

DATA ANALYSIS & SURGICAL OUTCOMES UNIT

STRATEGY 2020 - 22



Health
Northern Sydney
Local Health District

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STRATEGY AT A GLANCE

VISION & PURPOSE



**LEADERS IN SURGICAL
DATA AND AUDIT
PRACTICE**



**TO USE AND IMPROVE DATA
MANAGEMENT AND ANALYSIS
PROCESSES TO SUPPORT
EVIDENCE BASED PATIENT CARE
IN SURGERY**

OBJECTIVES



**Improve and
standardise the
systems used for
data collection and
entry for surgical
audit and
outcomes**



**Implement,
standardise and
centralise high
quality data
reporting and
analysis processes**



**Implement
comprehensive
data governance
processes and
procedures for
surgical datasets**



**Strengthen DASO
Unit employee
engagement and
empowerment**

KEY RESULTS



Improve and standardise the systems used for collection and entry of surgical audit data and outcomes

- Move 75% of existing surgical data collection processes onto the REDCap platform
- Implement mandatory surgical minimum dataset for collection within 75% of surgical departments
- 50% of departments using SAGE for data collection and storage

Implement, standardise and centralise high quality reporting and analysis processes

- Establish standardised reporting framework and develop key set of outcomes across all departments
- Implement SAGE as a reporting portal for more than 50% of DoSA services and departments
- Implement interactive data visualisations for all DoSA services and departments transitioned onto SAGE

Implement comprehensive data governance processes and procedures for surgical datasets

- Data process manual established for 100% of surgical departments
- Data dictionary established for 100% of surgical datasets
- Review and update of data catalogue entries every 6 months for 100% of the datasets
- Identification of all current datasets that require governance and ethics approval
- Facilitate the submission of ethics/governance applications for 100% of eligible datasets

Improve DASO Unit employee engagement and empowerment

- Implement monthly unit meetings with a minimum attendance of 70% for all staff
- Conduct quarterly workshops each year, hosted by individual data managers to increase knowledge and skill sharing
- 100% participation from all DASO Unit team members in at least one data related training course, session or conference run externally to the DASO Unit per year

Introduction



In 2017 Royal North Shore Hospital established a new unit to support surgical departments with data and audit activities - the Data Analysis & Surgical Outcomes (DASO) Unit. The primary purpose of the DASO Unit is oversight, coordination, and advancement of surgical data and audit activity within the Division of Surgery & Anaesthesia (DoSA) at Royal North Shore Hospital.

In recent years there has been growing recognition of the importance of data in monitoring and improving surgical outcomes. However, there is also limited resources, structure, and support for surgeons to collect, maintain, report and utilise such data. The DASO Unit has been established to address these issues and the many challenges experienced by surgeons and surgical departments focussed on embedding data within surgical practice.

From 2017 the DASO Unit has successfully introduced numerous strategies and initiatives to foster a data culture within surgical practice, and to nurture effective surgical audit and outcomes research. In 2020 the DASO Unit was incorporated into the Surgical Education, Research and Training (SERT) Institute in order to strengthen, influence and enhance the impact of the data management and audit work being undertaken across DoSA.

The strategic direction and initiatives outlined in this document aim to advance the work currently underway and further embed the Unit as an important and valuable resource within the surgical services at Royal North Shore Hospital.



Setting & Context

In order to determine an appropriate strategy and approach for the DASO Unit, the key challenges related to surgical data and audit at the hospital level were captured through a consultative process with each surgical department.

The vision and purpose of the DASO Unit for this next phase and the corresponding objectives were developed with these challenges in mind. Key findings and challenges include:

- **Overall relatively low level of engagement from surgeons/surgical departments in relation to data and audit processes**

Identified reasons include: concerns about the interpretation that might be placed on data; limited knowledge and understanding of the need for data collection and how it can be applied. A perception that data and audit are not a routine part of clinical practice and minimal monitoring or governance requirements to undertake audit processes.

- **Disparity in data processes and resource distribution across surgical departments**

As a result of an uncoordinated approach to engaging and managing data management resources a variation exists in position descriptions and accountability/reporting lines for data personnel. Many report directly to busy clinicians with various levels of knowledge, background or experience to accurately assess the resources required to develop and maintain effective data systems and processes. This has also contributed to an overall lack of planning and vision for data collection and processes in addition to workforce development.

