## **Curriculum Vitae**

Professor Nicholas D Maynard
BA Hons (Oxon) MBBS MS FRCS (Eng) FRCS (Gen) FRCSEd (Ad Hom)

**Consultant Upper Gastrointestinal Surgeon Oxford University Hospitals NHS Foundation Trust** 

Associate Professor of Surgery
Nuffield Department of Surgical Science
Nuffield Department of Medicine
Oxford University

#### **PERSONAL DETAILS**

Name Nicholas David Maynard

Age 62 years

Date of Birth 01.04.1962

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Nationality British

GMC Registration No. 3180514

#### **QUALIFICATIONS**

University BA Hons (Oxon) 1983

Oxford University

MBBS 1986

Guy's Hospital Medical School

University of London

Postgraduate FRCS (England) 1990

Royal College of Surgeons of England

MS 1994

University of London

FRCS (Gen) 1997

Intercollegiate Board in General Surgery

CCST (General Surgery) 1997 FRCSEd (Ad Hom) 2020 Associate Professorship of Surgery 2022

#### **PRESENT APPOINTMENTS**

Consultant Upper Gastrointestinal Surgeon 1997 to present

Oxford University Hospitals NHS Trust

Associate Professor of Surgery 2022 to present

Oxford University

Lectureship in Medicine (Clinical Training) 2013 to present

Corpus Christi College, Oxford

#### **CLINICAL**

I am working as a Consultant Upper Gastrointestinal Surgeon at the Oxford University Hospitals NHS Foundation Trust. My main clinical interests are in the surgery of benign and malignant gastric and oesophageal disease, and minimally invasive upper gastrointestinal surgery.

#### Oesophagogastric cancer

I am the Senior Consultant Surgeon in the Oxford OesophagoGastric Centre, working with five other Consultant OG Surgeons. We carry out an average of 90 oesophagectomies and 40 gastrectomies for cancer each year. My operative experience includes over 1400 oesophagogastric cancer resections. I have been in the top 5% highest volume OG cancer surgeons in UK 2016-2020 (NOGCA), and my 30 day and 90 day mortality are both under 1% over the last 5 years. I have introduced an Enhanced Recovery pathway for oesophagectomy and gastrectomy into Oxford, reducing hospital stay for oesophagectomy from 14 to 8 days, and for Gastrectomy from 11 to 7 days.

#### Benign and minimally invasive

My operative experience includes over 2000 laparoscopic cholecystectomies and over 500 laparoscopic operations for reflux disease, hiatus hernia and achalasia. I have extensive experience in revisional laparoscopic surgery for oesophagogastric disease, and am the principal regional referral point for revisional hiatal hernia, reflux and achalasia surgery, with a laparoscopic completion rate of >95%. 10% of my referrals are second opinions on complex cases from other units.

I have a practice in oesophageal problems in adults who have had congenital oesophageal atresia repaired at birth, with the largest practice in the country (approximately 15 patients per year) with excellent outcomes and patient satisfaction in those on whom I operate.

#### **HUMANITARIAN WORK**

#### Medical Aid for Palestinians (MAP UK)

I regularly travel to Gaza with MAP UK to work as an Upper GI Surgeon teaching and carrying our oesophagogastric cancer surgery and advanced minimally invasive surgery. Since October 7<sup>th</sup> 2023 I have been clinical lead for 2 Emergency Medical Teams working in Al Aqsa Hospital in middle Gaza (December 2023 – January 2024 and April – May 2024).

#### **MANAGEMENT AND LEADERSHIP**

#### Local

Having set up the Oxford Oesophagogastric Centre in 1997, I have been the Senior Consultant since its inception and under my leadership it has become one of the leading oesophagogastric cancer units in the world. I Chaired the Upper GI Cancer MDT in Oxford from 1997 to 2008, and the Thames Valley Cancer Network Upper GI Cancer Tumour Site Specific Group from 2005 to 2010. This was during the difficult process of centralization of oesophagogastric cancer services, and over this period, and subsequently, I successfully negotiated the centralization of these services in Oxford, covering Buckinghamshire, Wiltshire, Oxfordshire and Berkshire, a population of 2.4 millions.

