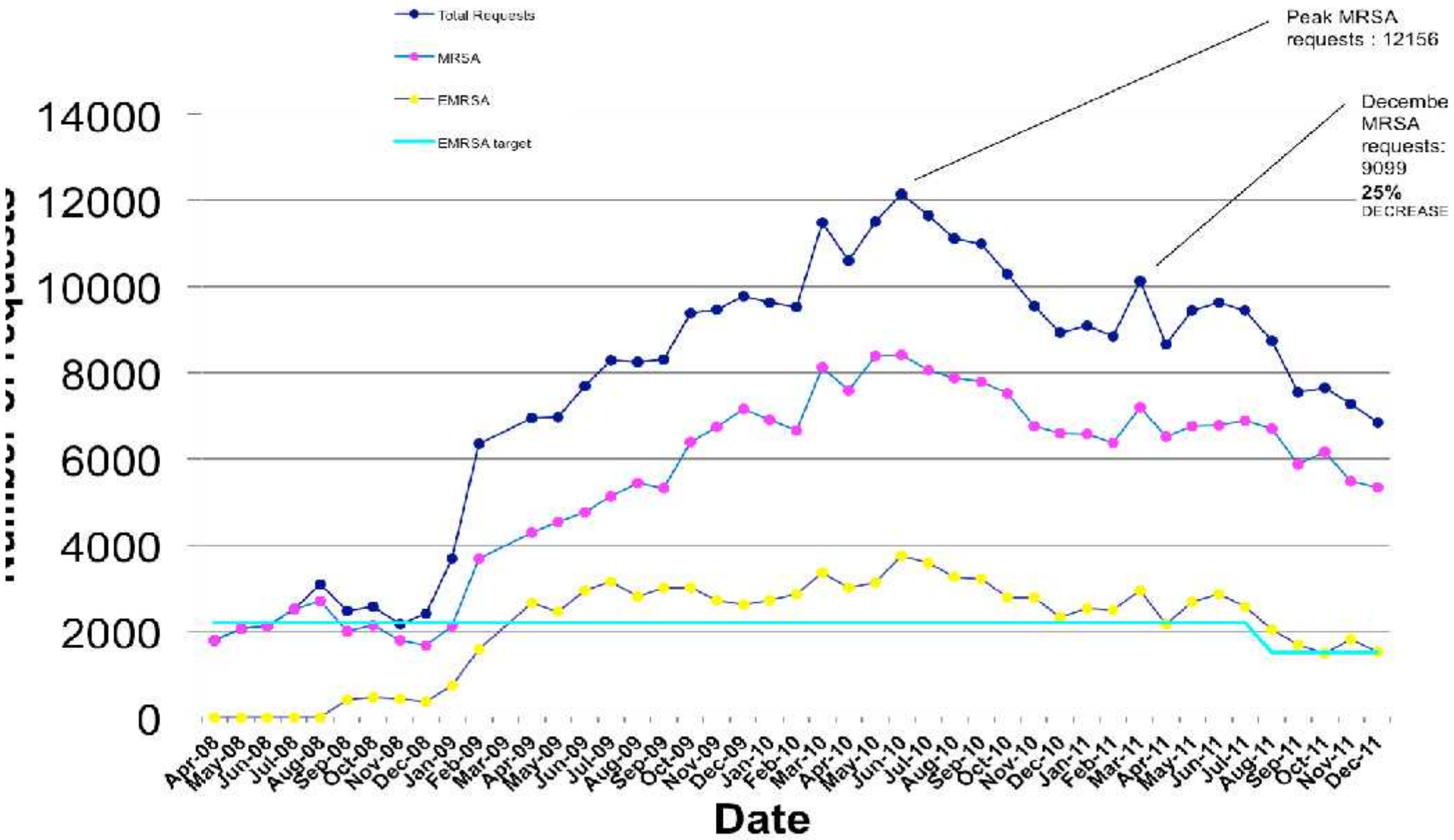
TUBE TOP	LABORATORY USE
PURPLE EDTA	
PINK	
	Cytology in the bottles
	Histology specimens

It's your hospital

Does it really work?