- **Privacy and governance risks resulting from non-existent or limited data frameworks, policies, procedures and guidance**

This has resulted in the development of poor data management and governance processes and practices in addition to a lack of clarity and accountability for any consequences that may arise from inappropriate data exposure.

- **Data silos and disconnectedness within the Division and across the hospital and LHD**

This has resulted in task and process duplication and inefficiencies. As well as an organisational structure with no formal and or meaningful reporting lines. Data personnel are distributed widely across the organisation, disconnected with limited support and ability to force change.

- **Limited integration between clinician-led data processes and those funded and undertaken by the hospital or distinct administration**

This has led to a lack of clarity on data interpretation and the utilisation of data collected. Apart from inhibiting potential clinical practice and efficiency improvements this situation also results in inefficient use of resources.

- **Lack of identity and recognition of data personnel as a collective group in the hospital setting**

Currently the public healthcare system is competing with private enterprises, universities, research institutes and not for profit organisations for highly skilled employees in the data domain. Data personnel require, professional recognition and appropriate remuneration corresponding to current market value. They also require career development opportunities, support and ongoing education. In the healthcare system there are a number of limitations impacting on career progression and opportunities often resulting in loss of staff and expertise. This is detrimental to health organisations due to potential disruption and risk of collapse of entire data processes, in addition to the subsequent loss of systems knowledge and talent.

- **Insufficient base line or collated information on the full scope of data and audit activities**

Before any progress can be measured baseline information is necessary to identify risks, determine resources and skills required and areas for improvements.

Vision, Purpose & Values

The DASO Unit vision and purpose were modelled on the NSLHD Strategic Plan 2017-2022 vision and purpose statements. Together they reflect the unit's universal approach to supporting the services and departments within the Division of Surgery & Anaesthesia.



Our NSLHD Vision:

Leaders in healthcare, partners in wellbeing

Our DASO Unit Vision:

Leaders in surgical data and audit practice

Our NSLHD Purpose:

Embracing discovery and learning, building partnerships and engaging our community, to deliver excellent health and wellbeing

Our DASO Unit Purpose:

To use and improve quality data management and analysis processes to support and facilitate evidence based patient care in surgery

The DASO Unit upholds the core values of the organisation as reflected in the following statements:

Collaboration

The unit aims to involve and engage all relevant stakeholders on strategies to support and improve surgical data and audit processes

Openness

The unit aims to take the time to listen to feedback to ensure its activities are effective and responsive to the needs of DoSA services and departments

Respect

The unit aims to equitably recognise and consider the data needs of services and departments across DoSA

