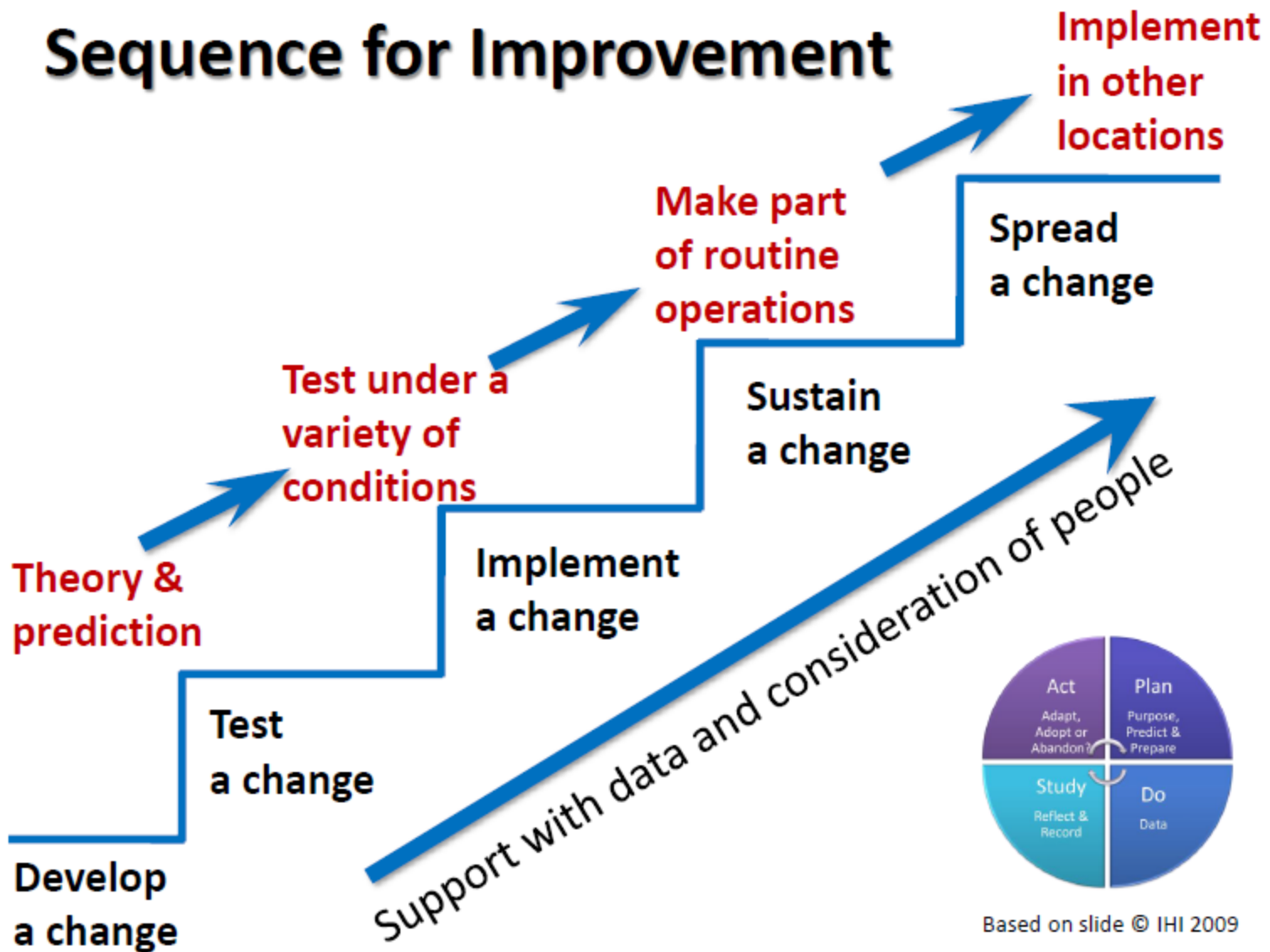


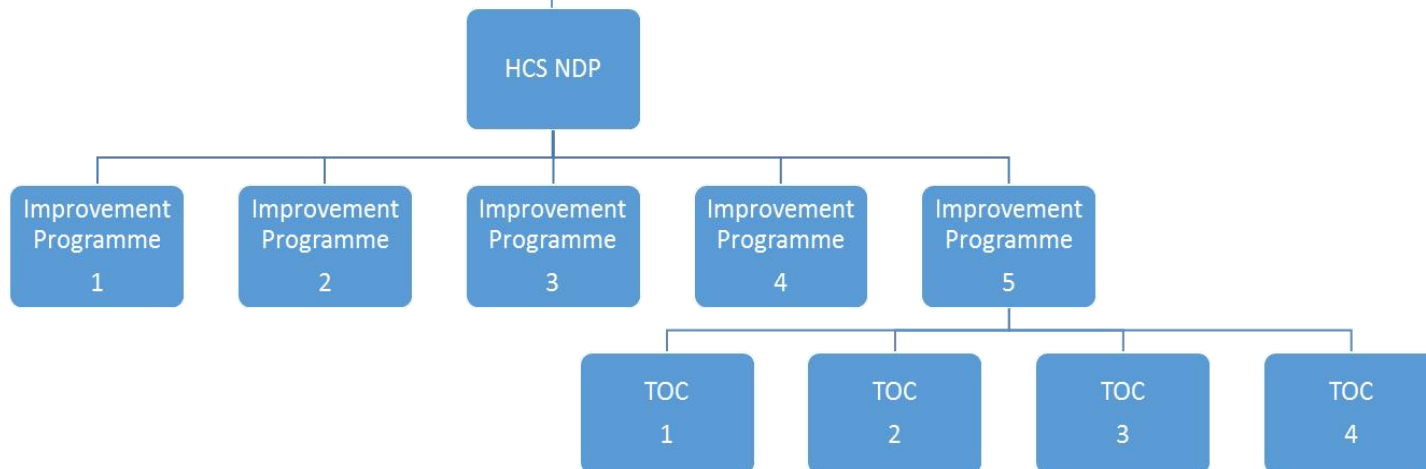


**Scotland's
Healthcare Science
Approach to
Quality Improvement**

Sequence for Improvement



What is the HCS NDP?

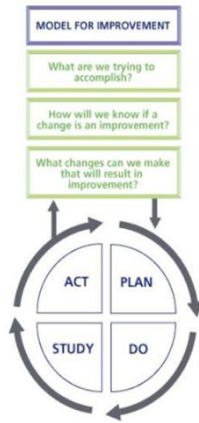


How can I help to deliver on the NDP ambitions?

- Community of Practice for Healthcare Science on the Knowledge Network – assessed at <http://www.knowledge.scot.nhs.uk/hcsleadcommunity.aspx>



Read the HCS NDP



Decide on your Test Of Change



Share with your HCS Lead, Forum, Champion...



Share with the National Team



Spread Nationally



Healthcare Science in Scotland



Resource Library

Blogs

Discussions

Search

Home

HCS Leads

National Monthly Meetings

NDP 2015-2020

HCS Activity in your Board

HCS National Event

Clinical Physiology Network

Home

HCS Activity in your Board

HCS Activity in your Board

NHS Lothian - Healthcare Science Strategy Event - 25th Oct 2017

NHS Grampian Healthcare Science AGM - 12th Oct 2017

Healthcare Science Glasgow Impact Event - NHS GG+C 15th March 2017

Healthcare Science National Delivery Plan Engagement Event - NHS Dumfries and Galloway - 6th March 2017

Healthcare Science National Delivery Plan Engagement Event - NHS Glasgow - 5th Sept 2016

Healthcare Science National Delivery Plan Engagement Event - NHS Tayside - 4th March 2016

Healthcare Science National Delivery Plan Engagement Event - NHS Ayrshire and Arran - 17th Nov 2015

Healthcare Science National Delivery Plan Engagement Event - NHS Highlands (with VC for Western Isles and Orkney/Shetland) - 2nd Oct 2015

Healthcare Science National Delivery Plan Engagement Event - NHS Dumfries and Galloway - 2nd June 2015

Boards

Ayrshire and Arran

Borders

Dumfries and Galloway

Fife

Forth Valley

Golden Jubilee

Grampian

Greater Glasgow and Clyde

Highland

Lanarkshire

Lothian

National Services for Scotland