- University Hospitals Coventry and Warwick Cytology – reduction in errors reduced booking in time saving **1789 hours of office time per annum (240 working days)**
- Hull and East Yorkshire Hospitals NHS Trust – reduction in returned samples freed up **10 hours per month**
- Taunton & Somerset NHS Foundation Trust – Musgrove Park Histopathology – errors down from 29% to 8% so far
- Nottingham University Hospital NHS Trust – 8941 microbiology samples rejected due to defects (12.8%) – work in progress!

Total MRSA requests 2008-2011



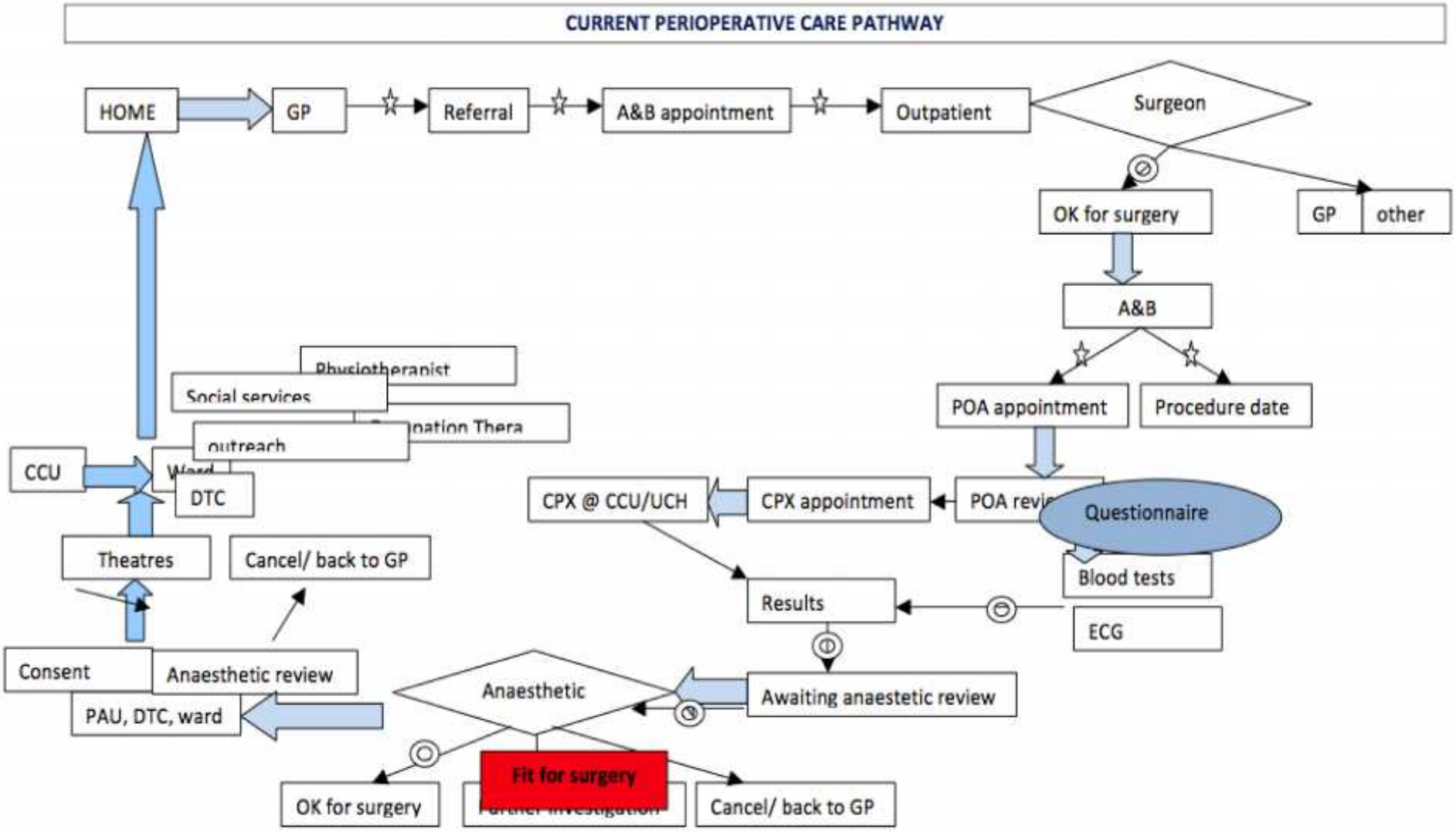
Pre-Operative Care
Assessment at Primary Care