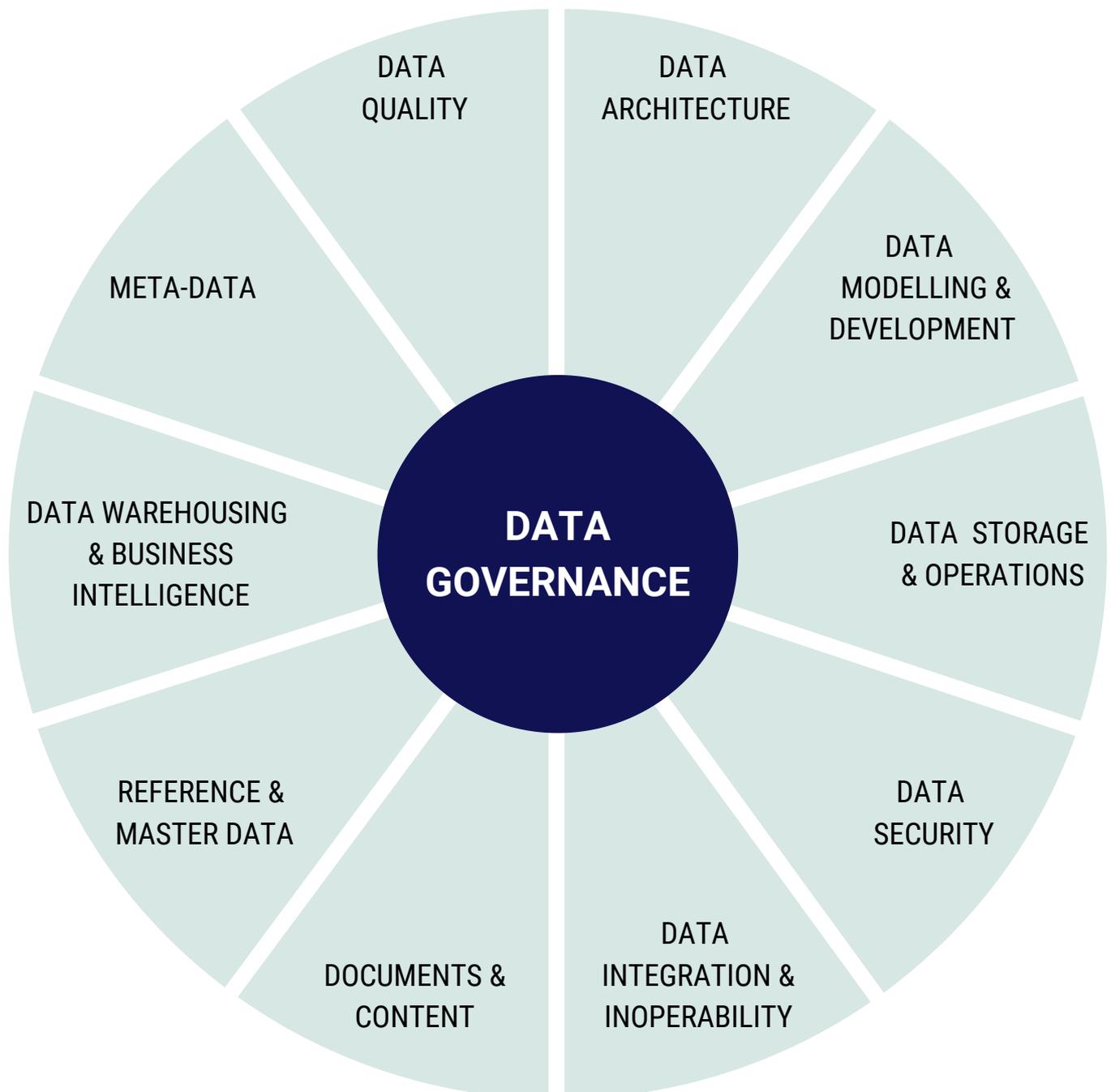
Empowerment

The unit aims to empower DoSA services and departments with data and information that drive improved practices and patient outcomes

Data Management Framework

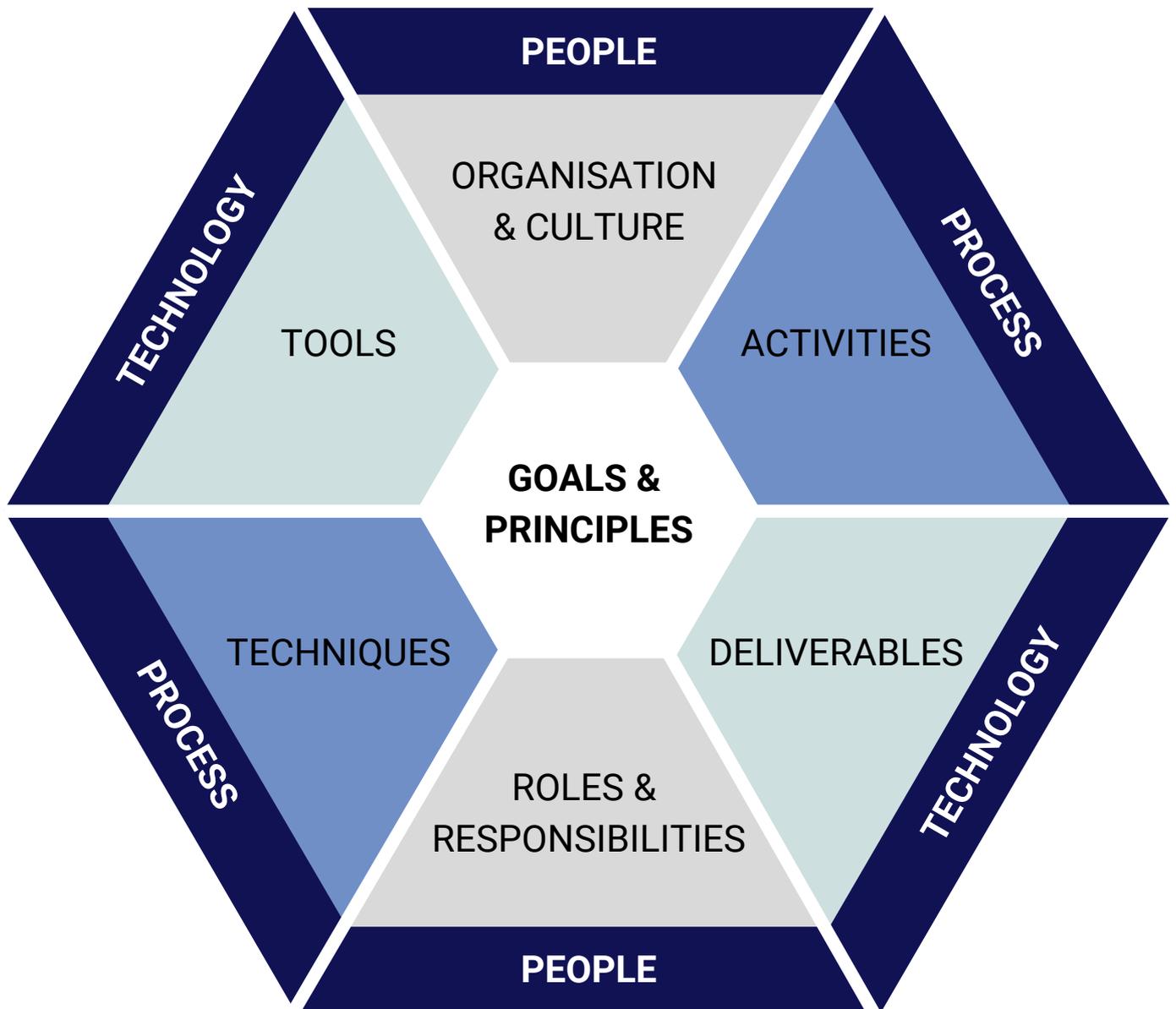
To facilitate and strive towards the DASO Unit's vision and purpose the following data management framework was embraced to establish successful and sustainable processes. This framework, developed by the Data Management Association (DAMA) has been successfully applied across many organisations and industries. The DAMA Data Management Framework will help provide insight that can be used to clarify strategy, develop roadmaps, organise teams and align functions. The DAMA Data Management Framework includes the DAMA Wheel and the Environmental Factors Hexagon.