Orkney

Scottish Improvement Leader Programme - NES



- Find on TURAS Learn
- The aim of the ScIL Programme is to enable individuals to:
 - design, develop and lead improvement projects,
 - lead and generate support for change, and
 - provide expert QI support and advice in their organisations.



Signposting:

<https://learn.nes.nhs.scot/813/quality-improvement-zone/scottish-improvement-leader-programme-scil>

<http://www.knowledge.scot.nhs.uk/hcsleadscommunity.aspx>

<http://www.qihub.scot.nhs.uk/improvement-journey/explore.aspx>

<http://www.qihub.scot.nhs.uk/education-and-learning/qi-e-learning.aspx>

<http://www.healthcareimprovementscotland.org/>

<http://ihub.scot/>

<http://www.ihl.org/Pages/default.aspx>

Quality Academy

QI skills

- Improving the patient pathway for patients referred from GP practices to the RIE with a possible diagnosis of asthma.
- Jill MacLeod

Background

- Current practice is for GPs to have direct access to basic spirometry and reversibility only.
- Patients with asthma have variable degrees of airflow obstruction or may even have normal spirometry.
- If patients are referred with ? Asthma and they have normal spirometry we are not answering the clinical question and patients would then have to be referred to Respiratory Medicine for further investigation.

What are we trying to accomplish?

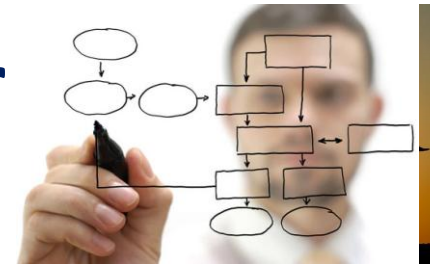


We hope to streamline the pathway for service users (GPs) leading to quicker confirmation or elimination of a diagnosis of Asthma and hence result in more appropriate and timely treatment for the patient. This could also reduce GP referrals to Respiratory Medicine for this patient group.

Aim statement: To reduce the pathway for patients with a possible new asthma diagnosis and hence also reduce the number of referrals to Respiratory Medicine by December 2017.