From 2009 to 2014 I was the Clinical Director in charge of General Surgery, Gastroenterology and Emergency Surgery for Oxford University Hospitals NHS Trust. I was in charge of 35 Consultants on 3 sites (John Radcliffe Hospital, Churchill Hospital and Horton Hospital in Banbury). During this time I successfully negotiated and implemented the centralization of all Emergency Surgical Services in Oxfordshire to the John Radcliffe Hospital. This involved stopping all emergency general surgery in Banbury and involved extensive meetings and negotiations with members of the public representing the Save Horton Hospital Campaign, local politicians and members of the press.

From 2017 to 2022 I was the Cancer Lead for Oxford University Hospitals NHS Foundation Trust, responsible for Cancer performance and strategy in Oxford. I have reformed our cancer MDTs introducing pre MDT triage, protocolisation and time efficiency savings throughout MDTs of 30%. During COVID I led revision of all cancer pathways, and set up the Cancer Surgery Prioritisation Panel, keeping cancer surgical activity at >90% during COVID. I have developed, with an external company, an information technology MDT tool to improve functionality of Cancer MDT meetings leading to improvements in efficiency of MDT, in cancer pathway and performance against National Cancer targets, and cancer data collection.

#### **National**

Association of Upper GI Surgery of Great Britain and Ireland (AUGIS) Immediate Past President 2021 to 2023

AUGIS is the professional body which represents all Consultant Surgeons, Trainee Surgeons and other Health Care Professionals involved in Upper GI Surgery, and exists to improve the delivery, results, and outcomes of conditions of the oesophagus, stomach, duodenum, pancreas, liver, and biliary tree requiring surgical treatment. As President of the Association, the fundamentals of my role included to:

- Provide a structure for training objectives
- Develop and promote the establishment of high-quality training programmes throughout the United Kingdom and Ireland
- Foster developments in Upper Gastrointestinal surgery
- Promote educational and academic objectives
- Drive improvements in outcomes for Upper GI cancer surgery
- Provide guidelines of best practice
- Set minimum standards of outcomes from surgery

I promoted educational and academic objectives by:

- Running the Annual Scientific Congress
- Organising programme of online educational webinars, podcasts, and educational videos
- Appointing and managing three Surgical Specialty Research Leads (Pancreatic Cancer, Oesophageal Cancer, Colorectal Liver Metastases) to promote and enhance research in these areas
- Maintaining high quality audit of practice in and outcomes from Upper GI and HPB cancer surgery

National Oesophagogastric Cancer Audit (NOGCA) Clinical Lead 2015 - 2022

NOGCA is a National Clinical Audit, and the largest of its kind in the world. Its aim is to promote quality improvement in patient outcomes from treatment for oesophagogastric cancer, and, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. As the surgical lead for this audit, my role has been in:

- Producing and writing the annual report for those who deliver, receive, commission, and regulate care for patients with oesophagogastric cancer. It provides information about OG cancer services for patients and commissioners and enables NHS organisations to identify areas where care can be improved.
- Developing for NHS England the Composite Indicator, which summarises the performance of OG Cancer Specialist Centres in England and Wales across a range of performance indicators.
- Coordinating regular academic output and publications see publications

Royal College of Surgeons of England Lead Reviewer, Professional Standards and Regulation Division 2010 to present

#### **National NHS Roles**

Review of SE Wales Upper GI Cancer Services
 Review of North London Upper GI Cancer Services

2016 - 2017 Member of NICE Guidelines Committee for Oesophagogastric Cancer

2017 – 2023 Review of South Wales Upper GI Cancer Services
 2022- present Review of Surrey and Sussex Upper GI Cancer Services

2022 – present Review of Wessex Upper GI Cancer Services

#### **International**

Esophagectomy Complications Consensus Group (ECCG) 2015 to present

I am one of the UK representatives on this international group, which has developed a standardized list of complications associated with oesophagectomy in order to standardize international data collection and facilitate future comparative studies and quality improvement projects. This has led to multiple publications.

