

NSWHP Flow Cytometry Service Redesign

Flowing Together in the **rite** Direction

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Case For Change

Flow cytometry is a key pathology test for the diagnosis and monitoring of many blood, bone and tissue cancers. The incidence of these increase as the NSW population ages. The 15 Flow Cytometry (FC) laboratories in NSWHP have developed and operate in isolation. There is no coordinated strategic plan. This is required to provide a value based sustainable state-wide service, to deliver optimal outcomes and experiences to all patients and services to all doctors.

This disjointed approach to patient care is resulting in:

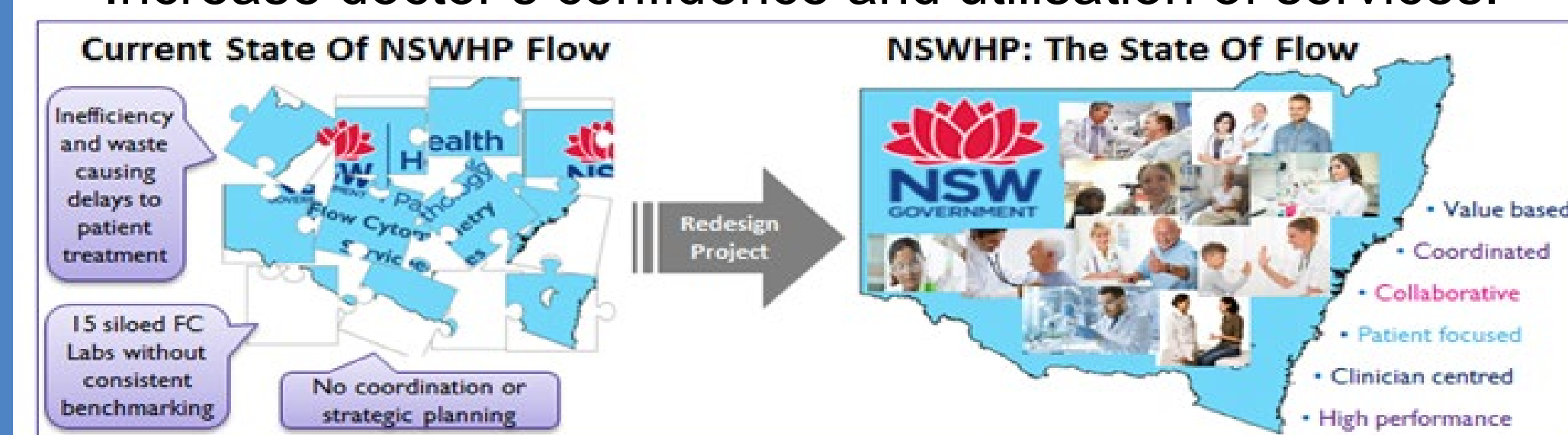
- Increased risk to patient safety;
- Decreased doctor confidence and utilisation of services;
- Increased operational costs.



