

Selected proceedings of the APAC Forum 2015

Hidden Hospital

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Aims: In 2009, only 63% of patients in the adult emergency department (ED) at Auckland City Hospital were admitted, discharged or transferred from ED within 6 hours of arrival. A major contributor to patients exceeding 6 hours in ED was the inability for patients to access hospital beds (access block). The aims of this work were to:

- Reduce waiting time for admittance from ED to an inpatient ward bed
- Reduce access block by reducing waiting time for patients throughout their hospital stay

Methods: Improvement specialists from manufacturing, banking and management consulting with experience applying Lean Six Sigma and leading change formed a Performance Improvement Team (PIT) at Auckland DHB. The PIT's key initiatives included: training 23 healthcare staff in Lean Six Sigma Green Belt Training to lead their own projects; applying Lean Six Sigma principles to medical rosters to evenly distribute patients per doctor and align shift times with patient presentation patterns¹; and delivering a communications programme to engage clinicians in identifying and eliminating causes of waiting. Finally, the PIT facilitated over 300 ward staff to improve efficiency of tasks away from the bedside so that nurses could spend more time with patients.

Results: From 2009 to 2014 there was a 21% increase in adult acute elective and arranged presentations from 69,225 to 83,279. During this period the average wait time to be admitted from ED to an inpatient ward bed reduced from 8 hours (2008 & 2009) to under 1½ hours (March 2011 through June 2015). Direct care time of nurses with patients increased from 34% to over 60% on 10 wards. This equates to 2 more hours per nurse per 8 hour shift.

Conclusion: Access block at Auckland City Hospital has been reduced through improvement initiatives facilitated by experienced improvement practitioners working alongside healthcare workers to apply Lean Six Sigma and lead change.

1. Toomath R, Szecket N, Nahill A, Denison T, Spriggs D, Lay C, et al. Medical service redesign shares the load saving 6000 bed days and improving morale. *Internal Medicine Journal*. 2014; 44(8): 785-790.

Improving early childhood outcomes (Auckland, New Zealand)

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Background and aims: Participation in high quality early childhood education (ECE) is associated with improved cognitive outcomes at school and the development of characteristics that support learning.¹ Children who do not participate in ECE, or who attend regularly for less than one year, are disproportionately from socio-economically vulnerable

areas. In response to the New Zealand government's target of 98% participation in ECE by 2016, Ko Awatea and the Early Learning Taskforce led the Early Learning project to increase ECE enrolment and attendance rates in such areas of South Auckland.

Method: The project was structured as a collaborative with seven ECE centres participating, using the Breakthrough Series Collaborative Model for Achieving Improvement (BTS). The BTS included three learning sessions interspersed with action periods. Participants were trained in improvement methodology at the learning sessions and used plan, do, study, act cycles to develop and test changes according to local context during the action periods.

Participants collected weekly data on the number of licenced places occupied with an enrolled child, booked and attended hours, and the percentage of available capacity used. Data was entered into an Excel spreadsheet and collated weekly by Ko Awatea.

Results: The aggregated median enrolment rate rose from 76% in January 2014 to 89% in June 2014. Average attendance rose from 12.5 hours each week per child in January 2014 to 18.6 hours each week per child in June 2014.

Conclusion: Using BTS and Model for Improvement methodology enabled participating ECE centres to increase enrolment and attendance rates within existing resources. Staff in ECE centres developed the capability to develop and test changes for improvement and to understand their effectiveness.

- Mitchell L, Wylie C, Carr M. Outcomes of early childhood education: literature review. [Wellington, New Zealand]: Ministry of Education; 2008.

Care integration and coordination: Learning from a Qatari pilot

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Background and aims:

There is increasing pressure on the health system in Qatar, which is creating a strong driver for integrated and coordinated care. As part of Qatar's National Continuing Care Design Strategy, a pilot was launched to assess care coordination and integration across the healthcare system.

Methods: Lean Six-Sigma was used as the project management and improvement methodology in a 6-month pilot as it offers a structured rigorous data driven approach. The pilot was based on the following key components:

- Patient and healthcare provider engagement through focus groups, workshops and surveys.
- Healthcare provider partnership between primary and secondary care providers in Al Wakra municipality.
- Concurrent patient assessment of 220 inpatients to determine if they were placed at the most appropriate level of care for their clinical condition and if not, identify the reasons for that and recommend a more appropriate level of care. Case managers used the Managing Care Appropriately for Patients (MCAP) tool to conduct the assessments.