Member of International Guideline Development group for Surgical Management of Gastroesophageal Reflux Disease

I am one of 2 UK representatives on this global expert panel sponsored by EAES (European Association for Endoscopic Surgery).

### CANCER RESEARCH IN OXFORD THROUGH COLLABORATIONS WITH LUDWIG INSTITUTE FOR CANCER RESEARCH (PROFESSOR XIN LU) AND CANCER RESEARCH UK (PROFESSOR MARK MIDDLETON)

#### <u>Ludwig Institute for Cancer Research Collaboration (Professor Xin Lu)</u>

#### Research carried out by Richard Owen for DPhil, Oxford University 2018, jointly supervised with Professor Xin Lu

#### Single cell RNA-sequencing in the upper gastrointestinal tract (DPhil project)

Richard investigated the cellular complexity of Barrett's oesophagus and how this is related to surrounding normal mucosal structures. Having noted the weaknesses in bulk tissue sequencing for tissue and cellular phenotyping, he validated a single cell sequencing method in fresh human tissues and developed a robotic platform for increasing sequencing throughput and accuracy. Next, he made an algorithm which modelled the technical variability in these experiments to cope with the inherent noise in single cell RNA-seq data allowing more reliable analysis. Taking these methods into a clinical context, he identified novel gene expression which marked Barrett's mucosa, showed how Barrett's oesophagus cells matched native oesophageal submucosal gland cells, and identified a novel marker of goblet cells which was expressed at a gene and protein level before goblet cells were microscopically identifiable. These findings influence how we understand and define Barrett's oesophagus. Finally, with the help of modifications designed to improve the practicality of plate based single cell RNA-seq in clinical science, Richard identified an adaptive-to-innate immune switch in tumour cells from a single patient with oesophageal adenocarcinoma treated with immunotherapy (anti PD-L1), as part of a clinical trial.

#### <u>Imaging analysis of cellular phenotypes</u>

Using time lapse microscopy Richard made *in vitro* models of the squamo-columnar interface and worked with imaging analysis experts to develop software to automatically identify cellular motion phenotypes to explore the squamo-columnar interface.

#### ASPP2 interaction in the pathogenesis of gastric cancer

Using fresh processed gastric mucosal tissue obtained as part of INGEN (see below) Richard established an organoid culture system which allowed demonstration of how the tumour suppressor ASPP2 was crucial in disrupting cell polarity during H. pylori infection, and that this could be rescued with small molecule inhibition resulting in a reduced bacterial colonisation.

<u>Current and future collaborative research with Ludwig Institute for Cancer Research following joint appointment between Nuffield Department of Medicine (4 PA) and OUH (6PA) of Richard Owen as Consultant Upper GI Surgeon, to be jointly supervised with Professor Xin Lu</u>

### BRC Funding of 1 PA awarded for this research in 2021 – for LUD2015-005 trial and INGEN Tissue banking project

#### LUD2015-005 (1)

To investigate the safety of combined anti CTLA-4 and PD-L1 treatments in oesophageal cancer, and a scientific plan to find response predictors. This work was part of a £4m CRUK accelerator award for investigating immunotherapy in solid organ cancers, with £1.2m specifically allocated to support this project. The trial has completed recruitment and is due for clinical analysis in Summer 2021. The scientific plan includes deep phenotyping of the early patient metastatic oesophageal cancer cohorts using whole genome sequencing, RNA-seq, single cell RNA-seq, T cell receptor sequencing and circulating tumour DNA methylation and hydroxymethylation analysis. This data has been compiled and is being analysed.

#### Multi-Omic and Digital Image analysis of early Oesophageal Cancer (MODI-OC)

Following a small grant award from CRUK, Richard has supervised a DPhil student in laser micro dissecting pathologically distinct regions from a set of mucosal resection samples of early oesophageal cancer with the aim of using imaging features, molecular inversion probe technology and quantitative proteomics to map changes in the progression of Barrett's oesophagus to cancer.