Goal

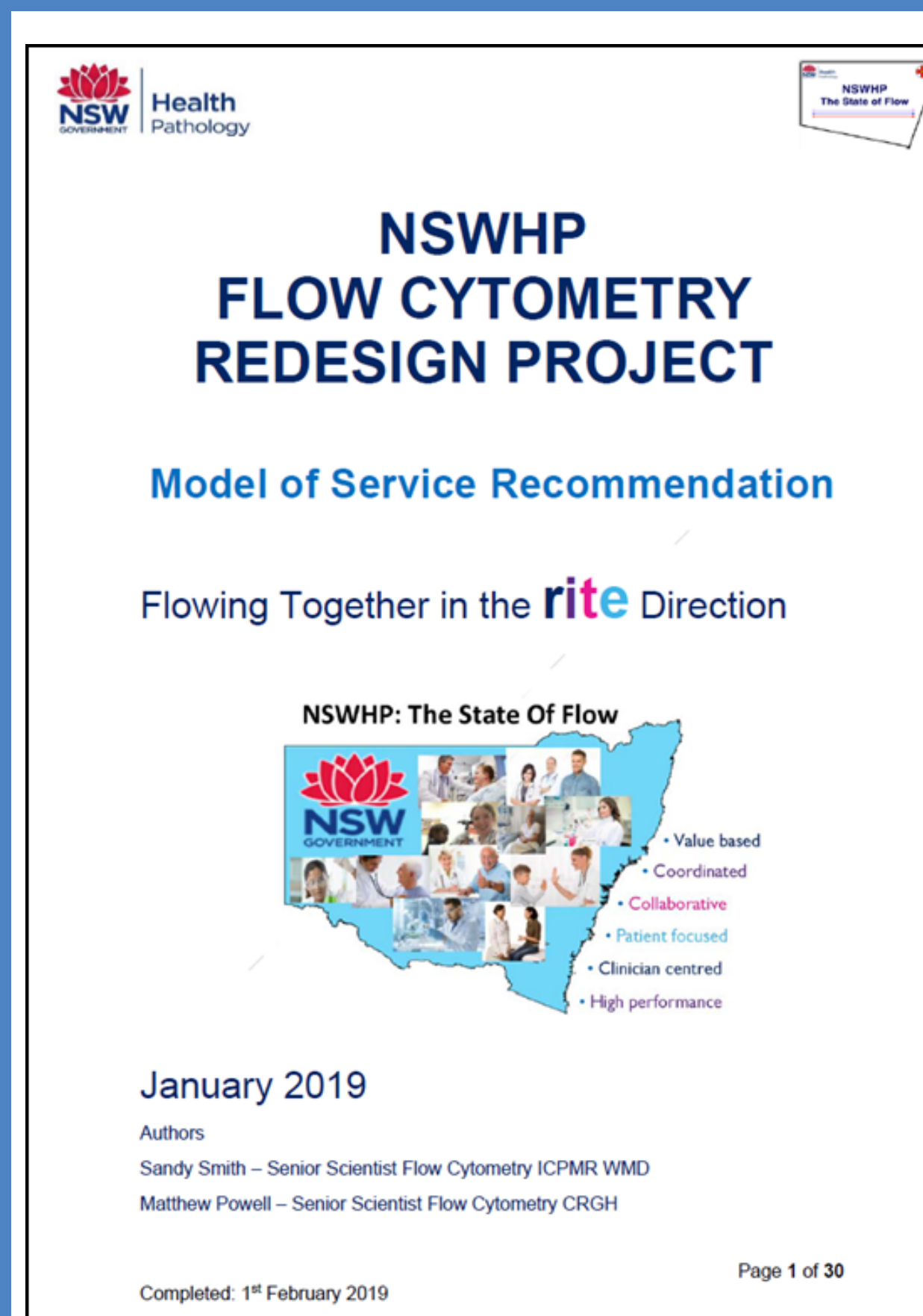
To provide a value based state-wide Flow Cytometry (FC) service by June 2021 that will:

- Provide timely access to testing to all patients;
- Minimise patient waiting time for diagnosis and treatment;
- Increase doctor's confidence and utilisation of services.