Teams involved: Respiratory Physiology (RIE) perform the investigations, Respiratory Medicine Consultant(RIE) for advice and GPs in primary care who refer the patient initially.

What have you done to understand your system?



We completed a process map of the current diagnostic pathway and created a new pathway for the trial period.

This showed the potential to reduce the time of referral to results from a maximum of 30 weeks to a maximum of 15 weeks.

GP Referrals for patients with a possible diagnosis of asthma are sent to Respiratory Physiology and an appointment is allocated (WTG<8 weeks)

Patient attends for tests

Results are normal-reported back to GP with advice to refer to Respiratory Medicine if patient still symptomatic (< 1 week)

GP refers to Respiratory Medicine and an appointment is allocated (WTG< 12 weeks)

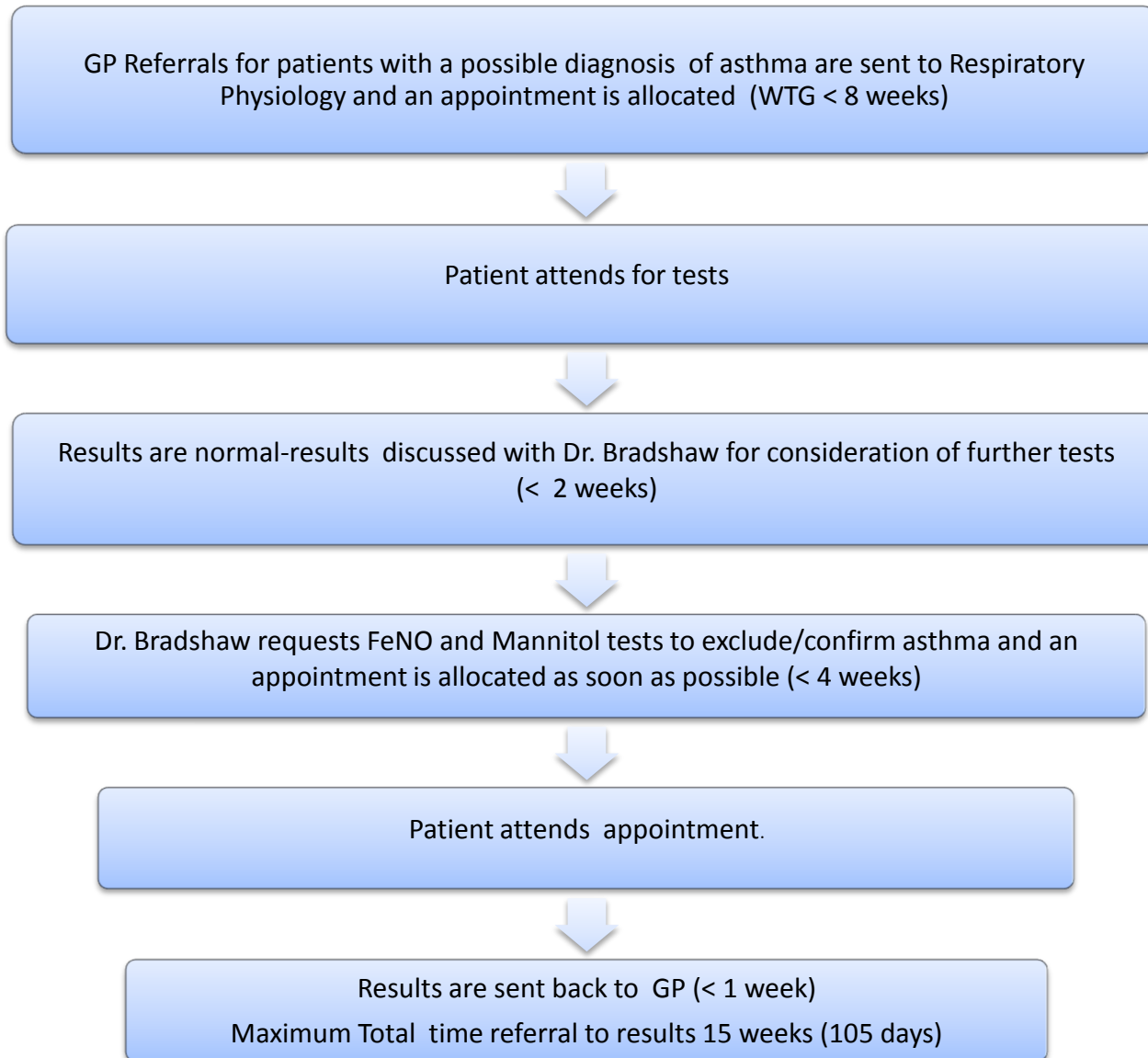
Patient attends clinic appointment. and the Dr requests further tests

Appointment allocated for further tests.
(WTG < 8 weeks)

Results are sent back to referring Dr
< 1 week

Dr communicates results to GP with advice on treatment.
Maximum total time referral to results 30 weeks (210 days)

Proposed Pathway



Additional Investigations

- Fractional Expired Nitric Oxide (FeNO)

This is a surrogate marker of eosinophilic inflammation and a good predictor of a corticosteroid response. (Time < 15 mins, Consumable Cost £6)

- Mannitol Challenge

This is a bronchial provocation test which works by increasing the osmolarity of the bronchial mucosa. (Time taken ~1 Hr, Consumable cost £47.90, Total Physiologist cost ~ £23)

What have you done to understand your system?