#### Mutational analysis of single cell RNA-seq

Richard developed machine learning algorithms to identify mutations in single cells. These single cell mutational profiles could be used to build a more comprehensive analysis of cellular hierarchy in normal and metaplastic gastrointestinal mucosa. Data obtained as part of LUD2015-005 (see above) will be used to complete this project.

#### LUD2015-005 (2)

The later cohorts of LUD2015-005 were for patients with potentially curable oesophageal cancer and, following completion of the analysis of the earlier cohorts with incurable disease, analysis will be extended into these patients to identify patients which may benefit from the addition of immunotherapy to their cancer treatment.

#### Circulating tumour DNA analysis

Using pilot data from LUD2015-005 as a guide, Richard will set up a prospective study of circulating tumour detection in patients who have undergone treatment of gastro-oesophageal malignancy. Combined with pre-treatment tumour profiling and cytology he plans to develop a monitoring programme to identify patients that may benefit from immune activating adjuvant treatments. Longer term he hopes to demonstrate that biochemical evidence of recurrence could be more sensitive than clinical or radiological recurrence and this may open new treatment options for patients with recurrent cancer to improve quality of life and life expectancy after radical treatment.

#### Insights into Gastro-Esophageal Neoplasia (INGEN)

Recognising the importance of a broad tissue bank and set up, we have maintained and made protocols for upper gastrointestinal tissue collection in Oxford from endoscopy. This bank currently holds over 4000 samples. Additional tissue collection from resection specimens is also ongoing.

#### **CRUK Collaboration (Professor Mark Middleton)**

Predictive and Prognostic Markers in Oesophageal Cancer Richard Gillies MD Thesis Newcastle University 2013 Jointly supervised with Professor Mark Middleton

#### **Abstract**

There is an urgent need for improved prognostic and predictive markers in oesophageal cancer to help guide increasingly radical treatment towards patients likely to derive benefit. To this end, research has focussed on two separate approaches – biological markers and metabolic imaging.

The association between survival and the expression of DNA repair proteins in oesophageal cancer was investigated in patients treated by surgical resection alone. No significant association between protein expression and survival was found. This suggests that these proteins do not describe the natural history of oesophageal cancer and are worthy of investigation as predictive markers of response to therapy.

In a non-randomised trial of neoadjuvant chemotherapy improved overall and disease-free survival was seen in subjects who had a pathological response to chemotherapy, confirming its utility as an early surrogate marker for survival. The association between XPF and XPA expression and pathological response to chemotherapy was investigated at both protein and mRNA level. High expression of XPF protein in pre-treatment tumour tissue was found to predict lack of pathological response to chemotherapy, suggesting it may have use as a predictive biomarker.

The presence of FDG-avid local lymph nodes, but not SUV<sub>max</sub>, at pre-treatment PET/CT was found to be negatively associated with overall and disease-free survival. In our trial subjects, repeat PET/CT examination was performed after chemotherapy. A significant association was demonstrated between metabolic response and subsequent pathological response, overall and disease-free survival.

This thesis tested the hypothesis that DNA repair proteins are predictive markers of response to neoadjuvant chemotherapy in oesophageal cancer. XPF protein expression in pre-treatment tumour tissue predicts lack of pathological response to oxaliplatin and 5-fluorouracil. This is the first such result in a prospective trial and, subject to further validation, supports the principle that individualised chemotherapy, based on pre-treatment tumour biomarker expression, is a realistic future goal.

# DNA Damage Repair Proteins as determinants of sensitivity to platinum chemotherapy Thomas MacGregor Doctor of Philosophy, University of Oxford 2016 Jointly supervised with Professor Mark Middleton and Professor Ricky Sharma

#### Abstract

DNA damage repair proteins are determinants of sensitivity to platinum chemotherapy in preclinical models and in patients with cancer. The XPF-ERCC1 heterodimer incises DNA strands adjacent to platinum-DNA adducts and is essential for repair of platinum-DNA interstrand cross-links (ICLs). High expression of ERCC1 has been correlated with lack of response to platinum chemotherapy, but less is known about the value of XPF in predicting response to platinum-based chemotherapy. MUS81-EME1 is also involved in replication-coupled ICL repair. The role of MUS81 as a biomarker for response to platinum-based chemotherapy has not been examined.