DAMA WHEEL



The DAMA Wheel defines the Data Management Knowledge Areas. All areas are necessary parts of a mature data management function. The DASO Unit will be working towards developing these knowledge areas within the unit, and also building strong relationships with other hospital and district teams with expertise and knowledge in these areas.

DAMA ENVIRONMENTAL FACTORS HEXAGON



The DAMA Environmental Factors Hexagon shows the relationship between people, process and technology. It puts goals and principles at the centre as these provide guidance on how people should execute activities and effectively apply the tools required for successful data management.

The component pieces of the DAMA Data Management Framework can be summarised using both the DAMA Wheel (Knowledge Areas) and Environmental Factors Hexagon -

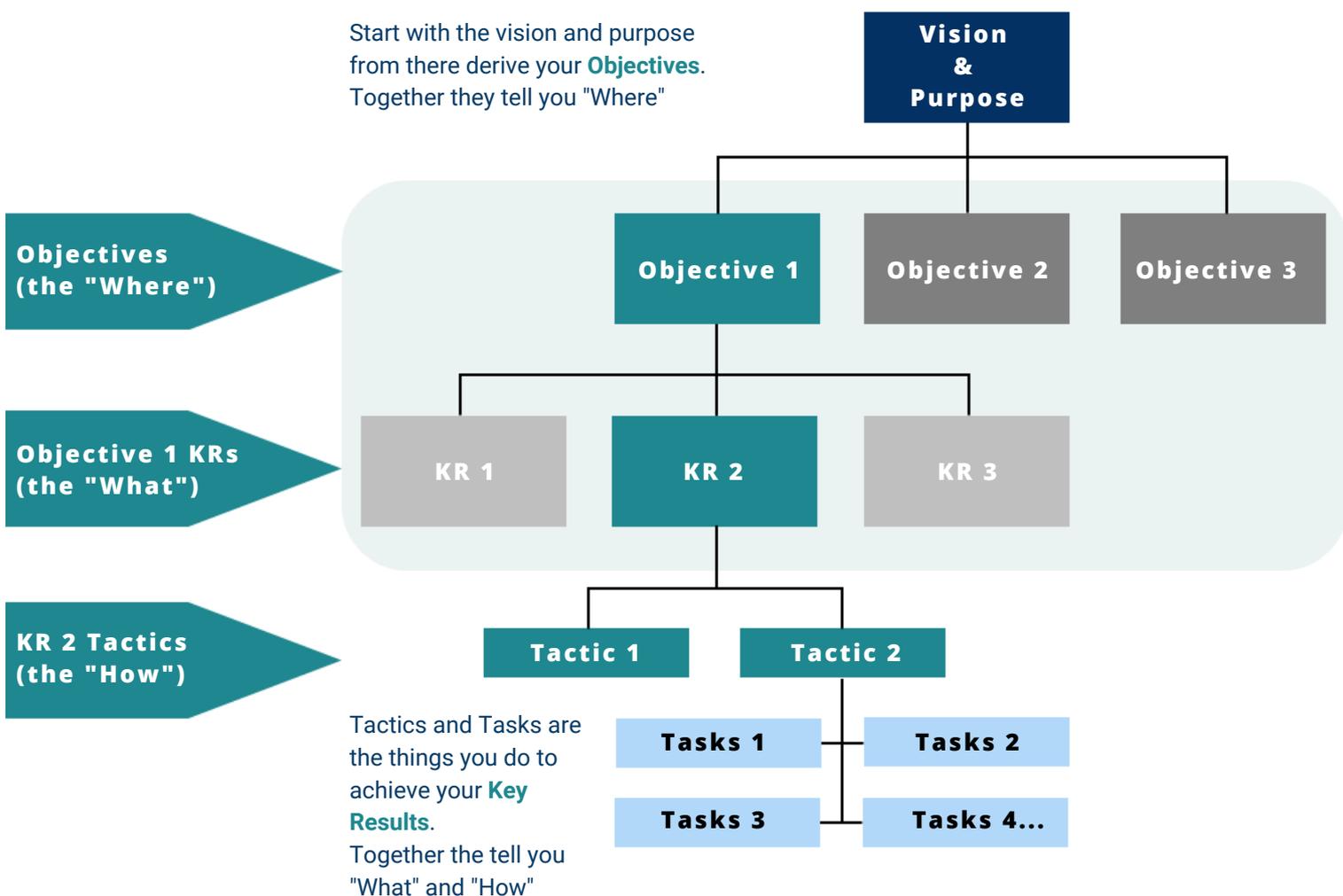
- **Goals & Principles:** describe the purpose of the Knowledge Area and the fundamental principles that guide performance of activities within each Knowledge Area
- **Organisation & Culture:** refers to organisation structures, metrics, values, beliefs, attitudes, preferences and expectations
- **Activities:** are the actions and tasks required to meet the goals of the Knowledge Area
- **Deliverables:** are the outputs of the activities within the Knowledge Area
- **Roles & Responsibilities:** describe how individuals and teams contribute to activities within the Knowledge Area
- **Techniques:** are the methods and procedures used to perform activities and produce deliverables in the Knowledge Area
- **Tools:** are the applications and other technologies that enable the goals of the Knowledge Area

Objectives & Key Results

THE OKR FRAMEWORK

The DASO Unit 2020-2022 strategy was developed by focusing on improving Knowledge Areas and positively influencing Environmental Factors outlined in the DAMA Data Management Framework. To facilitate these improvements and support the implementation of this strategy the OKR (Objectives and Key Results) framework was also used to set specific directions and achievable results for the unit and individual team members. A summary of this framework is shown in the diagram below. The benefits of using the OKR framework include improved focus, increased transparency and better alignment.

Start with the vision and purpose from there derive your **Objectives**. Together they tell you "Where"



ALIGNMENT WITH NSLHD STRATEGY

The DASO Unit has derived four main objectives from its vision and purpose statements.

Alignment of these objectives with the NSLHD strategic themes and objectives is shown on the following page.

DASO UNIT OBJECTIVES

NSLHD THEMES & OBJECTIVES

Improve and standardise the systems used for data collection and entry of surgical audit and outcomes

Implement, standardise and centralise high quality data reporting and analysis processes

Implement comprehensive data governance processes and procedures for surgical datasets

Strengthen DASO Unit employee engagement and empowerment



Connected Person-Centred Care

- a Improve quality and safety of care



Evidence-Based Decision Making

- a Evaluate and apply information and knowledge to improve clinical, business and organisational practices
- b Promote enquiry and research to develop, share and apply new knowledge



Responsive & Adaptable Organisation

- c Develop ICT capabilities to support clinical and business needs



Engaged & Empowered Workforce

- a Develop our culture to engage and empower our people
- d Develop our talent to ensure confident and capable people



