DASO UNIT

Data Analysis &
Surgical Outcomes
Unit

2017

NSW GOVERNMENT Health
Northern Sydney
Local Health District

Background & Context

Hospitals and surgeons are under unprecedented pressure to deliver high quality care and at greater value than ever before. Surgeons need real-time data to help reduce complications, improve patient outcomes, minimise hospital stay, and reduce overall costs. Surgical quality cannot be improved if it cannot be measured; robust and valid data that are relevant to clinicians are needed.

A recent analysis of surgical data services was undertaken as part of a Surgical Oncology Review at Royal North Shore Hospital (RNSH). This showed:

- Overall poor standard and quality of surgical audit and data management processes with an obvious disconnect between clinicians and administrators about what data is important to collect and audit
- Great variation between individual surgical departments in relation to audit and data activity. The most common complaint expressed by surgeons was lack of data management support, with < 40% of surgical departments having a staff member dedicated to a data management role
- Some surgical departments do not undertake regular peer reviewed total practice audit or conduct structured morbidity and mortality meetings, both of which are mandatory components of the continuing medical education process overseen by the Royal Australasian College of Surgeons (RACS)

In order to address these issues a unit dedicated to surgical data management and audit activities (to be known as the Data Analysis & Surgical Outcomes (DASO) Unit) has been established.

The DASO Unit is an exciting new initiative at RNSH, the first set up to provide professional data support in order to deliver high quality surgical audit and stimulate surgical outcomes research. The DASO Unit will be overseen by a non-clinical manager but driven by surgeons. Specifically it will support and where necessary oversee and coordinate all audit and data management activities within surgical departments. This will include providing resources as well as expert guidance to data managers and surgeons on conducting prospective and total practice audits (local and national), data collection and analysis for research purposes. The DASO Unit will have a key role in developing and implementing systems to ensure uniform data integrity, data analysis and the provision of reports to meet individual surgeon, departmental, divisional and hospital clinical reporting needs.

Objectives

Key objectives of the DASO Unit are to:

- Develop a collaborative approach to surgical audit and data activities by establishing key networks and links with already existing data sets, and data management and governance bodies both internally and externally
- Ensure that audit processes for all surgical departments meet RACS models of Best Practice for Surgical Audit
- Overcome barriers to surgeons participating in data and audit activities by providing appropriate and relevant support and increasing access to resources at all levels throughout the Division of Surgery
- Develop processes for reviewing surgical audit and data management needs, and establish criteria for allocating DASO Unit resources (e.g. part time financial support for data managers)
- Coordinate surgical data management and audit staff so that there is consistency, where possible across the Division, ensuring the same quality data service is being received by all departments
- Develop and standardise systems used for analysis and reporting of data management and audit processes and outcomes
- Develop special data support and audit capability for focused surgical audits that will foster clinical research
- Identify through surgical audit some of the educational and training requirements and professional development opportunities for surgical staff at RNSH

Surgical Audit

What is Surgical Audit?

The Royal Australasian College of Surgeons (RACS) defines "audit" clearly in the *Surgical Audit and Peer Review Guide 2014 (http://www.surgeons.org/media/20671311/surgical_audit_and_peer_review_guide_2014.pdf)* as follows:

"… a systematic, critical analysis of the quality of surgical care that is reviewed by peers against explicit criteria or recognised standards, and then used to further inform and improve surgical practice with the ultimate goal of improving the quality of care for patients. The purpose of audit is to examine whether what you think is happening really is, and whether current performance meets existing standards."

A surgical audit involves:

- Collection and measurement of clinical activities and outcomes
- Analysis and comparison using standards, performance indicators and outcome parameters
- A peer review process with a feedback mechanism to address issues

The aims of audit are:

- To identify ways of improving and maintaining the quality of care for patients
- To assist in the continuing education of surgeons
- To help make the most of resources available for the provision of surgical services

Why Undertake Surgical Audit?

Reasons:

- To facilitate clinical incident reporting
- To comply with state and national audit initiatives (RACS, NSW Health etc.)
- To inform patients about surgical performance outcomes at a department and division level
- To drive continuous quality improvement in surgical care
- To assess surgical performance
- For health care regulation
- To facilitate surgical outcomes research

Benefits:

Potential benefits of surgical audit include:

- Sustained reduction in postoperative mortality and complication rates
- Decreased costs of care
- Performance information that guides surgical care and identifies areas for improvement and research
- Reduced variations in clinical practice
- Enhanced community reputation through improved patient outcomes
- More reliable application of evidence based medicine i.e. reduced inappropriate variation
- Shorter hospital stays
- Greater patient satisfaction

Research Data Management

What is Research Data Management?

