5-YEAR QUALITY IMPROVEMENT IN RADIOLOGY SPECIALTY TRAINING AT A UK TERTIARY CARDIOTHORACIC CENTRE (2017-2022)

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Acknowledgements:
• Clinical Leads 2017-2019: Sukumaran Binukrishnan, MD and Caroline McCann, MD
• Data visualisation: Manuel Gutierrez, MD PhD
• All Consultants for their active involvement in training
• Department's radiographers, assistants and Cardiology consultants and trainees for a supportive multidisciplinary environment
• Every survey respondent for active participation
INTRODUCTION

Radiology is at the core of any hospital

LHCH: one of the country’s leading tertiary specialist centres

One of the centres with a strong inter-specialty cardiovascular diagnostic imaging collab

UK needs 3365 radiology consultants today. 2000 were needed in 2020

Cardiac, thoracic & vascular imaging need is significantly increasing and will increase

UK Radiology* specialty training in a nutshell (*non-IR)

• Medical school
• 2 Foundation years
• 5 Specialty Training years
• Trainees move around regional hospitals for placements

Regional deanery: North West School of Radiology (among 17 UK deaneries)

Problem: In early 2017, LHCH Radiology ranked 23 out of 24 teaching sites based on the deanery’s regional trainee satisfaction survey, with a risk of losing radiology training site status

*RCR census
AIM: TO FOSTER RADIOLOGY TRAINING BY IMPROVING QUALITY

METHODS

STUDY & INTERVENTION

1. Post-placement survey created

2. Placement reorganisation:
   a) Training goals → individually tailored rotas
   b) Consultant-led clinical sessions
   c) Hands-on cardiac imaging training for all
   d) Pre-placement infopack created
   e) Journal Club
   f) Pre-scheduled Consultant and Radiographer-led teaching sessions
   g) Formal ST/Fellow encouragement to undertake audit, SE, QIP, teaching, academic writing
   h) Trainee study room optimisation
   i) Consultants encouraged to train in supervision
   j) Consultant trainer time recognised as per HEE / GMC / RCR
   k) Departmental education portal
   l) Public publication board (prioritising junior radiologist work)

3. Externally funded Visiting Fellowships from 2018
4. Salaried Clinical Fellowships from 2019

MEASUREMENT

• Regional ranking was monitored (available 2017-2019).
• Local feedback survey was distributed (2017-2022) and analysed (descriptive statistics)
Local feedback survey created
Rotas reviewed with a focus of Consultant-led hands-on training
Pre-placement info pack created
Cons. encouraged to train as supervisors with dedicated time
Schedule of teaching sessions
Encouragement to undertake projects
Unpaid Visiting Fellowship programme started
Salaried Clinical Fellowship programme started
Global pandemic
Optimised study room
Service expansion
Loss of study room
Departmental audit days started
Placement length increase / length variation allowed
Training slot increase +1
Public publication board
Online education portal
Unpaid Visiting Fellowship programme started
Salaried Clinical Fellowship programme started
March 2017 Baseline
July 2018
November 2019
March 2021
August 2022
*METHODS: PROJECT TIMELINE (*STUDY/INTERVENTION)
55 obtained local survey responses
3 excluded (visiting fellowships → a separate survey created for later use)

The site regionally ranked 9/19 in 2 years.
Audit/academic project involvement +36%
14 Visiting Fellowships completed
6.5 1-year Clinical Fellowships completed
8/11 Consultants formally trained as supervisors
Compulsory → Motivation based posts
An additional salaried training post was offered by the deanery (2021).
ESOR Fellowships / Scholarships agreed (2021).
5 Fellows retained in the region as subspecialist consultants.

What respondents liked about the placement *
- Good exposure to cardiac and thoracic radiology
- Active encouragement from consultants to push ourselves further
- Experience relevant for future practice and exams
- Good, interesting MDT meetings
- Teaching sessions
- Insight into specialty to aid in career decisions
- Consultants: approachable, enthusiastic, knowledgeable, keen to teach, patient
- Found the trainee SharePoint very useful
- A really excellent placement, regardless of whether the registrar has an interest in cardiac/thoracic imaging. Mainly due to the very hard working consultants.
- Excellent TSTL, who for the first time in my career seemed to go above and beyond to make the experience of the trainees better, and who was willing to listen to our concerns if any. Thank you Monika!