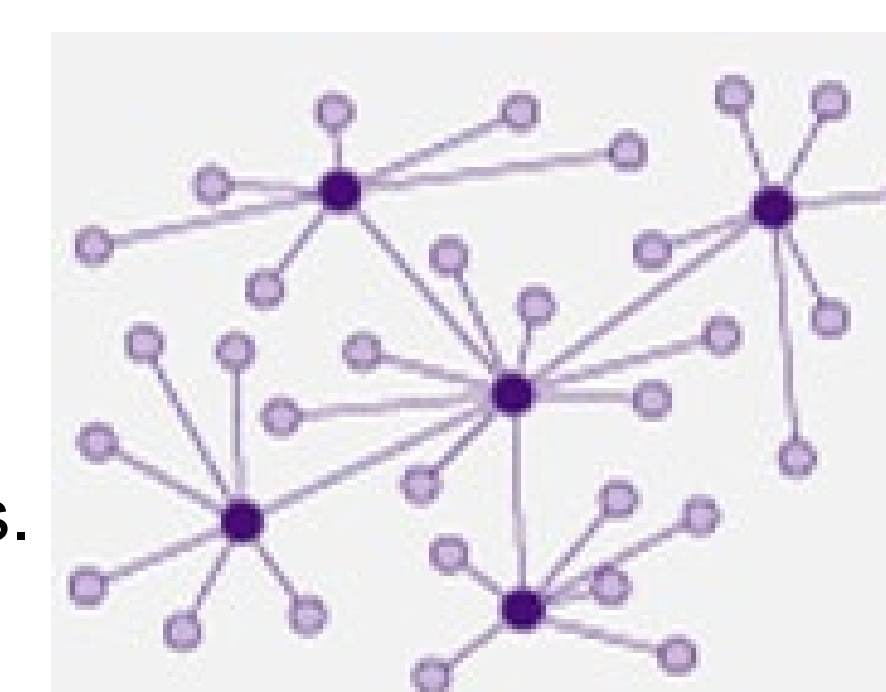
Method

- Doctors and scientists interviewed:
 - What are we doing well?
 - What can we improve now?
 - What can we improve for the future?
- Audits of laboratories:
 - Financial data;
 - Testing procedures;
 - Report formats;
 - Test types, numbers and turn around times.
- Issues were identified; prioritisation and root cause analysis was performed;
- Solutions for issues were stratified into quick wins, staged improvements and long term changes.
- Solutions were tested with stakeholders.
- Based on the audits, all possible configurations of the service were considered; the final recommended Model of Service would deliver the greatest levels of service and deliver the greatest levels of financial sustainability.



Outcomes

- Developed clearer picture of the service provided by NSWHP FC services.
- Identified inaccuracies and deficiencies in statistics.
- Identified issues and developed solutions with stakeholders.
- Delivered report on a Recommended Model of Service.
- Began implementation of endorsed solutions.