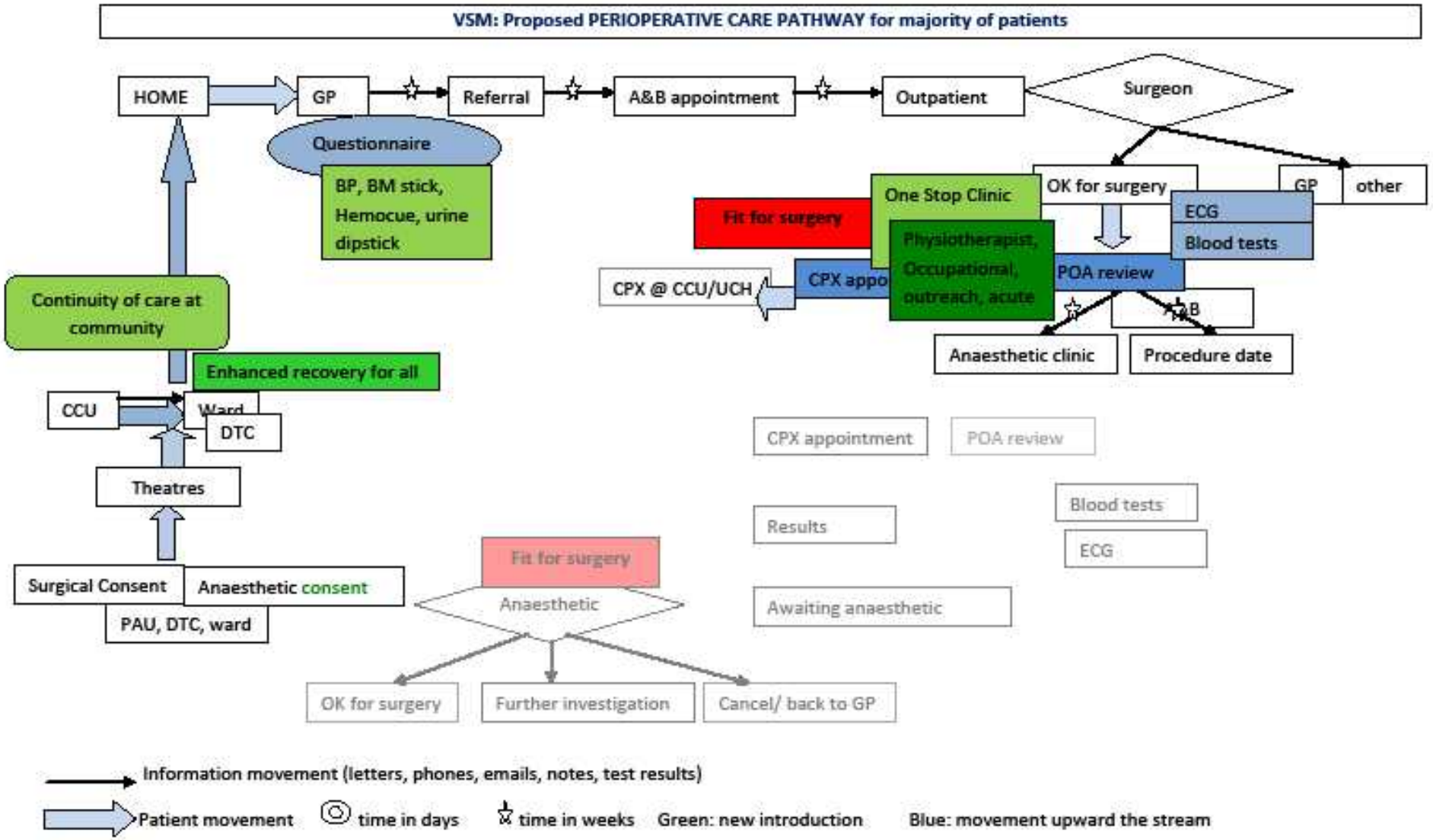
Dr Ahmed CHEKAIRI
MD, FRCA, PGDip
Consultant Anaesthetist
Whittington Health, London

Lean London
The Royal College of Surgeons
21 March 2012

Old Paradigm

- Pre-operative assessment is the process by which patients who are booked in for an elective surgical procedure undergo an anaesthetic assessment to evaluate their fitness for surgery