- We looked at current referrals to our service to get an idea of the percentage of patients referred with this possible diagnosis.
- Approximately 20% of our GP referrals are for ? Asthma and approximately half of these would have normal spirometry.
- We completed a driver diagram with the Physiology team to identify other areas of improvement.

Aim

Primary Drivers

Secondary Drivers

Change Ideas

To improve the patient pathway for patients referred from primary care to the RIE for a possible diagnosis of asthma

Patient assessment

Triage referrals and group those with similar possible diagnosis

Collect results where there is no definitive diagnosis and results are normal.

Arrange e-referral by Consultant for further tests

Ask about PEF monitoring and symptoms

Allocate 2nd appointments for Challenge and FeNO as soon as possible

Could we allocate enough time at initial appointment to do everything same day if possible. Would the GP initial referral be sufficient to cover us doing the extra tests, i.e. Physiologist lead decision about whether to test further.

Should we be doing reversibility on all these patients even if baseline above predicted and should we do FeNO as routine for these patients, hence possibly eliminating need for Challenge.

Could we devise a questionnaire for the patients to record their symptoms.

If we do need to make another appointment could we arrange this when patient is there at first visit hence arranging a suitable time with them and increasing likelihood of attendance.

Communication

Communication to patient re: possibility of further investigations and reason

Communication of results to GPs with advice on further management

Communication with Respiratory Consultant with regards results and further tests

Meeting with staff to ensure we are all giving the same information to the patients, perhaps giving out an information leaflet so they understand why we are doing the extra tests.

Standardised reporting of additional tests and additional advice on management.

Education and Awareness

Staff education re: communicating results to patient

Educate the GPs with regards the test results/future management

Feedback questionnaires to GPs with results for feedback

Staff Engagement

Leaflet for patient

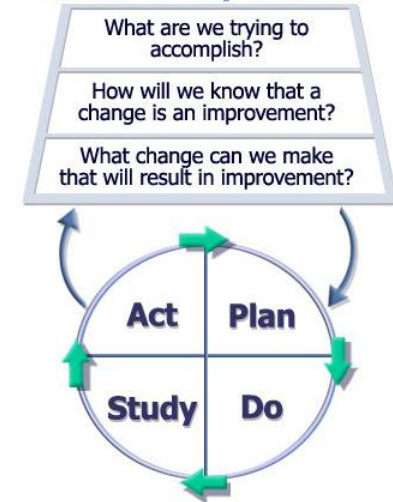
More advice on reports to GPs with regards the test results, future assessment etc

Evaluate feedback from GPs to see if it has made a difference

Share project data at monthly meetings with department staff. Evaluate data to see if impact on service.

How will we know a change is an improvement?

Model for Improvement



We can measure the time in weeks from referral to result for each patient.

We are distributing a questionnaire to the GPs to get feedback on the changes.

We can look at approximate time/money saved from reduction in Respiratory Medicine referrals.

Successes, challenges and next steps?



Successes:

We have been able to identify patients who require additional tests to help clarify their diagnosis.

When we have confirmed the diagnosis of asthma this will hopefully result in the patient receiving treatment for this much earlier than previously.

We have had some positive comments from GPs who welcome this additional information.

Successes, challenges and next steps?

Challenges :

We have been unable to directly measure the impact this has had on Respiratory Medicine referrals.

We need much longer to see if this has had an effect.

Some patients have failed to attend for the additional tests so have had to be withdrawn.

We have had a number of cancellations, particularly over the summer months.

The additional tests have resulted in increased costs and workload for the department in the short term.

Successes, challenges and next steps?

Next steps :

We could implement some of the other changes identified in our driver diagram to see if we can improve the pathway further.

e.g. We could try and allocate the second appointment when they first attend, hopefully leading to a more convenient time and less chance of non attendance.

Results - Tests performed and Waiting times

- 86 Patients were offered the additional appointments.
- 76 Patients attended for tests with 21 patients having a positive Mannitol challenge test and 30 having a high FeNO result, median 50ppb (range 26-181ppb).
- The median total waiting time from referral to result was 57.5 days with waiting time ranging from a minimum of 34 days up to a maximum of 118 days.
- Hence the maximum wait was slightly over that predicted from our process map, but the majority of patients had much shorter waits.

Results so far- GP questionnaires

- Of the 76 questionnaires sent out 64 were returned (84.2%)
- All the GPs said that they found the extra tests useful (100%)
- 23 GPs said the tests helped confirm Asthma with 37 GPs saying it helped exclude Asthma, 4 felt they still needed further investigation.
- 51 GPs said having the tests had stopped them having to refer to Respiratory Medicine (79.7%)
- 62 GPs felt the test results were useful for their future management of the patient (96.8%).

Results so far- Impact on Respiratory Medicine

- A new patient clinic appointment costs approximately £143 and takes ~30 mins
- 51 GPs said the additional tests had prevented a referral to Respiratory Medicine, hence a cost saving of £7293 or 25½hrs
- This additional time could be used to see other patients in the clinic and hence help reduce waiting times.