DASO UNIT OKR'S

OBJECTIVE

1

Improve and standardise the systems used for data collection and entry for surgical audit and outcomes

Key Results

- Move 75% of existing surgical data collection processes onto the REDCap platform
- Implement mandatory surgical minimum dataset for collection within 75% of surgical departments
- 50% of departments using SAGE for data collection and storage

Tactics and tasks will focus on

- Engaging with departments to identify barriers to transitioning data processes onto an electronic platform
- Expanding the coverage of DASO Unit support across surgical departments
- Promotion, education and outreach for SAGE
- Promotion and education sessions on REDCap as a data platform and tool to capture data
- Embedding a commitment to clinical audit as a core element of surgical services at RNSH



**SURGICAL
AUDIT**

OBJECTIVE

2

Implement, standardise and centralise high quality data reporting and analysis processes

Key Results

- Establish standardised reporting framework and develop key set of outcomes across all departments
- Implement SAGE as a reporting portal for more than 50% of departments
- Implement interactive data visualisations for all DoSA services and departments transitioned onto SAGE

Tactics and tasks will focus on

- Reviewing current surgical reporting processes, applications and programs at all levels (e.g. departmental, divisional, district, state and national)
- Identifying existing reporting frameworks and outcomes for surgical datasets and what elements can be adopted/integrated
- Promotion, education and outreach for SAGE
- Up skilling staff on a variety of reporting tools and applications

OBJECTIVE

3

Implement comprehensive data governance processes and procedures for surgical datasets

Key Results

- Data process manual established for 100% of surgical departments
- Data dictionary established for 100% of surgical datasets
- Review and update of data catalogue entries every 6 months for 100% of the datasets
- Identification of all current datasets that require governance and ethics approval
- Facilitate the submission of ethics/governance applications for 100% of eligible datasets

Tactics and tasks will focus on

- Providing staff with the correct policies, procedures, information and frameworks to govern data appropriately
- Training in governance and ethics systems and processes
- Standardising the processes and documents used to ensure comprehensive data governance
- Maintaining up to date data governance documentation

OBJECTIVE

4

Strengthen DASO Unit employee engagement and empowerment

Key Results

- Implement monthly unit meetings with a minimum attendance of 70% for all staff
- Conduct quarterly workshops each year, hosted by individual data managers to increase knowledge and skill sharing
- 100% participation from all DASO Unit team members in at least one data related training course, session or conference run externally to the DASO Unit per year

Tactics and tasks will focus on

- Establishing training, development and education pathways for data personnel
- Strengthening collaborations and networks to tap into available learning opportunities and events
- Increasing employee participation in training, development and networking activities
- Improving visibility of the DASO Unit, it's team members and achievements



Review & Evaluation

Monitoring and evaluation is a vital component of the DASO Unit strategy.

This focus will measure progress in achieving the strategic objectives and key results (OKRs) and to provide data on a regular basis that informs implementation decisions and drives better outcomes.

The OKRs established at both the team and individual level will be reviewed on a monthly basis to monitor and track progress.

The DASO Unit achievements against each of the objectives outlined will be reported annually. In the evaluation of the unit's work case studies will also be identified to demonstrate the value and impact of the unit's work.

Throughout the life of this strategy opportunities to improve regular data collection and reporting will be continuously explored and implemented where appropriate. Further, evaluation of key responses will also be undertaken to demonstrate outcomes that build and support evidence based clinical practice.



EVALUATION

References

- The Data Management Association (DAMA) International. Data Management. In: 2nd edn. DAMA – Data Management Body of Knowledge. New Jersey: Technics Publications, 2017; Ch. 1
- NSLHD Strategic Plan 2017-2022, Northern Sydney Local Health District, July 2017

Glossary

Abbreviation	Definition
DAMA	Data Management Association
DASO	Data Analysis & Surgical Outcomes Unit
DoSA	Division of Surgery & Anaesthesia
NSLHD	Northern Sydney Local Health District
OKR	Objectives & Key Results
REDCap	Research Electronic Data Capture <i>An online data collection platform to manage online surveys and databases</i>
RNSH	Royal North Shore Hospital
SAGE	Surgical Audit Gateway <i>Internal data and reporting portal housed on the DASO Unit server</i>
SERT	Surgical Education, Research & Training Institute

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Royal North
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