CURRENT PERIOPERATIVE CARE PATHWAY
HOME
GP
Referral
A&B appointment
Outpatient
Surgeon
OK for surgery
GP
other
A&B
POA appointment
Procedure date
Questionnaire
Blood tests
ECG
Results
CPX appointment
CPX @ CCU/UCH
Awaiting anaestetic review
Anaesthetic
Fit for surgery
OK for surgery
Cancel/ back to GP
Consent
Anaesthetic review
PAU, DTC, ward
Theatres
Cancel/ back to GP
CCU
DTC
outreach
Social services


VSM: Proposed PERIOPERATIVE CARE PATHWAY for majority of patients
HOME
GP
Referral
A&B appointment
Outpatient
Surgeon
Questionnaire
BP, BM stick, Hemocue, urine dipstick
OK for surgery
GP
other
Fit for surgery
One Stop Clinic
ECG
Blood tests
Physiotherapist, Occupational, outreach, acute
CPX @ CCU/UCH
CPX appo
POA review
A&B
Anaesthetic clinic
Procedure date
Continuity of care at community
Enhanced recovery for all
CCU
Ward
DTC
Theatres
Surgical Consent
Anaesthetic consent
PAU, DTC, ward
Fit for surgery
Anaesthetic
OK for surgery
Further investigation
Cancel/ back to GP
CPX appointment
POA review
Blood tests
Results
ECG
Awaiting anaesthetic
Information movement (letters, phones, emails, notes, test results)
Patient movement
time in days
time in weeks
Green: new introduction
Blue: movement upward the stream

Reversible Causes

- Blood pressure
- Diabetes
- Infections
- Weight??
- ANAEMIA
- Smoking

New Pre-assessment Service
New Paradigm: Pre-Operative Health Evaluation and Optimisation

New set up

- One stop clinic: Health evaluation on the day decision to operate is made
- 8000 travels/year less, More than 4000 patients would go straight to surgery
- Standardised documentation with traffic light system, triggers for right investigations and right referrals
- Improving patients' safety by including checklists alerts
- Criteria-based Decision making algorithms based on best evidence and in response to National and international Governance bodies
- Systematic risk stratification= better consent=better planning=appropriate use of Intensive care

Promoting good health beyond surgery

- Pre assessment is Health MOT opportunity for surgical patients
- Improving nutritional state pre-operatively and at long-term
- Ensuring good diabetes and blood pressure control & promoting smoking cessation and sensible alcohol intake

Better patient's experience, Less travels to the Hospital, Better quality of care, Less waste

Benefits

- Active treatment of anaemia pre-operatively using intra venous iron
- Right investigations (more than 20% unnecessary investigations last year)
- Better diagnosis and more inclusive screening (Sleep apnea and mental state screenings)
- Promoting day surgery and Enhanced Recovery Care for all patients
- Systematic assessment of mobility = better post operative planning
- Minimising cancellation on day

Systematic optimization of reversible conditions such as diabetes ,HBP, infection & others

Staff

- CPD programme for nurses
- Training programme for trainees
- Consultant anesthetists run clinics
- Continuous measurement

Ahmed.chekairi@nhs.net for more information

A patient story

G.H, a self-employed, attended the Pre assessment service on 01/03/12. This was the day of the new pre assessment service trial. He was seen **soon** after surgeon told him about the need for surgery.

Health evaluation revealed one medical concern that required blood tests and an ECG. These were done on the spot in POA clinic.

He was also seen by a Consultant anesthetist at same visit.

Patient was advised of the risks of his condition and the need for treatment at long tem; he was also advised to contact his GP. Then was given a **suitable** date for his surgery

Similar patients in the past would have been added to the waiting surgical list and given 2 dates. One for surgery and another one for pre-assessment. Time interval between the 2 dates is variable. They may also have a 3rd date to see an anaesthetist consultant.

G.H would have lost 3 working days as unpaid leave even before getting his operation.