Continuing work

- We examined our pathway to see if we could streamline it further, and as a consequence of this edited our GP SCI gateway referral to allow for the extra investigations.
- We reviewed the tests to see if these were the most appropriate. As a result of this we now perform FeNO at the patients first appointment when spirometry is normal and if this is high this eliminates the need for a second appointment.
- After presenting this work to the Respiratory Consultants at the other sites we have now introduced this process into general clinical practice within Respiratory Physiology in NHS Lothian.



Golden Jubilee
National Hospital

Workshop Session 2: Quality Improvement in Action

The Golden Jubilee Model of Cross-Training

Presented by: Kieran Monaghan, Clinical Chemistry Technical Lead, GJNH

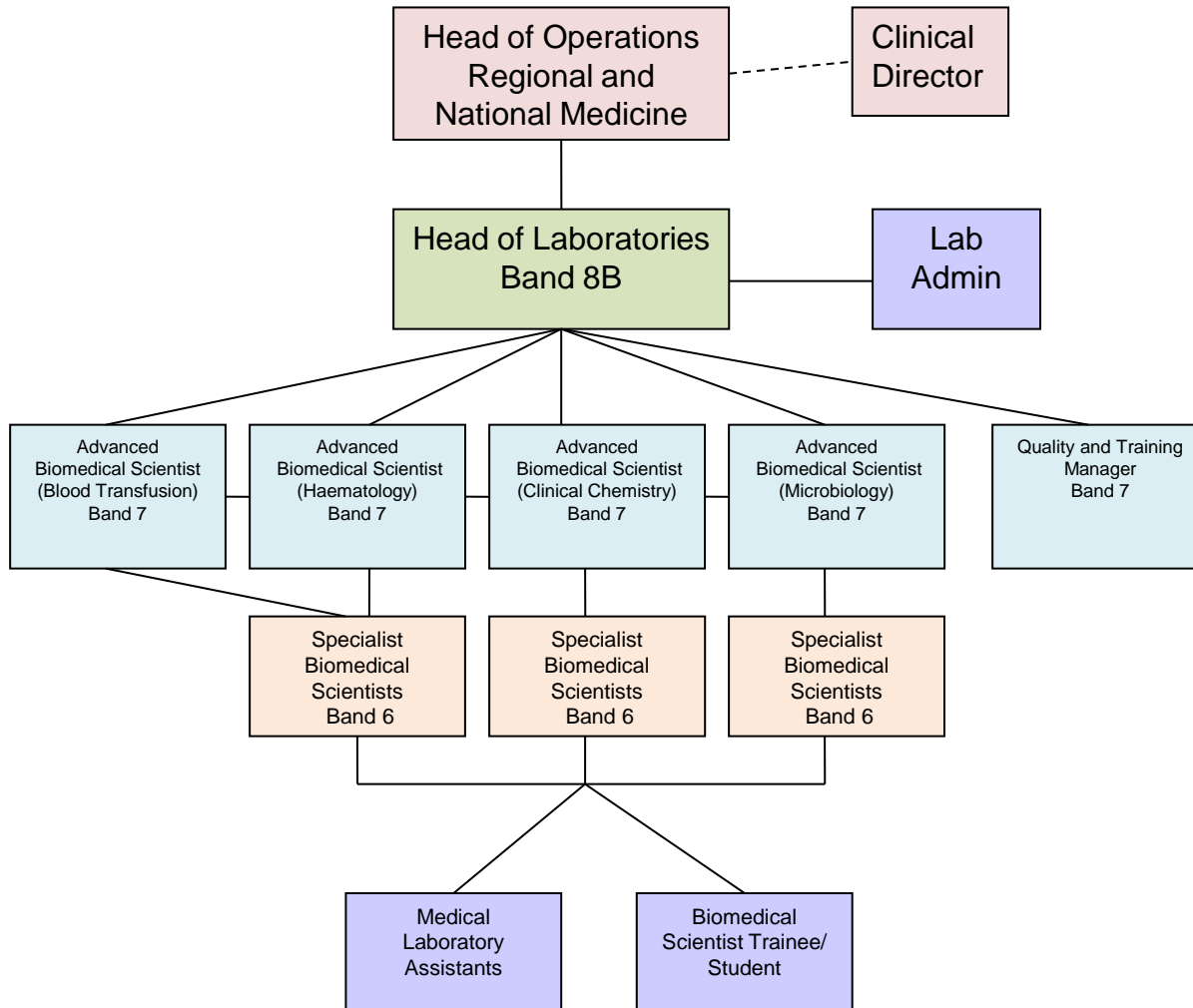
Development of a sustainable service

As outlined in “Driving Improvement, Delivering Results The Scottish Healthcare Science National Delivery Plan 2015-2020” the ambition of the Scottish government is to:

- Create sustainable teams
- Improve patient pathways and experience
- Free-up medical capacity
- Reduce diagnostic turnaround times

So how have we interpreted this at the GJNH?

