Article:
Jones, CM, Olsson-Brown, A and Dobeson, C (2020) NOTCH: The National Oncology Trainees Collaborative for Healthcare Research. Clinical Oncology, 32 (10). pp. 632-635. ISSN 0936-6555

https://doi.org/10.1016/j.clon.2020.05.005

NOTCH: The National Oncology Trainees Collaborative for Healthcare Research

Christopher M. Jones[1,2,3*], Anna Olsson-Brown[1,4,5], Caroline Dobeson[1,6], on behalf of the Trainee Board of the National Oncology Trainees Collaborative for Healthcare Research[~]

[1] The National Oncology Trainees Collaborative for Healthcare Research

[2] Radiotherapy Research Group, Leeds Institute of Medical Research at St James's University of Leeds, Leeds, Leeds, UK.

[3] Leeds Cancer Centre, The Leeds Teaching Hospitals NHS Trust, Leeds, UK

[4] The Clatterbridge Cancer Centre, Wirral, Merseyside, UK

[5] Department of Molecular and Clinical Pharmacology, University of Liverpool, UK

[6] Northern Centre for Cancer Care, Newcastle Upon Tyne, UK

~ Past and current members of the NOTCH Trainee Board are listed in Appendix 1

Keywords: Training; Clinical Oncology; Radiation Oncology; Medical Oncology; Education; Research

*** Address all correspondence and requests for reprints to:**

The National Oncology Trainees Collaborative for Healthcare Research

C/o Christopher Jones

LIGHT Laboratories Level 7

University of Leeds

Leeds, LS2 9JT, UK.

Email: uk.notch@nhs.net

FUNDING

This research received no specific grant support from the public, commercial or not-for-profit sectors. CMJ is supported by a Wellcome Trust N4 Clinical Research Training Fellowship (203914/Z/16/Z). ACOB is an MRC Clinical Research Training Fellow based at the University of Liverpool supported by the North West England Medical Research Council Fellowship Scheme in Clinical Pharmacology and Therapeutics, which is funded by the Medical Research Council (MR/N025989/1), Roche Pharma, Eli Lilly and Company Limited, UCB Pharma, Novartis, the University of Liverpool and the University of Manchester.

ACKNOWLEDGEMENTS

The authors and wider NOTCH membership are grateful to the Royal College of Radiologists, Association of Cancer Physicians and National Cancer Research Institute for their support for this initiative. The Board are in addition thankful for the support, advice and mentorship of the members of the Advisory Group and many other senior clinical and medical oncologists from across the UK.

The National Oncology Trainees Collaborative for Healthcare Research (NOTCH) is a grassroots research collaborative formed by and for aspiring and current medical and clinical oncology trainees across the United Kingdom (UK). We outline here the steps taken to establish this collaborative, as well as its objectives and position in the oncology research training landscape.

SET-UP & PROGRESS: FROM NORTHERN TO NATIONAL

The trainee collaborative landscape

As members of research-intensive specialties, clinical and medical oncology trainees must gain experience of and skills in leading, undertaking and appraising research. For some, these may be acquired through integrated training platforms and higher degree programmes. However, for many trainees research experience is restricted to the completion of small single-centre analyses and both trainees and new consultants report feeling unprepared to undertake and lead research(1-3). Indeed, literature identifying the relatively poor utilisation of evidence based medicine (EBM) practices throws into sharp relief the importance of improving research and critical appraisal skill acquisition amongst doctors-in-training.(4)

Faced with a similar landscape, the surgical community has over the past decade led a considerable push to establish trainee-led research collaboratives as a means to providing trainees with hands-on research experience.(5) Run by doctors-in-training and medical students, these groups provide hands-on research training whilst addressing challenging areas of clinical research need.(6) Supranational bodies such as the European student-driven EuroSurg network have also been established.(7) We identified a trainee-led collaborative approach as an effective means of providing research skills, training and experience to oncology trainees, in addition to enhancing networking amongst and between junior doctors in medical and clinical oncology.

Northern origins

In 2017 a group of clinical and medical oncology doctors in training drawn from six centres in the North of England and Northern Ireland (Belfast, Leeds, Liverpool, Manchester, Newcastle and Sheffield) established the then Northern Oncology Trainees Collaborative for Healthcare Research. In this first NOTCH incarnation, clinical and medical oncology trainee representatives from each of the six centres formed an organising committee which in early 2018 led a call for project proposals. Twelve were received, the majority of which were tumour site-specific and retrospective analyses of toxicity, survival and guideline compliance. Two audit projects were selected following a structured trainee-level peer-review process; one focussed on the management and outcomes for thymoma and thymic carcinoma, and the other on real-world toxicity and outcomes for immunotherapy used in three tumour sites (**Table 1**).