This project tested the hypothesis that high tumour levels of the DNA repair proteins XPF and MUS81 are associated with lack of response to platinum chemotherapy.

In the first part of this thesis, microarray analysis of gene expression in samples from patients with oesophageal adenocarcinomas treated with neoadjuvant oxaliplatin-fluorouracil demonstrated an association between high levels of genes encoding ICL repair proteins (including *ERCC1*, *MUS81* and *EME1*) and poorer clinical outcomes. In addition, functional pathway analysis suggested a link between down regulation of cell cycle and anti-apoptotic pathways and response to treatment.

In the second part, high levels of XPF and MUS81 proteins in pre-treatment biopsies were correlated with worse outcomes following neoadjuvant oxaliplatin-fluorouracil chemotherapy for oesophageal adenocarcinoma. It was found that, in keeping with the microarray results presented in the first part, high pre-treatment levels of the G2/M-phase marker Cyclin B1 were associated with worse clinical outcomes. The relationship between XPF and MUS81 levels and response to DNA cross-linking agents in colorectal and anal cancers was also studied.

In the third part, it was demonstrated *in vitro* that reducing levels of XPF and MUS81 proteins increased sensitivity of colorectal and oesophageal cancer cells to oxaliplatin treatment.

These data suggest that XPF and MUS81 have the potential to be developed as biomarkers for clinical response to oxaliplatin-based chemotherapy.

Precision Staging and Management of Barrett's Oesophagus and Oesophageal Cancer: Genomic,
Imaging and Pathological Biomarkers
John Findlay
Doctor of Philosophy, University of Nottingham 2016
Jointly supervised with Professor Mark Middleton

#### **Abstract**

Barrett's oesophagus and oesophageal cancer represent two of the most important and challenging oesophageal disease processes globally, combining increasing incidences with high morbidity treatments, often with poor clinical outcomes. A major contributory factor is that disease susceptibility, progression and response to therapy are largely unpredictable, due to inherent biological complexity and variability. At present, just staging groups are used routinely as thresholds for guiding the use of therapies such as ablation, resection, and oncological therapies. However, these represent blunt tools that neither necessarily reflect patients' experiences nor appropriately select from the range of treatments available and are not representative this underlying biology. The aim of this thesis was to explore the potential of genomic, imaging, and pathological biomarkers in guiding more tailored and personalised therapy.

The first half of this thesis explores the role of genomic markers. The first chapter describes the identification of new loci and gene pathways associated with susceptibility to Barrett's oesophagus, dysplasia, and oesophageal adenocarcinoma, by further replication and analysis of a genome-wide association study. In addition, all reported genomic markers of these endpoints were identified and criticised by systematic review and synthesised by meta-analysis. Validation of these was then attempted, and lessons for markers and future research drawn.

The second results chapter describes a similar appraisal and synthesis of genomic markers of oesophageal cancer prognosis, response to therapy, and stage.

The third describes the first next generation sequencing study performed in oesophageal adenocarcinoma (and indeed any gastrointestinal cancer as far as the author is aware), before and after neoadjuvant chemotherapy. Using whole exome sequencing a new model of genomic tumour response was developed, and the implications for biomarkers explored.

The second half of this thesis follows a large cohort of patients with oesophageal cancer, from nearly 1000 undergoing staging, to more than 300 undergoing neoadjuvant chemotherapy, restaging and resection. In the fourth results chapter, the first application of decision theory to cancer staging identified the potential for routine imaging data to personalise and optimise oesophageal cancer staging.

In the following chapter, positron emission tomography-computed tomography was found to be more sensitive for identifying disease progression during neoadjuvant chemotherapy than computed tomography alone. Two factors were identified that could stratify risk of progression to incurable disease, including that encountered at surgery. These included 18F FDG avid nodes, with new concepts of metabolic nodal stage and response developed in conjunction with predictive models.