This is the practice of planning, collecting, organising, storing, checking, maintaining, using and sharing your data so it is 'fit for purpose'.

One such purpose is "outcomes research". Clinicians should have:

- a clear and concise project protocol
- specific project timeline plans (including milestones)
- a research data management plan, and
- an ethics application where relevant

Optimal management of data for research projects ensures that the data collected is relevant and sustainable. This means it will be appropriate for use now and in the future. For data to be useful for both current and future researchers it needs to be well planned and well described.

Why Manage Research Data?

Data management is good research design made practical. Good data management is the back bone of good research methodology.

- Better data management = lower errors in research
- Lower errors means more meaningful research, i.e. more robust conclusions and hence more useful research results
- Good data management = good research design turned into practical systems

Proposed Structure of the DASO Unit

The newly created DASO Unit is a professional body to support and oversee data managers across the Division of Surgery.

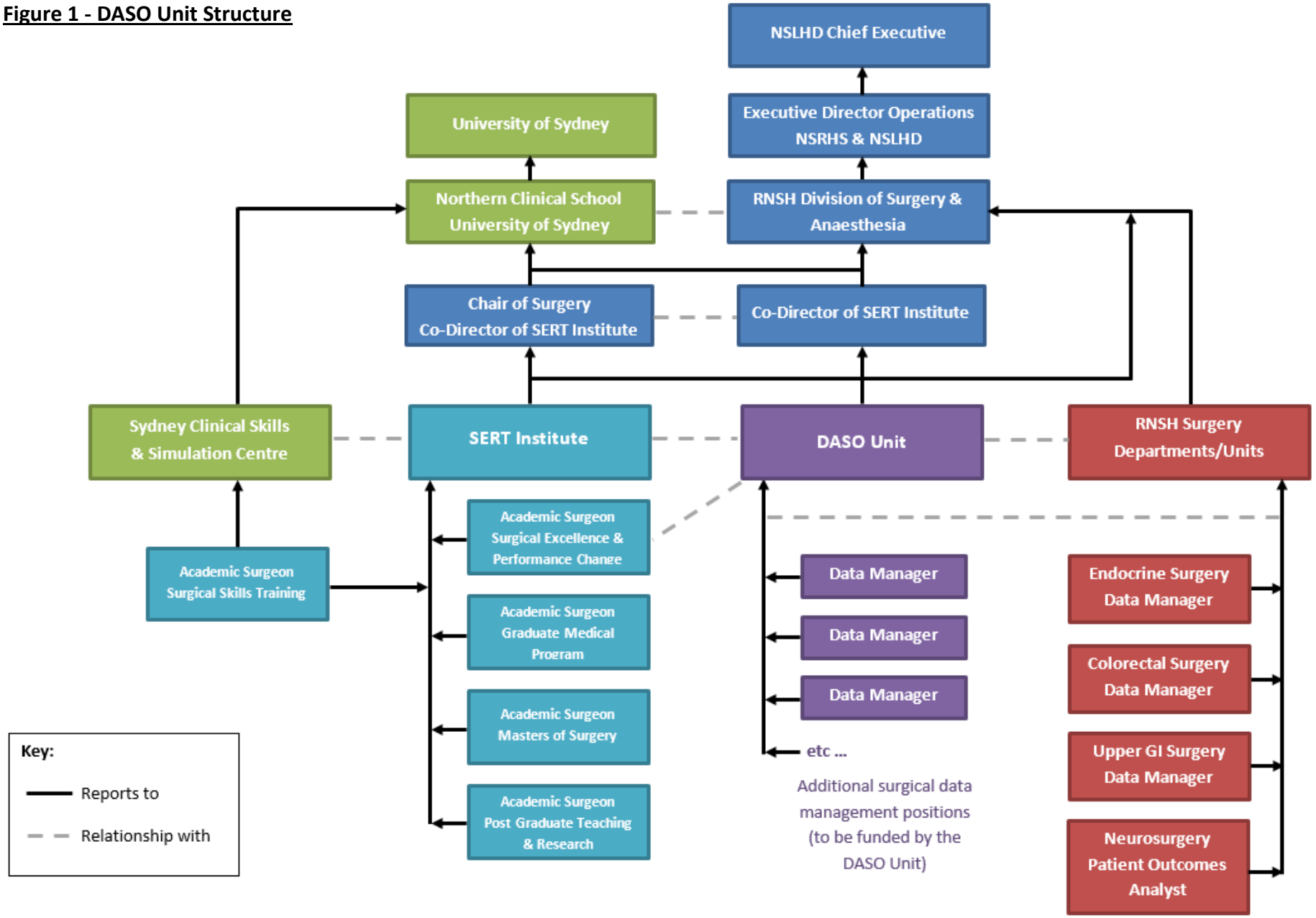
A full time manager for the DASO Unit was recently appointed. The manager will run the unit in conjunction with an experienced surgical quality lead clinician (Academic Surgeon - Surgical Excellence & Performance Change to be appointed in late 2017). The structure of the DASO Unit is outlined in Figure 1.