What could be better *
- Possibly not enough formal teaching
- Not enough workstations
- More ultrasound
- No introductory sessions explaining how to use software
- Not enough cardiac MR
- Better organisation of XR report checking
- Too much cardiac MR
- Short placement
- At times difficult to arrange report checking
- More experience relevant for future practice and exams
- More organisation of work
- Better software

*A selection/consolidation of free text responses

Interim results presented in the department in 2019
RESULTS

NWSOR Training Site Survey – Overall Hospital Ranking

Locally set target was based on overall maximum score 5/5 (1), aiming for 4/5 (0.8). Baseline: 0.6 is the total survey score (3/5) reflecting the position 23 among 24 surveyed Trusts in 2017. 0.6 ranking reflects position 23 among the 24 surveyed Trusts. 0.88 ranking reflects position 9 among the 19 surveyed Trusts.

A. Regional site survey data (when available)
B. Local survey respondent frequency per year
C. Local survey: placement rating before and after rotation
RESULTS (LOCAL SURVEY)

A. How would you have rated the placement before starting, according to your impression based on the experience of your colleagues?

- Poor: 14%
- Fair: 16%
- Good: 19%
- Very good: 22%
- Excellent: 9%

Project duration: 2017-2022
- Before 2019: 48%
- 2019 onwards: 53%

B. Were there enough consultant-provided teaching sessions?

- Not enough: 31%
- Just about enough: 19%
- Met placement needs: 29%
- Above placement needs: 5%

Project duration: 2017-2022
- Before 2019: 48%
- 2019 onwards: 47%

C. How likely is that you would recommend this placement to a colleague now that you finished it?

- 30%
- 70%

D. Have you ever considered cardiothoracic, cardiac/cardiovascular or thoracic imaging as a subspecialty before this placement?

- Yes: 30%
- No: 70%

E. Do you consider cardiothoracic, cardiac/cardiovascular or thoracic imaging as a subspecialty after this placement?

- Yes: 30%
- No: 70%

A. Placement rating before and after rotation, before and after 2019
B. Satisfaction with the number of teaching sessions, before and after 2019
C. Recommendation likelihood, before and after 2019
D. Subspecialty consideration before placement
E. Subspecialty consideration after placement
WHAT HAS WORKED WELL

PLANNING
- Pre-placement goals
- Reading package prior to placement
- Regional coordination
- Clear induction, expectations
- Structured teaching programme

SUPERVISION
- 1:1 supervisors
- CS/ES-trainee meetings
- Tailored rotas
- ↑ hands-on work
- ↑ inter-specialty work

OTHER
- Support for audits, etc
- Delegation of admin tasks
- Dedicated site
- Regular updates
- Post-placement survey

VALUES
- Inclusivity
- Making a difference
- People-centred
- Accountability
- Continuous improvement
- Teamwork

INCLUSION
- Mixed learner environment (rads, cards, different levels)
- Teaching roles to non-consultants

FEEDBACK
- Inclusivity
- Making a difference
- People-centred
- Accountability
- Continuous improvement
- Teamwork
**BENEFITS — DIRECT AND INDIRECT - UNINTENDED CONSEQUENCES**

<table>
<thead>
<tr>
<th>LOCAL/REGIONAL</th>
<th>Trainee satisfaction</th>
<th>↑ interest in cardiothoracic training in the region</th>
<th>Progressive trainee autonomy &amp; confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(INTER) NATIONAL</td>
<td>Accepted/listed as a fellowship host in major international programmes</td>
<td>↑ interest in all fellowships</td>
<td>↑ inter-disciplinary work</td>
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<tr>
<td>OTHER</td>
<td>Trainee rota gaps filled internally</td>
<td>Increased audit, academic output</td>
<td>Trainees appointed for roles at other well-known sites</td>
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<td></td>
<td>2020: Grant-based Research Fellow post (completed)</td>
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<td>Staff retention to Consultant level (3x)</td>
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<td>Other visibility</td>
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**Other**

- Increased audit, academic output
- Trainees appointed for roles at other well-known sites
- Other visibility
- 2020: Grant-based Research Fellow post (completed)
- Staff retention to Consultant level (3x)

Accredited internationally as an all-three category cardiovascular magnetic resonance imaging lab
SUMMARY

Aim achieved: training quality improved

Continuous feedback and QI maintenance are valuable to enhance the training quality

Longitudinal QIP has been helpful in significantly increasing Trust’s visibility internationally

Our results meet the regional and national goals to reduce shortage

Overall, this QIP provided an example of agile and flexible interventions and their impact on workforce retention/recruitment

FUTURE RECOMMENDATIONS

To ensure appropriate protected supervision time for Consultants

To maintain continuous quality assessment and QI

To enhance academic training in the department

To further foster interdisciplinary work

THANK YOU

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