Future (near future)

- Connect and cooperate with GPs
- Align peri-operative goals between Hospital and Primary care: 'optimise as you refer'

Anaesthesia

Journal of the Association of Anaesthetists of Great Britain and Ireland

Editorials

103 The role of steroids in treating septic shock *V. Grover and J. M. Handy*

106 Surgery and cardiovascular outcomes: an untapped public health benefit that potentially saves lives *B. M. Biccard*

Original articles

110 The influence of surgery on the onset of symptomatic coronary artery disease *H. J. McFarlane, L. Girdwood, A. Bhaskar, D. Clark and N. R. Webster*

115 Adjacent central venous catheters can result in immediate aspiration of infused drugs during renal replacement therapy *K. Y. R. Kam, J. M. Mari and T. J. Wigmore*

122 The accuracy of transoesophageal echocardiography in estimating pulmonary capillary wedge pressure in anaesthetised patients *M. M. Ali, A. G. Royse, K. Connelly and C. F. Royse*

132 Easy and difficult nasal intubation – a randomised comparison of Macintosh vs Airtraq® laryngoscopes *G. St. Mont, I. Biesler, R. Pförtner, C. Mohr and H. Groeben*

139 A randomised trial comparing the laryngeal mask airway Supreme™ with the laryngeal mask airway Unique™ in children *N. Jagannathan, L. E. Sohn, A. Sawardekar, E. Chang, K. E. Langen and K. Anderson*

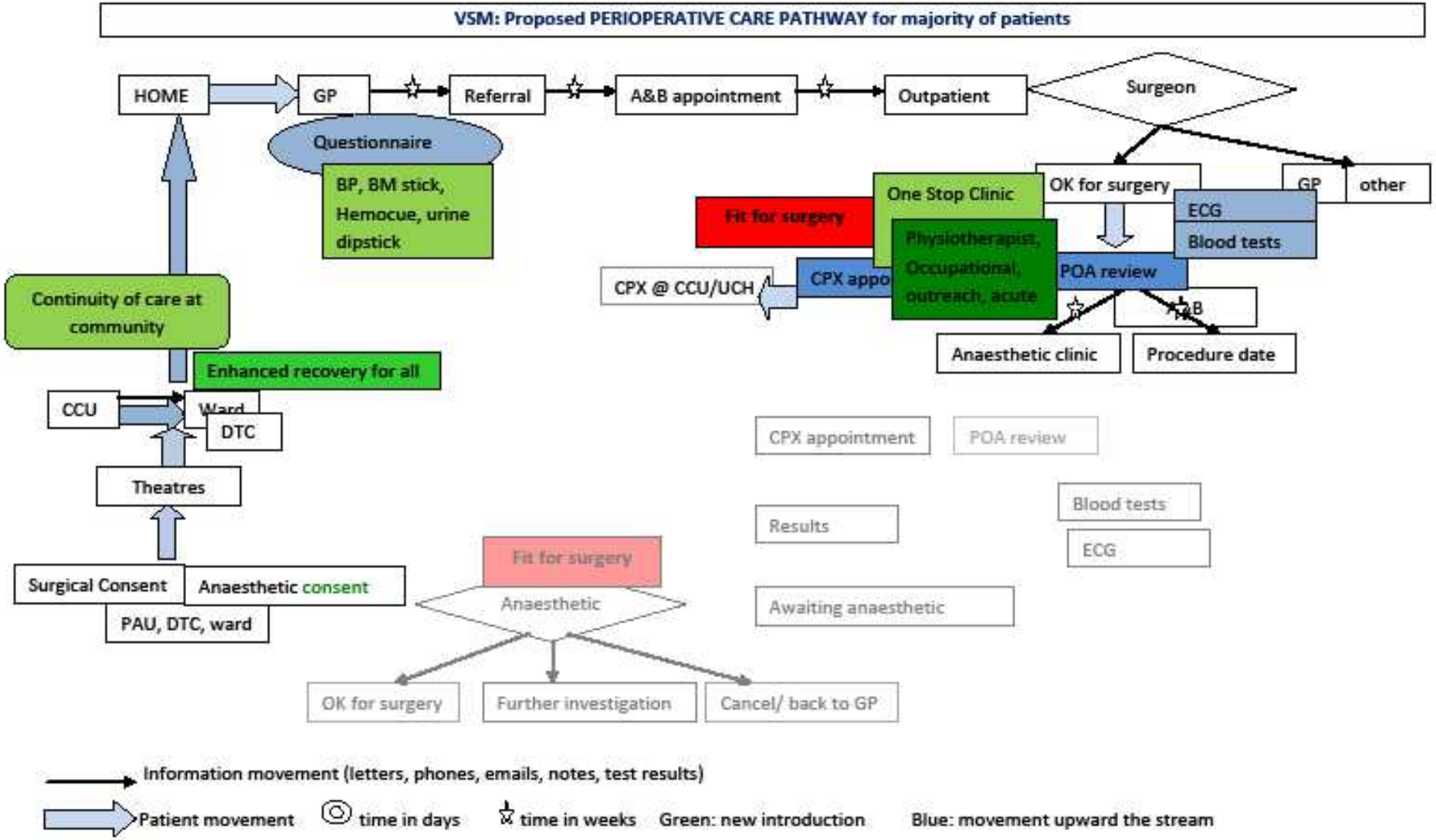
145 Limited maximal flow rate of target-controlled remifentanil infusion and induced cough *S. K. Min, D. H. Kim, H. B. Cho, B. K. Moon and J. Y. Kim*