The DASO Unit will help create the right data management environment at RNSH. Individual surgical departments can choose to "opt in" or "opt out" but the underlying principle is that the process will be driven and overseen by surgeons, supported by management.

Funding

The NSLHD has committed to significant ongoing funding to support existing and additional data management and audit services in the Division of Surgery. At present, there are several data management positions within the Division of Surgery funded by "soft money" from external sponsors. As well as additional new funding the DASO Unit will work to attract even more support in the future from external sources (e.g. commercial partnerships with industry).

Figure 1 - DASO Unit Structure



Vision, Mission & Values

VISION

To be the standard for clinical data and audit practice; to improve quality of care through realising the full potential of surgical data and audit activities

MISSION

To ensure the highest possible standard of data collection and analysis by bringing a consistent and disciplined approach to surgical audit and data management processes

To engage and support surgeons to help them embed prospective audit into routine clinical practice

VALUES

REAL data with **REAL** meaning

Reliable & relevant: Surgical data that is timely, useful, reliable and relevant

Effective & efficient: Data processes and systems that are effective, efficient and add value to the clinical service

Advance: Advancing the standards of surgical data at RNSH through specialised support and expert advice

Lead: Leading the way in surgical care and outcomes at RNSH through accurate audit and performance

Action Plan

Objective	Action	Expected Outcome	Timeframe
Develop a collaborative approach to surgical audit and data activities by establishing key networks and links with already existing data sets and data management and governance bodies both internally and externally	Meet and form relationships with key data personnel in the NSLHD and with each surgical department to share the DASO Unit vision and strategy Identify existing data sources surgical departments have access to Coordinate and integrate these existing datasets into surgical data and auditing processes	Increased use and linkage of surgical datasets with other internal data sources such as: emergency data; operating theatre data; Patient Safety & Quality Unit data etc. Improved contribution to state and national registries e.g. CHASM; ANZGOSA; BreastSurg ANZ Quality Audit etc.	Short term
Ensure that audit processes for all surgical departments meet RACS models of Best Practice for Surgical Audit	Education, support and training for each surgical department to develop datasets and reporting systems that capture the minimum data set recommended by RACS	Improvement and standardisation in the quality of audit data across surgical departments	Medium term
Overcome barriers to surgeons participating in data and audit activities by providing appropriate and relevant support and increasing access to resources at all levels throughout the Division of Surgery	Increasing the number of surgical departments with access to data support i.e. data manager/officer Develop a culture of data and audit by incorporating systematic data capture into standard clinical care	An increase in the number of surgical departments engaged in data and audit activities	Medium term
Develop processes for reviewing surgical audit and data management needs, and establish criteria for allocating DASO Unit resources (e.g. part time financial support for data managers)	Establish a data and audit baseline with a visit to each individual surgical department to perform a detailed needs assessment and obtain information on existing data support and funding sources Create an infrastructure for regular review and reporting on audit and data management activities within each surgical department	A current and accurate map of existing data needs and resources within the Division of Surgery which will then be reviewed annually A recognised process for requesting DASO Unit resources and review of the progress and outcomes of allocated DASO Unit resources	Medium term

Coordinate surgical data management and audit staff so that there is consistency, where possible across the Division, ensuring the same quality data service is being received by all departments	Coordinate individual meetings with existing surgical data managers/officers to review current practices Establish a data management forum to allow exchange of ideas, resources and support across surgical departments Develop training and education opportunities for current and future surgical data managers	Consistency in data management services across surgical departments	Medium term
Develop and standardise systems used for analysis and reporting of data management and audit processes and outcomes	Implement structured data analysis and reporting formats Develop templates and tools to assist in data analysis and reporting of surgical data	A standardised system of data analysis and audit reporting across surgical departments	Medium term
Develop special data support and audit capability for focussed surgical audits that will foster clinical research	Increase access to expert data advice and resources such as database developers, data managers and statisticians	Increase in number of clinical research projects being undertaken by surgical departments	Long term
Identify through surgical audit some of the educational and training requirements and professional development opportunities for surgical staff at RNSH	Inclusion of data that captures training exposure of junior surgical staff within audit processes Conducting formal reviews of surgical audit reports to identify any knowledge and skill deficiencies to allow development of educational activities for surgical staff	Increase in the use of clinical data to inform education and training policies and courses	Long term