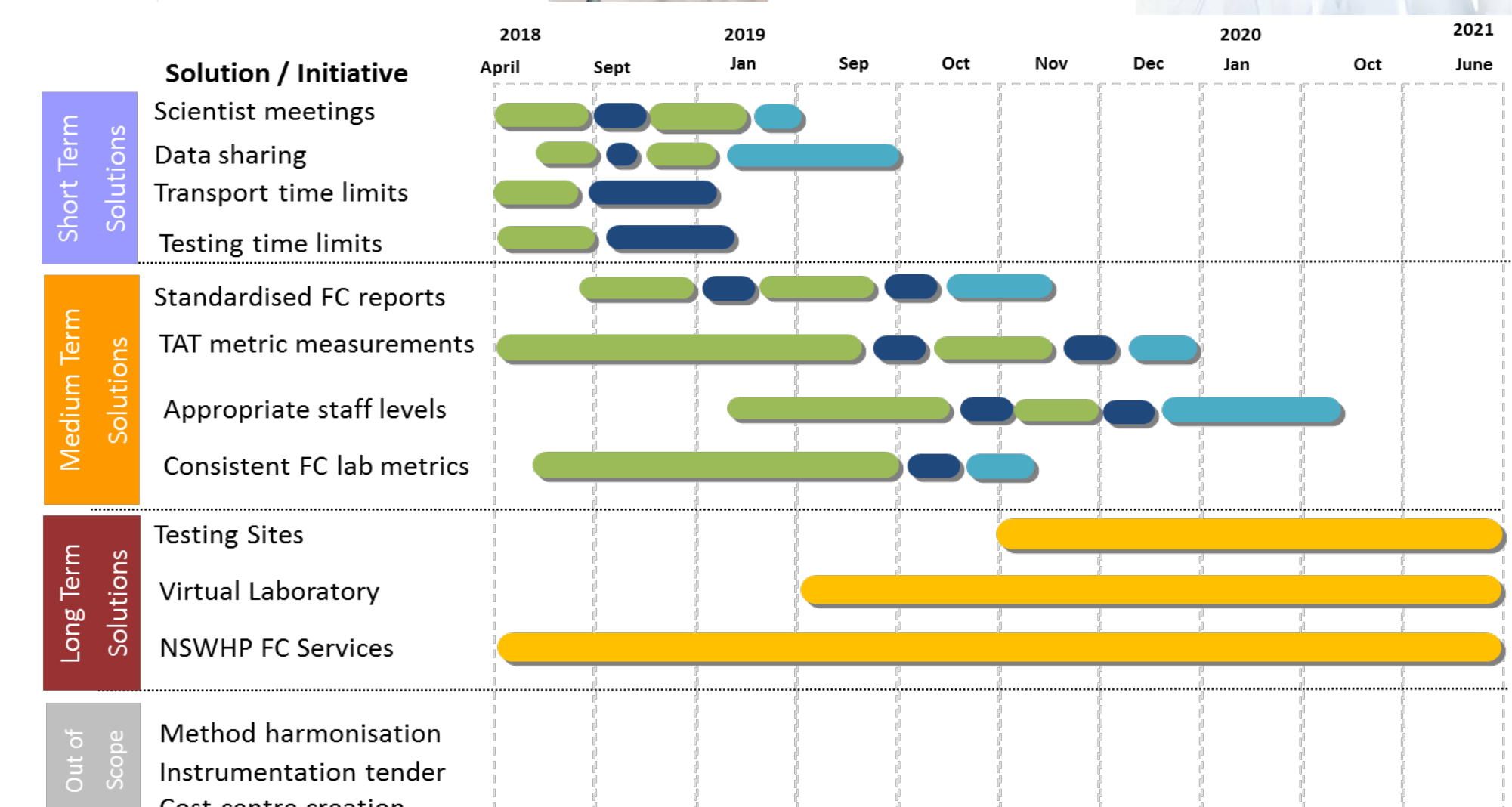
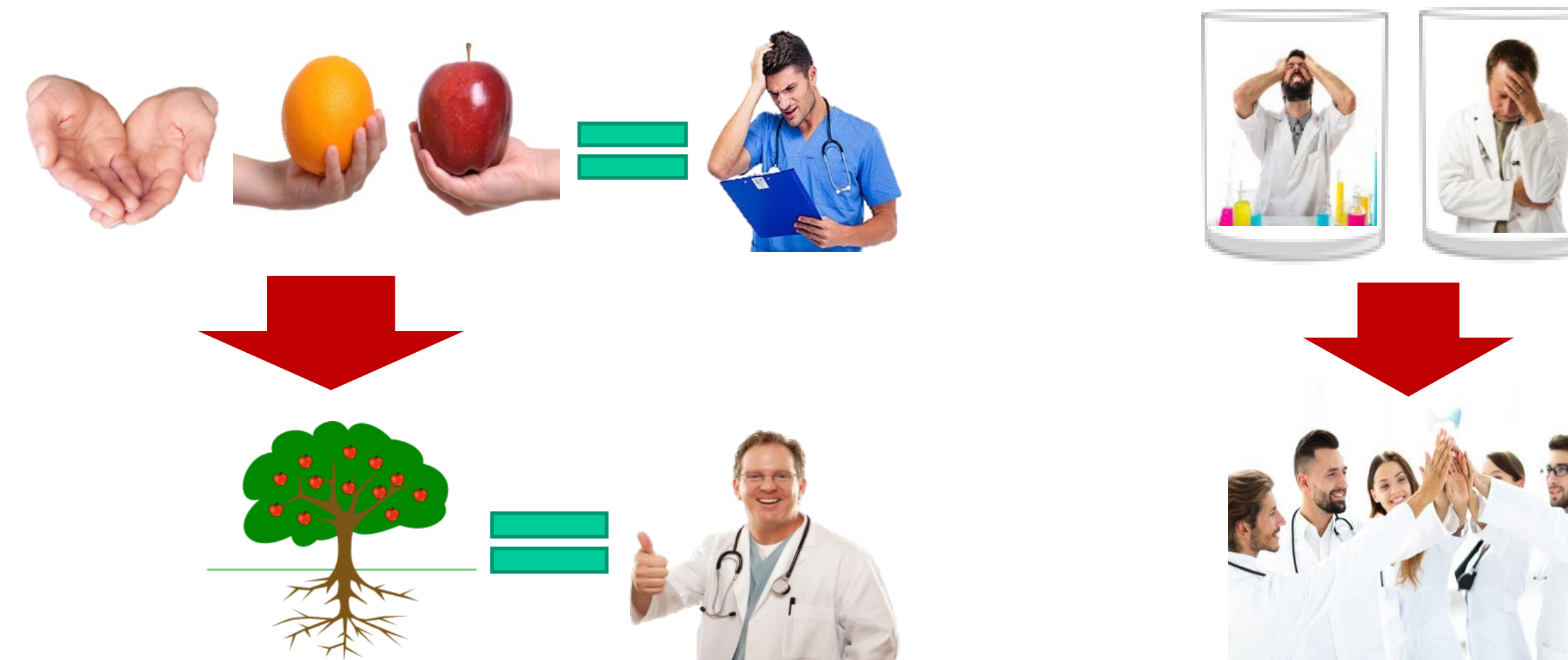
Recommended Model of Service: Wet Hubs with Dry Spokes

Solutions In Implementation

- Increasing doctor confidence by standardising reports for PNH and CD34+ testing.
- Increasing patient outcomes and doctor confidence with rapid access of results through a virtual laboratory network.
- Increasing patient outcomes and doctor confidence by standardisation of how tests are requested and collected and information.
- Increasing staff satisfaction and education with state-wide FC Scientists meetings.
- Reducing costs with a common tender for replacement of all NSWHP FC cytometers.