149 The influence of pre-admission hypoglycaemic therapy on cardiac morbidity and mortality in type 2 diabetic patients undergoing major non-cardiac surgery: a prospective observational study *D. Bolliger, M. D. Seeberger, G. Lurati Buse, P. Christen, E. Seeberger, W. Ruppen and M. Filipovic*

158 Development of workplace-based assessments of non-technical skills in anaesthesia *G. V. Crossingham, P. J. A. Sice, M. J. Roberts, W. H. Lam and T. C. F. Gale*

Table 2. Individual index operation types vs matched controls and incidences of myocardial infarction (MI) and acute coronary syndrome (ACS) in index surgery patients and controls studied for a minimum of 3 years after surgery. Values are number (proportion).

	Cases	Control
Joint surgery		
n	43 183	43 183
MI/ACS within 3 years	781 (1.8%)	830 (1.9%)
Subsequent MI/ACS	1900 (4.4%)	2057 (4.8%)
Deaths (all cause)	6034 (14.0%)	10 949 (25.4%)
Disc surgery		
n	1676	1676
MI/ACS within 3 years	34 (2.0%)	31 (1.8%)
Subsequent MI/ACS	83 (5.0%)	85 (5.1%)
Deaths (all cause)	205 (12.2%)	324 (19.3%)
Laparoscopic Cholecystectomy		
n	8485	8485
MI/ACS within 3 years	107 (1.3%)	141 (1.7%)
Subsequent MI/ACS	286 (3.4%)	339 (4.0%)
Deaths (all cause)	682 (8.0%)	1759 (20.7%)
Herniorraphy		
n	20 544	20 544
MI/ACS within 3 years	364 (1.8%)	519 (2.5%)
Subsequent MI/ACS	979 (4.8%)	1243 (6.1%)
Deaths (all cause)	2802 (13.6%)	5525 (26.9%)
Upper GI endoscopy		
n	109 350	109 350
MI/ACS within 3 years	2153 (2.0%)	2268 (2.1%)
Subsequent MI/ACS	5146 (4.7%)	5621 (5.1%)
Deaths (all cause)	27 203 (24.9%)	28 618 (26.2%)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GP
other
ECG
Blood tests
Fit for surgery
One Stop Clinic
Physiotherapist, Occupational, outreach, acute
CPX @ CCU/UCH
CPX appo
POA review
A&B
Anaesthetic clinic
Procedure date
Continuity of care at community
Enhanced recovery for all
CCU
Ward
DTC
Theatres
CPX appointment
POA review
Blood tests
Results
ECG
Fit for surgery
Surgical Consent
Anaesthetic consent
PAU, DTC, ward
Anaesthetic
Awaiting anaesthetic
OK for surgery
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G.H would have lost 3 working days as unpaid leave before getting his operation!

Your Questions on Lean

We have low morale and no one is willing to change, what can I do?

Can Lean fail?, and for what reason?

What the one thing that makes the biggest difference?

What is the impact on CCG on end to end transformation?

We have no budget to start Lean – what can we do?

What's Next?

- **Today's presentation and feedback survey sent out by email within 48 hours**
- **The Next Lean London Forum will be held in September 2012.**
  - Register at www.leanlondon.org.uk
  - We will send out reminders to all participants from today
  - We have a Lean Midland Forum on 12 June 2012 taking place in Birmingham. Register at www.leanmidland.org.uk
  - If you'd like to take up one our presentation slots, please do let us know. We are keen to hear from Community Trust and GP Groups
- **Find us on Linked In and Twitter - LeanNHS**

Big Thanks To Our Presenters

Suzanne Horobin

Mathew Diggle

Ahmed Chekairi

..and to you all for attending

Thanks to Our Sponsors

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