Thereafter, several conventional and experimental metrics of metabolic tumour response were compared and refined as predictors of pathological response. Existing metrics of metabolic tumour response were found to be suboptimal, and these new concepts and classifications of metabolic

nodal stage and response were found to have independent utility for clinical practice. Again, predictive models were generated.

Finally, the prognostic utilities of these markers were explored. Metabolic tumour response was found to be an imperfect surrogate of pathological response. However, metabolic nodal response demonstrated independent utility in identifying patients at high risk of early recurrence and death, both when used before surgery and afterwards. Indeed, several analyses demonstrated the additive utility of considering the primary tumour and nodal metastases as separate entities. Finally, prognostic models were generated, and a simple risk score was generated, using the four independent prognostic markers identified to stratify prognosis.

#### **CLINICAL RESEARCH IN OXFORD**

Surveillance after Resection of Oesophageal and Gastric Cancer (SARONG) trial

NIHR HTA Reference Number: NIHR134344 awarded 2022

£3.3 million

Chief Investigators – Dr Sheraz Markar, Senior Clinical and Research Fellow in Upper GI Surgery OUH and University of Oxford; Professor Tom Crosby, Professor of Oncology, Velindre University NHS Trust, Chair of NCRI OG Clinical Studies Subgroup, National Cancer Clinical Director for Wales Co-applicant on this grant.

RESEARCH QUESTION: Does the routine use of a structured follow-up program with regular radiological and endoscopic investigations improve survival in patients who have had surgical treatment for oesophageal or gastric cancer with curative intent?

BACKGROUND: Despite recent improvements in oncological and surgical treatment for patients with oesophageal and gastric cancer, 60% of patients with locally advanced disease who are treated with a curative intent will develop tumour recurrence and die within three years of completing treatment. In the absence of robust scientific evidence national or international guidelines have failed to reach consensus on the optimal surveillance strategy after primary treatment of oesophageal or gastric cancer.

AIMS/OBJECTIVES: To assess whether structured follow-up, including radiological and endoscopic investigations after completing curatively intended treatment, improves survival in patients with oesophageal or gastric cancer. Secondary aims are to determine the impact of a structured post-treatment surveillance upon the detection and treatment of cancer recurrence and health-related quality of life, including anxiety and to assess the cost-effectiveness of routine clinical, radiological, and endoscopic investigations compared with the current practice, led by clinical symptomatic follow-up.

METHODS: A prospective, multi-centre, randomised controlled trial of structured follow-up including radiological and endoscopic investigations versus standard clinical follow-up. The setting will be at least 20 large oesophago-gastric cancer UK cancer centres. We will aim to recruit 951 oesophageal and gastric cancer patients receiving surgical resection for curatively intended treatment of oesophageal or gastric cancer +/- neoadjuvant/adjuvant chemo(radio)therapy. At 4-12 weeks after the completion of oncological therapy (surgery or adjuvant chemo(radio) therapy) for oesophageal or gastric cancer, patients will be assessed for eligibility for inclusion in the trial. Patients will be randomised 1:1 to receive either intensive follow-up for up to 3-years, with clinical and computerised tomography (CT) investigation every 6 months, and an endoscopy at 12 months or to current standard NHS follow-up, i.e. clinical review at 6 and 12 months followed by targeted investigation as required based on the onset of new symptoms. The primary outcome is 3-year all-cause mortality and secondary outcomes include health-related quality of life (including anxiety), 3-year disease-specific mortality, pattern and treatment of tumour recurrence, and cost-effectiveness of follow-up in both study arms. Patients will be followed-up either in clinic or via email at baseline, 6, 12, 18, 24, 30 and 36 months post-randomisation.

TIMELINES FOR DELIVERY: The total length of the trial is 80 months. Recruitment will last 32 months and there will be a formal stop/go review of the internal pilot in month 15 of the project (9<sup>th</sup> month of recruitment) to ensure that a minimum of 9 centres are active and are recruiting at least 2

patients/centre/month. Data from the patients in the internal pilot phase will be included in the final analysis.