Solutions To Be Implemented

- Improve patient experience with decreased time to diagnosis and treatment by standardisation of:
 - Laboratory test report format and comments;
 - Laboratory testing catalogues and procedures.
- Improve patient outcome by:
 - Improving staff networking and education;
 - Improving doctor's access to FC staff.
- Improve patient outcome by improving FC staff networking and education.
- Increase doctor confidence and reduce cost by consolidation of unusual tests to specialised FC laboratories.
- Reduce laboratory costs by standardisation of:
 - Laboratory statistics and cost centres;
 - Laboratory practices and testing procedures.
- Increase applied translational research through coordination and dissemination of local research project information.
- Phased implementation of Recommended Model of Service.



Acknowledgements

Sponsors: Dr Stephen Braye, Dr Rob Lindeman, Dr Elizabeth Tegg,
 Redesign Lead: Nicole Manning,
 Scott Jansson, NSWHP Flow Cytometry Working Group members,
 WMD Flow Cytometry Team, CRGH Flow Cytometry Team

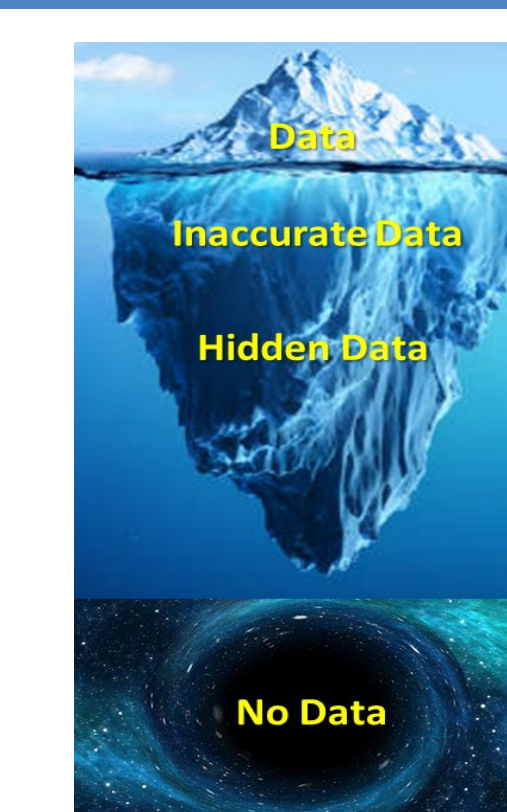
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Diagnostics

- Lack of consistency between laboratories
- Lack of consistent and accurate data
- Service consists of siloed labs with minimal networking
- Doctors most like: access to expert FC staff
- Doctors least like: lack of standardisation between FC sites



Planning and Implementing Solutions

- Phased implementation over 10 years
- Centralised sample processing – *Wet Labs*
 - Dispersed sample analysis – *Dry Labs*
 - Integrated network - *Virtual Lab* system
 - Standardisation of laboratory processes and reporting

Aspects	Service Based	Recommended	Financial Based	Current
Wet Labs	22	3+	1	11
Dry Labs	0	19+	0	11
Total Labs	22	22+	1	11

Sustaining Change

The already established New South Wales Flow Cytometry Working Group will be responsible for overseeing the sustainability of the individual solutions as well as the final Model of Service. Working Group taskforces have been appointed for report standardisation, statistics and KPIs, IT network connectivity for virtual laboratory integration, and standardisation of test names/descriptions.

Conclusions

We have learnt that communication with all stakeholders has been key to the progress of all aspects of this project. Accurate data is difficult to obtain; there is benefit to improving the accuracy of data used for KPIs and budgeting. There is a great variation in testing practices and processes across all laboratories, and there is willingness to standardise. Consolidation of services will lead to significant financial savings for NSWHP. Resistance from doctors stems from the perceived impact that the recommended changes will have on patient experiences and outcomes. This resistance will need to be mitigated through robust communication and feedback strategies. On-going support for Flow Cytometry staff is required to follow through on this recommended Model of Service.