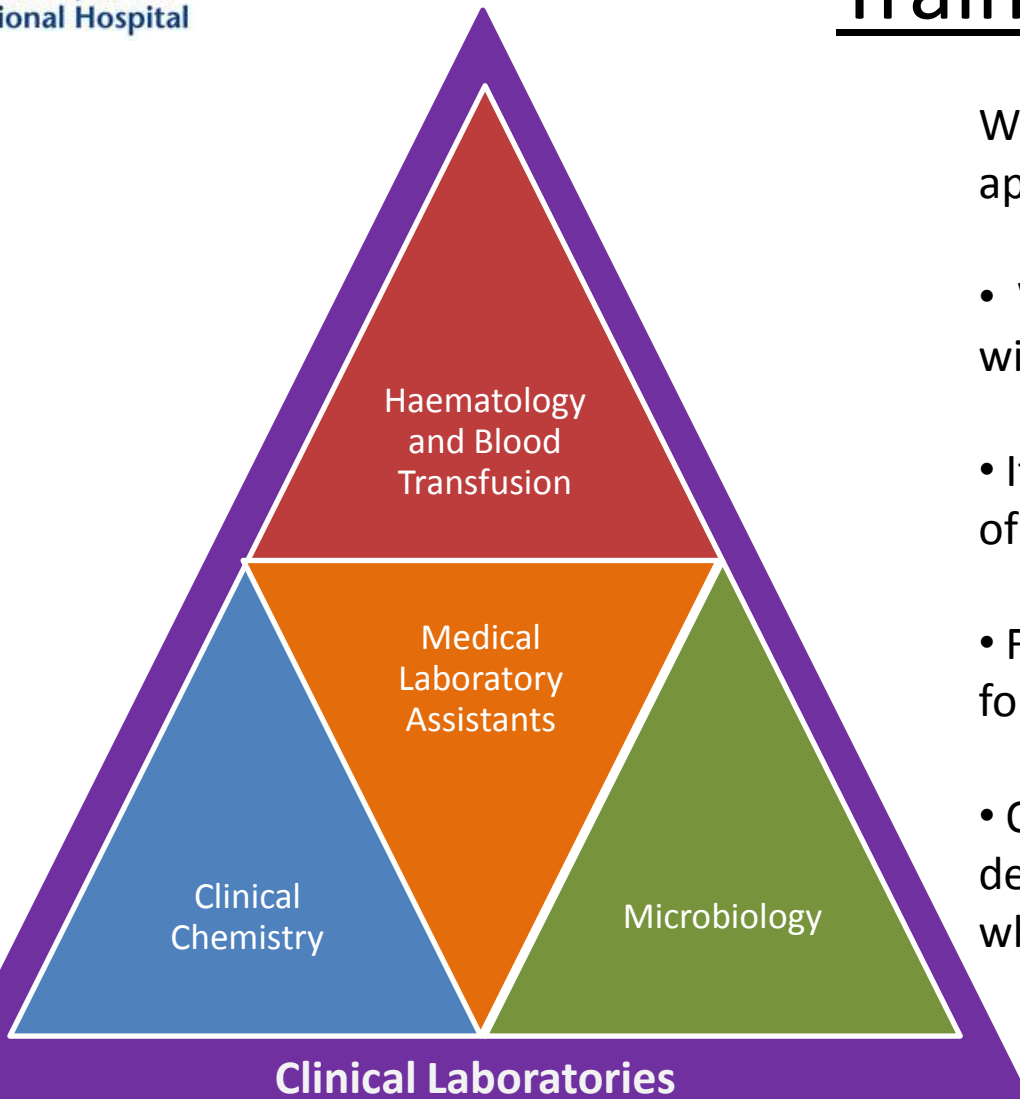
The Golden Jubilee Laboratory Organisational Chart