ANTICIPATED IMPACT AND DISSEMINATION: We anticipate that the study results will change national guidelines for oesophageal and gastric cancer patients and thus affect over 2000 patients who are treated with surgery in the UK annually. The findings are likely to extend beyond the UK and dissemination will be through publications, presentations, and appropriate use of media. We have incorporated a full patient and public involvement programme.

### <u>Clinical Outcomes research using our Institutional Database CODA (Cancer Outcomes Data Application)</u>

With funding from the Ludwig Institute for Cancer Research to employ a full-time data manager from 2016 I have set up a comprehensive dataset for oesophagogastric cancer care at Oxford University Hospitals. CODA-UGI (Cancer Outcomes Database Application for Upper GI) is a secure online database tool that enables the collection and curation of high-quality, complete data for gastric and oesophageal cancers. All key aspects of a patient's referral and care pathway are reflected in the dataset, including initial referral and demographics, the staging process, care plan decisions, dietary and fitness assessments, systemic treatments, surgical interventions, and outcomes.

This has led to a variety of clinical research projects and the development of a live dashboard.

#### Clinical outcomes research projects

- 1. ITU readmission project: The first draft of the dashboard identified a current ITU readmission rate of 13.3%, an increase on our own standard of 10% (although still lower than 15 20% reported internationally). This stimulated a focussed review of major morbidity in our centre.
- 2. ERAS review project: CODA oesophagectomy data has been used to review outcomes for 500 oesophagectomies within an enhanced recovery (ERAS) pathway, the largest UK series to date (paper for submission)
- 3. Laparoscopic gastrectomy review project: CODA data has been used for a propensity-matched analysis comparing minimally invasive and open gastrectomy in the enhanced recovery era (paper for submission)
- 4. ERAS compliance audit: CODA is used to demonstrate the effects of enhanced recovery pathway compliance in our centre. These assessments provide mandates for change and investment where adherence has slipped.
- 5. External audit submission: CODA provides automated uploads for national (NOGCA) and international (ESODATA) oesophageal cancer surgery audits

#### **CODA Dashboard**

Using the SQL database, Tableau, and html, we have created a CODA dashboard which visualises 21 key performance indicators including surgical quality, length of stay, morbidity, and mortality. These metrics are visualised using straightforward, colour-coded graphics embedded in a webpage, which are updated hourly and metered against agreed standards (e.g. AUGIS Provision of Services). The dashboard thus provides a systematic and current analysis of OUH oesophagogastric care quality.

The CODA dashboard's primary objective is to highlight performance problems early, perhaps before they are clinically perceptible. It is also a centre-specific resource to support fully informed consent for oesophagogastric surgery at OUH. Lastly, by applying filters to the data, we can actively compare different subgroups of interest, such as monitoring the introduction of a new surgical approach.

The dashboard is being expanded to encompass (i) all 47 metrics in the oesophageal cancer complication group (ECCG) definition set, (ii) long-term cancer-specific survival, filtered by treatment pathway and patient factors.

#### **TEACHING**

#### Lectureship in Clinical Medicine at Corpus Christi College

I was appointed Lecturer in Clinical Medicine at Corpus Christi College in 2013. I am responsible for coordinating and organising clinical teaching of the Corpus medical students from years 4-6. This involves delivering hands on teaching in surgery to the students and helping to organise the teaching in other specialities.

I interview each December for Corpus Christi undergraduate medical student entry.

