



Implementing OpenSpecimen – The University of Oxford Experience

OSCON22, St Louis
September 2022

Background

- Regulation – Human Tissue Act 2004, Research Ethics Committee Approval
- University HTA licence, overseen by Human Tissue Governance Team
- MSD – 16 departments, many research centres, groups and units
- Wide range of individual solutions at department or group level –
 - Off-the-shelf Sample Management Systems
 - ‘Home-built’ solutions
 - MS Excel spreadsheets
- Creates many issues –
 - Lack of overview of licenced activity – reporting complex and time-consuming
 - Risks of HTA non-compliance through inaccurate record-keeping
 - Lack of scalability – problems in maintaining accuracy of large and fluid datasets
 - Patchy levels of support - often reliant on key individuals with specific local knowledge and understanding
 - Old systems now out of support, or no longer compatible with modern IT infrastructure

Advantages of adopting a centralised system

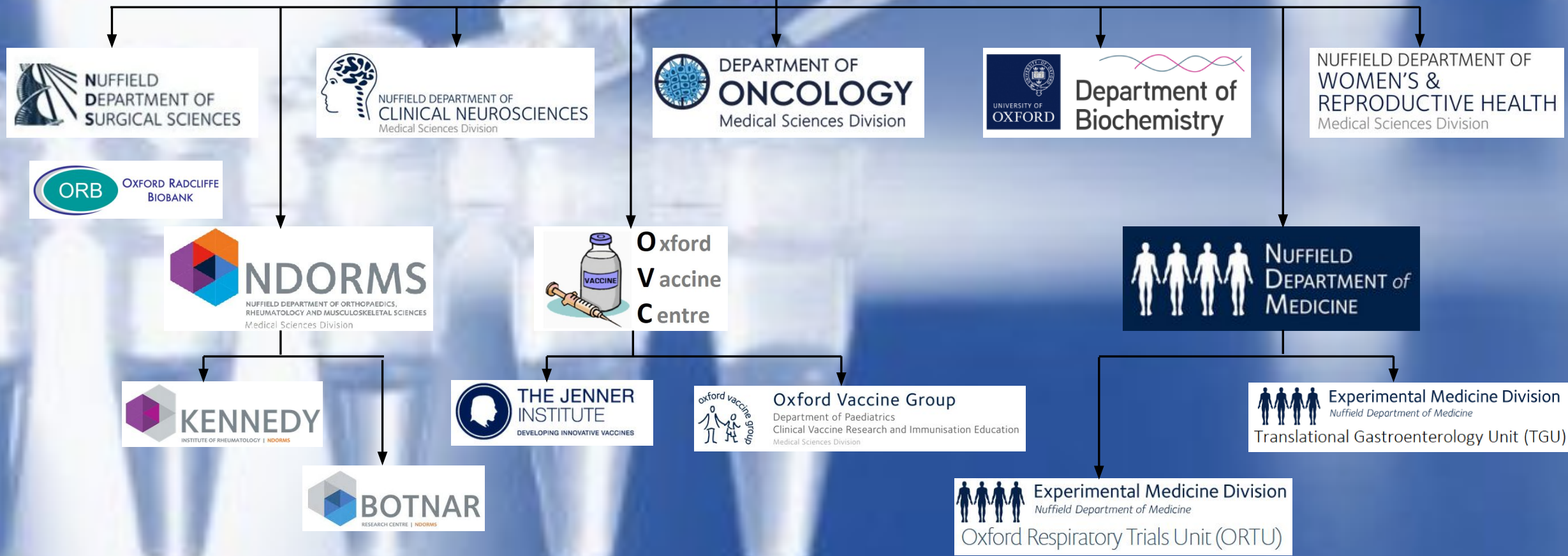
- Consistent approach to maintaining information necessary to demonstrate compliance with HTA statutory obligations
- Ensures system is managed in line with information governance best-practice – including patching, updates and maintenance, security, back-up
- Comprehensive role-based security allowing granular control of access to view and act on data appropriate to the user's operational activities.
- High level overview of all regulated activity under HTA Licence 12217
- Minimises duplication of effort and resource in supporting multiple disparate systems
- Allows sharing of expertise and resource in addressing common questions and issues.
- Worldwide user base with active user community

Implementing OpenSpecimen










- HTG and MSDIT seek a biospecimen management system, funded centrally at division level, to reduce risk
- OpenSpecimen selected following consultation and tender and order placed in mid to late 2019
- Funding also obtained for IT specialist to lead OS implementation, commencing in-post in May 2020 for two years
- OpenSpecimen instance implemented as ‘production’ webserver and database servers, and a separate ‘test’ server, running on MSDIT virtual machines
- OpenSpecimen implementation overseen by an OpenSpecimen Implementation Steering Group, with user involvement from an OpenSpecimen Implementation Working group



OpenSpecimen



Implementation timeline

- Initial Scoping of relevant collections – 15 groups/collections  Oct
- Establish OpenSpecimen Platform Infrastructure – MSDIT VMs  Nov 20
- OS Implementation Working Group MS Teams group established  Dec 20
- Installation of OpenSpecimen ‘Test’ and ‘Production’ systems  Oct
- OS system level configuration – Institutes & standing data  Feb 21
- Appraise OpenSpecimen consent management options  Feb 21
- Attempted recruitment Onboarding Manager – Dec 20 & Feb 21  Unsuccessf
- OS user authentication integrated with local eDirectory  May 21
- OpenSpecimen system backup operational  May 21

TGU GI Cohort Participant List

OPENSPECIMEN TEST Search...