Golden Jubilee
National Hospital

Golden Jubilee Model for Cross Training

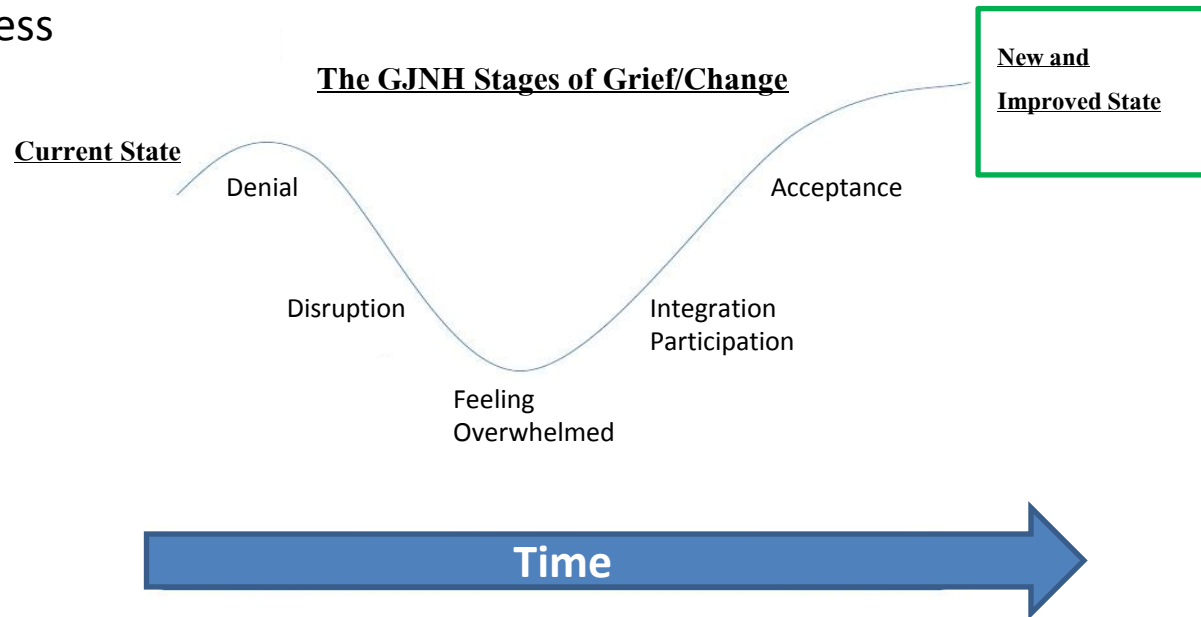


Why we thought cross training was appropriate for us at the GJNH:

- We underwent a management review with a view to implement a shift pattern.
- It would increase the existing knowledge of staff
- Free up senior staff members and allow for contingency plans
- Overall benefiting patients, the departments, and, the organisation as a whole

The Process of Cross-Training Planning and Implementation

- The head of laboratories conducted one to one interviews with each member of staff
- Gaining senior staff support
- Developing a robust training plan
- Began with Clinical Chemistry staff cross training into haematology to assist with long-term sickness





Stages of Cross Training

Stage 1

Basic level of training which includes:

- Principles of analysers
- Routine running, maintenance and reagent usage
- Quality control and calibration procedures
- Estimated training time 3-6 weeks

Stage 2

Intermediate level of training which includes:

- Increasing knowledge of the discipline and problem solving
- Leading to interpretation of results
- More advanced knowledge covered through case studies presented by appropriately trained staff.
- Estimated training time 4-6 months

Stage 3

Advanced level of training which includes:

- Supervised validation of results and performing External Quality Assurance (EQA)
- Once the senior for the department has assessed the knowledge and competency of the individual they are fully signed off.



Cross Training Example



Laboratory – Regional and National Medicine

Task/Procedure	Level achieved 1,2 or NA	Comments	Training Material	Trainer	Date
Data Alarms					
Can identify different data alarms and knows significance of different colour coded alarms					
Results Review					
Can identify when all tests on a sample are complete					
Knows how to identify icteric, lipaemic and haemolysed samples					
Knows how to resend test data to Labcentre					

1 EVIDENCE OF ACHIEVEMENT - OBSERVATION

The member of staff has successfully achieved the level of competence on one or more occasions as required and has been observed by the trainer to work in accordance with standard operating procedures.

Trainers Name:

Trainers Signature:

Trainee's Signature:

Date of completion:

Outcomes

What have we achieved so far?

- 100% Clinical Chemistry/Haematology + Blood Transfusion biomedical scientists (BMS) have been trained to load and recognise a positive blood culture on the BacT/ALERT in Microbiology
- 73% of clinical chemistry BMS staff cross trained to stage 1 in haematology
- 18% of clinical chemistry BMS staff cross trained to stage 1 in blood transfusion
- One clinical chemistry BMS fully cross trained to stage 3 in haematology
- One haematology/BT BMS trained to stage 1 in clinical chemistry
- 100% of microbiology BMS are cross trained in blood sciences specimen reception

What are the benefits and challenges

Successes:

- Lone working /Nightshifts
- Sickness cover
- Increased skills

Challenges:

- Staff levels (annual leave, sickness etc)
- Staff engagement
- Fear of change

What's next for the GJNH?

- A review of the cross training plan is going to happen at the next senior staff meeting
- Previously the plan was devised by the quality/training manager in conjunction with the laboratory manager and was outlined in their job descriptions
- This review will allow all senior staff to input ideas to make the cross training more effective

Is Cross Training Applicable in Every Laboratory/Department?

- Simple answer is 'of course not'
- Cross training has suited the GJNH
- Succession planning
- Each specialty has to individually look at how they can further develop a sustainable service
- There is no 'one size fits all'



Golden Jubilee
National Hospital

Thank you for listening!

Any Questions?





Quality Improvement in action:

Scottish STP OSFA Preparation Workshop

Selas Jennings
Clinical Scientist, Cardiac Physiology

Queen Elizabeth University Hospital, Glasgow

Background

- The final assessment in the STP is the OSFA:

Objective

Structured

Final

Assessment

• *“The OSFA is a practical assessment that assesses a sample of the skills that underpin your role and fitness to practise in the workplace and which are clearly linked to your curriculum.”* NSHCS

• Similar to OSCE exams which are used in medical, dental and AHP assessment.

• Includes a mock, generic and specialist exam. All OSFA exams take place at the Royal College of GPs in London.

The OSFA

- Consists of a series of stations, each lasting 12 minutes
- Each station contains a task or tasks which must be completed.
- An assessor marks the trainees performance



The OSFA

Just prior to your allocated OSFA time, the group of trainees will be chaperoned from the briefing room to the OSFA circuit.

From this point on, the assessment rules will apply and you should not talk to other trainees.

After two minutes, a buzzer or bell will sound to indicate that you should enter the station.