National expansion

In response to considerable interest, further centres in the North of England and across Scotland were incorporated in a step-wise fashion in late 2018, (**Fig. 1a**). In 2019, and re-branded as the national oncology trainee collaborative, NOTCH again expanded with the inclusion of many more centres across the UK. Recognising this successful growth, NOTCH was in the same year both formally endorsed by the Association of Cancer Physicians and affiliated to the Royal College of Radiologists. At the time of writing, in excess of 30 centres have confirmed involvement (**Supp. Table 1**) with almost 200 junior doctors involved in coordinating the collaborative's activities.

THE CURRENT MODEL

Collaborative structure

The wider UK expansion was accompanied by considerable restructuring (**Fig. 1b,** see www.uknotch.com/ToR for Terms of Reference). A national Trainee Board is now established and is tasked with organising participating centres, selecting projects for the collaborative to undertake and facilitating research training. Participating centres are predominantly tertiary cancer hospitals and the

associated satellite units through which trainees rotate, although diversification into smaller centres is increasing over time as the network expands. Each cente is represented by two medical and two clinical oncology trainees, one of whom is nominated as the centre lead. They together coordinate project delivery, including obtaining relevant local permissions and overseeing data collection and management. Trainees not in a coordinating role may sign up as General Members via the NOTCH website (www.uknotch.com) and participate in data collection, as may medical students and doctors in their foundation or internal medicine training years.

Participating centres are grouped into seven geographical regions, a representative for each of which sits on the Trainee Board. This is led by a Chair and Vice Chair, who are together supported by a Treasurer, Events Manager, Communications Lead and a New Consultant Representative. These roles rotate annually and are open to both medical and clinical oncology trainees, though the Chair and Vice Chair roles must rotate between these two specialties and both cannot sit in the same geographical location. Job-shares are encouraged in order to facilitate the involvement of less-than-full time trainees. Chief Investigators (CIs) for each active NOTCH project are in addition co-opted on to the Trainee Board.

Governance

The Trainee Board is overseen by an Advisory Group formed of senior clinicians and academics who together represent each of the regions from which trainee NOTCH members derive or key stakeholder organisations involved in cancer research or oncology training (**Appendix 2**). The Advisory Group is led by the most recent outgoing NOTCH Chair and rotates annually in line with the other office bearer roles. Medical and Clinical Oncology are equally represented on both the Trainee Board and the Advisory Group.

Project selection & delivery

Project proposals are invited annually and assessed through a trainee-led peer-review process. Each proposed project should be led by a trainee who acts as the CI, albeit with support from a nominated consultant. The CI is invited to appoint a project steering committee, which should include a majority of trainees as well as consultants with a relevant academic interest. Both the steering group and the Trainee Board provide input to support the development of each project and the creation of a project-specific protocol, the delivery of which is coordinated by regional representatives and the centres they oversee. In addition to securing appropriate ethical and governance approvals, the CI must gain approval from the Trainee Board for a Data Management Plan, which should include a protocol for data anonymisation and sharing. In 2019 a second call for project proposals resulted in the selection of four new projects for the 2019-2020 period (**Table 1**).

IMPACT

Training impact

The present medical and clinical oncology curricula define a number of required research competencies.(8,9) Many of these can be ascertained through participating in NOTCH activities. Trainees who are for instance involved in data collection will gain valuable skills not just in formulating and working to efficient, standardised data collection protocols but also in anonymising and securely transferring data. Future prospective studies will in addition provide opportunities to gain experience in recruiting patients and bring familiarity with case record forms.

A significant advantage to the approach taken by NOTCH is that trainees may opt for additional responsibilities as a means to gaining a greater breadth of skills. Many of these opportunities are unlikely to otherwise be available to the majority of trainees, including formulating project proposals under the supervision of consultant colleagues, putting together ethics submissions and writing grant submissions. Through NOTCH trainees may also acquire research leadership competencies by sitting on study steering groups or even leading studies as a Principal or Chief Investigator. Additional

experience can be gained in data analysis and methodology, critical appraisal of these data and both presenting and writing-up study outcomes.

In order to consolidate the impact of this hands-on training, an annual oncology research skills training meeting run by NOTCH in partnership with key stakeholders is also planned. Participating in NOTCH activities may also support trainees in completing the dissertation component of MSc Clinical Oncology courses.