#### Oxford Teaching in Palestinian Territories

Since 2010 I have organised a yearly teaching trip to Gaza and West Bank, taking a multispecialty team of 12 Oxford Consultants to teach clinical medical students at Al Quds University (Abu Dis, West Bank), Islamic University of Gaza and Al Azhar University (Gaza). We deliver teaching in:

- clinical bedside skills
- clinical scenario stations
- basic surgical skills
- seminar based teaching
- audit presentation

#### Other Undergraduate Teaching

- I regularly teach undergraduates attached to the Upper GI Surgical Team at the Churchill Hospital
- I am an Examiner for Medicine Clinical Finals at Oxford University

#### Postgraduate Teaching

- Each year I have 2 senior surgical trainees on the Oxford Higher Surgical Training Scheme, training them in oesophagogastric surgery
- Each year I have a senior Surgical Fellow (post CCT), training them in advanced oesophagogastric surgery, and preparing them for Consultant job application.
- I teach regularly on Royal College and AUGIS courses on Upper GI Surgery

#### **PUBLICATIONS**

Contemporary outcomes of left thoraco-abdominal esophagectomy due to cancer in the esophagus or gastroesophageal junction, a multicenter cohort study.

Klevebro F, Ash S, Mueller C, Garbarino GM, Gisbertz SS, van Berge Henegouwen MI, Mandeville Y, Ferri L, Davies A, Maynard N, Low DE

Dis Esophagus. 2024 Apr 28:doae039. doi: 10.1093/dote/doae039. Online ahead of print.PMID: 38678385

Recurrence and Survival after Minimally Invasive and Open Esophagectomy for Esophageal Cancer - A Post Hoc Analysis of the Ensure Study.

Henckens SP, Schuring N, Elliott JA, Johar A, Markar SR, Gantxegi A, Lagergren P, Hanna GB, Pera M, Reynolds JV, van Berge Henegouwen MI, Gisbertz SS; ENSURE study group

Ann Surg. 2024 Apr 5. doi: 10.1097/SLA.0000000000006280. Online ahead of print.PMID: 38577796

Oncological outcomes of patients with oligometastatic oesophagogastric cancer.

Down B, Lakunina S, Maynard N, Markar SR, Gordon-Weeks A

Eur J Surg Oncol. 2024 Apr;50(4):108231. doi: 10.1016/j.ejso.2024.108231. Epub 2024 Mar 5.PMID: 38461569

Predictors of anastomotic leak and conduit necrosis after oesophagectomy: Results from the oesophago-gastric anastomosis audit (OGAA).

Griffiths EA; Oesophago-Gastric Anastomotic Audit (OGAA) Collaborative; Writing Committee; Data Analysis; Steering Committee; National Leads; Site Leads; Collaborators

Eur J Surg Oncol. 2024 Mar 7;50(6):107983. doi: 10.1016/j.ejso.2024.107983. Online ahead of print.PMID: 38613995

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BJS Open. 2024 Mar 1;8(2):zrae026. doi: 10.1093/bjsopen/zrae026.

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Musa A, Crawley J, Haj-Hassan T, Inglis R, Maynard N.Lancet. 2023 Dec 16;402(10419):2292-2293. doi: 10.1016/S0140-6736(23)02639-9. Epub 2023 Nov 30.

Palestine and Israel: for an end to violence and the pursuit of justice.

Smith J, Abdel-Mannan O, Abuelaish I, Kelly B, Maynard N.Lancet. 2023 Nov 25;402(10416):1974-1975. doi: 10.1016/S0140-6736(23)02509-6. Epub 2023 Nov 10.

Benefits of maximally invasive oesophagectomy Maynard ND British Journal of Surgery 2023;110:1116-1117

Left thoracoabdominal oesophagectomy – a contemporary update on technique and outcomes Singh M, Low, D, Maynard N
British Journal of Surgery 2023;110:1574-1587

Delayed surgical Intervention after Chemoradiotherapy in Esophageal cancer: (DICE) study Chidambaram S, Owen R, Sgromo B, Chmura M, Kisiel A, Evans R, Griffiths EA, Castoro C, Gronnier C, MaoAwyes MA, Gutschow CA, Piessen G, Degisors S, Alvieri R, Feldman H, Capovilla G, Grimminger PP, Han S, Low DE, Moore J, Gossage J, Voeten D, Gisbertz SS, Ruurda J, van Hillegersberg R, D'Journo XB, Chmelo J, Phillips AW, Rosati R, Hanna GB, **Maynard N**, Hofstetter W, Ferri L, Berge Henegouwen MI, Markar SR

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