NSHCS information for trainees 2017



Premise

- The STP includes many cross-specialism aspects such as rotations, OLAT (workplace assessment) and OSFA.
- Due to the small numbers and wide geographical distribution of STPs in Scotland, there was relatively little sharing of knowledge and experiences across health boards, year groups and specialisms.
- The examination style and setting of OSFA is very different to other assessments in the STP, and can be daunting to trainees.
- Many trainees are the only STP in their hospital or the only trainee in their specialism. This isolation can add to the apprehension about upcoming assessments.

Aim

- To pass on knowledge and experience of the OSFA from graduates to trainees.
- To utilise the expertise of OSFA trained assessors in Scotland in helping to prepare trainees.
- To allow all final year STPs in Scotland to benefit from the event.
- To produce detailed resources so that the workshop can be easily replicated.

Action taken

Contacted NES:

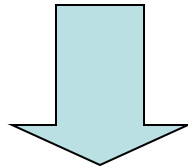
- Contact details for trainees and assessors
- Funding?

Contacted 3rd year trainees:

- Gauge interest
- Asked for ideas on content that they would find useful

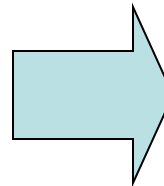
Contacted OSFA assessors:

- Interest in contributing
- Level of participation / time commitment they could contribute



Contacted other trainee Networks:

- East of England
- London
- Yorkshire and Humber



Tasks for us:

- Programme
- Session plans
- Station writing
- Mark schemes
- Room booking
- Dates
- Presentations

Target Audience

- The number of 3rd year STPs in GG&C is relatively small.
- Our options were to:
 - Open the event up to 1st and 2nd year trainees in GG&C.
 - Open the event up to all 3rd years in Scotland.
- The latter was decided upon due to feedback from other trainee networks that 3rd year trainees found the event the most beneficial.
- The event was offered to nine 3rd year trainees from five specialisms.



Generic OSFA Workshop Day 2018: Programme

MORNING

Talk from an OSFA assessor	Ruth Hamilton	10-10:30am
Talk from an STP OSFA alumni	<u>Selas Jennings</u>	10:30-11am
Demonstration of "good" and "poor" OSFA station performance	Lorna Crawford, Emily Goldstein and <u>Selas Jennings</u>	11-12am
Station writing activity	Emily Goldstein	12-1pm

LUNCH 1-2pm (Lunch provided)

AFTERNOON

Four pre-written generic OSFA practice stations for trainees to sit	Ruth Hamilton Lorna Crawford Duncan Macfarlane <u>Claire Tarbert</u>	2-4pm
Feedback	All	4-4:30pm

Results

- All 9 third year Scottish trainees signed up, one could not attend on the day.
 - Trainees were from a variety of specialisms including Vascular, Biochemistry, Genetics, Microbiology and Haematology.
- Trainees were highly engaged in discussion and asked lots of questions.
- Trainees appeared to take the mock stations very seriously.
- We received good feedback from the post event questionnaire

Feedback

100% of trainees found the event useful, and 100% said they would recommend the event to another 3rd year trainee.

Most useful part of the day

- Taught to approach the stations from the perspective of what would gain the most marks
- The mock stations and feedback
- Able to ask questions to assessors and graduates
- Explanation of OSFA question setting

Anything that could be added

- Additional time for discussion
- 1st and 2nd year trainees could benefit from this
- Nothing

Possible improvements

- More time for feedback after the stations
- Perhaps more mock stations

Sustainability

- Resources from the day are available on the knowledge network.
- Additional resources are available on the GG&C trainee network dropbox.
 - Session plans, mark schemes, room booking instructions, contact details etc.
- The event could be replicated using these tools, and preparation time would be minimised.
- The resources could be adapted to fit other training programmes and assessments.

Quality Improvement

- Improved / formalised access to information, resources and contacts.
 - Particularly important for trainees in smaller specialisms or in departments new to STP.
- Utilised the knowledge of OSFA assessors and STP graduates in GG&C.
- Added an extra element to STP training not previously available.
- Improved networking between 3rd year STPs in Scotland.

National Delivery Plan

- **Deliverable 4: Developing sustainable services**
 - Including alumni and qualified assessors/training officers in supporting trainees is a sustainable model of training.
 - » This also improves efficiency as trainees are receiving support based on the stage of their training rather than proximity to assessors / alumni.
 - This project demonstrated that sustainable teams can be built across specialisms.
 - » Nine specialisms in total were involved with the event.
- **Deliverable 5: Integrated model for clinical physiology services**
 - This event encouraged integration between all specialisms in HCS.
 - This included clinical physiology specialisms.

Acknowledgements

The event was run by the GG&C Healthcare Science Trainee Network.

The event organisers were myself and Emily Goldstein, a Clinical Scientist in Microbiology, Glasgow Royal Infirmary.

The assessors contributing to the event were:

- Ruth Hamilton (Consultant Clinical Scientist, Royal Hospital for Children)
- Lorna Crawford (Principle Scientist and Training Officer, Genetics, QEUH)
- Claire Tarbert (Clinical Scientist, Clinical Engineering, West Glasgow ACH)
- Duncan Macfarlane (Advanced Specialist Respiratory & Sleep Physiologist, GG&C)