Clinical impact

The considerable geographic scope and number of patients represented by the collaborative offers the potential to deliver impactful research. Much of the early focus for NOTCH has been directed towards retrospective analyses of rare malignancies and on general aspects of treatment efficacy and toxicity that are of interest to both medical and clinical oncologists. The importance of these real-world data is increasingly recognised, particularly given the acceleration in the introduction of new therapies and the recognised limitations of trial data in informing treatment decisions for patients who may receive these therapies.(10) It is also clear that for rarer malignancies, NOTCH facilitates research that might not otherwise be prioritised or for which the required collaborative network in many cases does not exist. Exemplifying this, early NOTCH projects focussed on thymoma and immunotherapy toxicity have respectively secured Best Poster Prize at the British Thoracic Oncology Group meeting and an oral presentation at the American Society of Clinical Oncology (ASCO) Annual Conference 2020.

Additional clinical impact will derive from a move to prospective studies and to the site-specific study of more common malignancies, in which a number of surgical groups share an interest. This will require interdisciplinary working, as per the example set by others.(11) Rather than create numerous similar yet disparate site-specific trainee-groups, the NOTCH Trainee Board will in future years provide

capacity for, and coordinate, site-specific projects that involve other specialties whilst utilising the expertise and wide reach of the NOTCH collaborative.

From Northern to national, and beyond

NOTCH is to our knowledge a world first in non-surgical oncology, and an invaluable vehicle for encouraging UK clinical and medical oncology trainees to gain training and experience not just in research, but in key aspects of research leadership and collaborative working. The ongoing success of this initiative will be dependent on the continued support of senior oncology and cancer research stakeholders. With this, NOTCH has the potential to expand not just its research portfolio and the skills it delivers to trainees, but perhaps even its geographical boundaries to support and work with similar endeavours outside of the UK.

REFERENCES

1 Frazer R, Pugsley L, Button M, Cleves A. UK Training in Oncology: The View From 'the Other Side'. *Clin Oncol (R Col Radiol)* 2019;31(4):209-211.

2 Casswell G, Shakir R, Macnair A, O'Leary B, Smith F, Rulach R et al. UK Training in Clinical Oncology: The Trainees' Viewpoint. *Clin Oncol (R Col Radiol)* 2018;30(10):602-604.

3 Dickson J, Liu D, Bloomfield D. Training in Clinical Oncology and the Transition from Trainee to Consultant: Results of the Royal College of Radiologists' 2015 Post-Certificate of Completion of Training Survey. *Clin Oncol (R Col Radiol)* 2016;29(3):e64-e71.

4 Hong B, O'Sullivan ED, Henein C, Jones CM. Motivators and barriers to engagement with evidence-based practice among medical and dental trainees from the UK and Republic of Ireland: a national survey. *BMJ Open* 2019;9(10):e031809.

5 Jamjoom AAB, Phan PNH, Hutchinson PJ, Kolias AG. Surgical trainee research collaboratives in the UK: an observational study of research activity and publication productivity. *BMJ Open* 2016;6(2).

6 Pinkney TD, Calvert M, Bartlett DC, Gheorghe A, Redman V, Dowswell G et al. Impact of wound edge protection devices on surgical site infection after laparotomy: multicentre randomised controlled trial (ROSSINI trial). *BMJ* 2013;347.

7 EuroSurg Collaborative. EuroSurg: a new European student-driven research network in surgery. *Colorectal Dis Off J Assoc Colorproctology G B Irel* 2016;18(2):214-5.

8 Joint Royal Colleges of Physicians Training Board. Specialty Training Curriculum for Medical Oncology 2017. Available at https://www.jrcptb.org.uk/sites/default/files/2017%20Medical%20Oncology%20Curriculum%20FINAL.pdf. Accessed 16th March 2020.

9 The Faculty of Clinical Oncology, The Royal College of Radiologists. Specialty Training Curriculum for Clinical Oncology (2016). Available at https://www.rcr.ac.uk/sites/default/files/2016_curriculum_-_clinical_oncology_15_november_2016.pdf. Accessed 16th March 2020.

10 Bell H, Wailoo AJ, Hernandez M, Grieve R, Faria R, Gibson L et al. The use of real world data for the estimation fo treatment effects in NICE decision making (2016). Available at https://www.rcr.ac.uk/sites/default/files/2016_curriculum_-_clinical_oncology_15_november_2016.pdf. Accessed 16th March 2020.

11 Cheng VWT, Heetun A, Robinson T, Coles CE, Palmieri C, Rea D et al. The Breast Cancer Trainees Research Collaborative Group: A New Multidisciplinary Network to Facilitate Breast Cancer Research. *Clin Oncol* 2020; 32:e16-18.