Collection Protocols / GI Cohort Showing 100 of many more records

Participants

+ Add Participant View Specimens More Search

<input type="checkbox"/>	PP (REDCap) ID	GI Study Number	Date of Approach	Research Status	IBD Number	Sapphire Number	NHS Number	Site and MRN	Gender	Date of birth	Age at Registration	Patient Status
<input type="checkbox"/>	8882	Not Specified	21-08-2011	Consented	IBD942	ST-10-00001			Female		70 yrs	Patient
<input type="checkbox"/>	173	1154	27-04-2017	Consented	Not Specified	Not Specified			Male		66 yrs	Patient
<input type="checkbox"/>	172	1153	26-04-2017	Consented	Not Specified	Not Specified			Male		66 yrs	Patient
<input type="checkbox"/>	170	1151	25-04-2017	Consented	Not Specified	Not Specified			Female		74 yrs	Patient
<input type="checkbox"/>	171	1152	25-04-2017	Consented	Not Specified	Not Specified			Female		53 yrs	Patient
<input type="checkbox"/>	167	1149	18-04-2017	Consented	Not Specified	Not Specified			Female		61 yrs	Patient
<input type="checkbox"/>	169	1150	18-04-2017	Consented	Not Specified	Not Specified			Male		65 yrs	Patient
<input type="checkbox"/>	166	1148	31-03-2017	Consented	Not Specified	Not Specified			Male		51 yrs	Patient
<input type="checkbox"/>	165	1147	30-03-2017	Consented	Not Specified	Not Specified			Female		39 yrs	Patient
<input type="checkbox"/>	164	1146	28-03-2017	Consented	Not Specified	Not Specified			Male		77 yrs	Patient
<input type="checkbox"/>	4	1000	20-08-2015	Consented	Not Specified	Not Specified			Male		3 yrs	Patient
<input type="checkbox"/>	227	1202	04-06-2015	Consented	Not Specified	Not Specified			Male		11 yrs	Patient
<input type="checkbox"/>	226	1201	21-05-2015	Consented	Not Specified	Not Specified			Male		9 yrs	Patient
<input type="checkbox"/>	234	1209	21-05-2015	Consented	Not Specified	Not Specified			Male		4 yrs	Patient

NDORMS Experience

Observations

- What we like:
 - Learning curve is not as steep as expected
 - Good documentation and video tutorials
 - Strict validation of data before import
 - Flexible report and sample searching
 - Tissue coordinators are very happy with what they have seen so far
- What we find challenging:
 - Import of data needs thought and experience
 - Container implementation is confusing and sub-optimal
 - Understanding how Krishagni fit in



Containers

KIR.F17.S2R4Bin2BagE ⓘ

☾ KIR.F17

KIR.F17.S1

☾ KIR.F17.S2

KIR.F17.S2R1

KIR.F17.S2R2

KIR.F17.S2R3

☑ KIR.F17.S2R4

☾ KIR.F17.S2R4Bin2

KIR.F17.S2R4Bin2BagA

KIR.F17.S2R4Bin2BagB

KIR.F17.S2R4Bin2BagC

KIR.F17.S2R4Bin2BagD

KIR.F17.S2R4Bin2BagE

☾ KIR.F17.S3

User Feedback - NDCLN Tessa Jowell Study

“... everything is going smoothly, the system is easy to learn and therefore easy to use.”

“The help you have provided has been really useful and easy to follow instructions.”

“Adding the external collection sites was straight forward ... I’ve also managed to change the collection protocols to include additional samples. ”

“So far, I really like this system. The layout, content and ease of use makes it really user friendly. Compared to our previous system, RTrackIT, I would recommend OpenSpecimen every time!”

Closing thoughts...

- Plan out how storage is arranged – diagrams can help!
- Plan out how specimens and data are collected – is this largely standardised, or are there very specific requirements for individual collections?
- Identify, where applicable, timepoints or events in the study at which specimens and / or data is collected
- Map collection data requirements onto the OpenSpecimen default dataset – identify OS out-of-the-box (non-mandatory) data items that are not required, and any data items that will need to be added to OS
- Consider use wherever possible of OS User Interface features such as drop-down lists, radio buttons and conditional field display to facilitate good quality data entry.