- Care coordination working with primary and secondary teams to facilitate patient transitions to a lower level of care, if appropriate.
- Cross-organisation pathways to support efficient and seamless care integration for patients transitioning between providers.

Results: Surveys revealed that 85% of patients did not have a formal care coordinator and expressed the need for better care coordination and integration of services across providers.

Inpatient assessments revealed that 46 patients (21%) had clinical needs that could have been more appropriately delivered at lower levels of care. The top 3 reasons for this were:

- lack of a defined care continuum
- limited capacity or absence of an alternate care setting
- limited home and community services

Workshops revealed that the implementation of cross-organisational pathways was hindered by absence of system-wide care coordination and system navigation functions and a technology infrastructure to support patient referral and transition between providers.

Conclusion: In order for care coordination and integration initiatives to be successful in Qatar, a strategic framework and mandate for system-wide implementation are needed. Approached in this manner, there is a potential to rebalance demand across the healthcare system and provide patient-centric care.

Values-based health: Improving care towards the end of life

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Introduction: This research sought to identify how advance care planning can be

implemented more broadly and successfully through considering: the strategic context; key success factors and barriers to implementation; existing systems which it can be built on.

Methods: Phase 1: Eighteen semi-structured interviews with internationally recognised experts including physicians, nurses, researchers, religious leaders and lawyers.

Phase 2: Four qualitative case studies of US health systems identified as leaders in end-of-life care and advance care planning. Sixty semi-structured interviews were conducted to support the case studies, mainly with physicians, nurses, senior leaders and change managers.

Notes and recordings from interviews were transcribed and coded thematically using Atlas.ti software. Participants confirmed themes identified.

Results: The research identified seven foundational elements for the implementation of advance care planning:

1. Strategic fit: a strategic commitment to patient- and family-centred care which supports and aligns with advance care planning.
2. Cultural change: this should first be promoted in the community, so there is an increased level of comfort with the concepts of end-of-life and death. Second, promotion should occur within health systems so that death is not seen as a failure and the system recognises the existence of a range of available end-of-life care options.
3. Senior leadership: senior leaders providing active, engaged and visible leadership.
4. Dedicated resources: first, quality improvement/change management resources for implementation and second, dedicated resources for the actual delivery of advance

- care planning services should be provided.
5. Embed in workflow: establishing advance care planning as an organisational expectation, and making it easy to do.
 6. Pre-existing infrastructure: an electronic medical record, preferably available across the continuum of care; existing physician education on communication skills; and established standard organisational approaches to change management.
 7. Amend to local context: adapting and amending known approaches to advance care planning to the health system's particular context.

Discussion: Advance care planning is more likely to be implemented successfully if foundational elements are in place. Dedicated resources, ongoing effort and change management are essential. In addition, cultural change in attitudes towards end-of-life in communities and health systems is required.

Eradicating rheumatic fever from Hawke's Bay

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Background and aims: Acute rheumatic fever (ARF) is a serious but preventable disease. Between July 2006 and June 2009, there were 26 admissions for ARF (5.8 per 100,000 people) at Hawke's Bay District Health Board. Twelve of these cases occurred in the suburb of Flaxmere, Hastings. The 'Say Ahh' rheumatic fever programme was implemented in 2010 to reduce the incidence of ARF in children aged 5-14 years attending Flaxmere schools.

Methods: 'Say Ahh' is a school-based throat swabbing and treatment programme in nine low decile schools covering a population of approximately 1,800 children. The programme is provided by health workers (school nurses or kaiawhina). An opt-in consent process was followed for all children attending those schools aged 5-14 years. Health workers visited each school 2-3 times per week to assess children with sore throats. A throat swab was taken and antibiotic treatment offered to those with a positive result. Households of children with positive sore throats were assessed to identify contacts who may require throat swabbing. Affected families were offered referral to a social worker and a comprehensive housing assessment was undertaken, followed by housing insulation repairs as required. Assistance was also offered for access to Work and Income, Housing NZ and other Government organisations. Local Non-Government Organisations and charities supported the programme by offering household items for families, such as curtains, beds and linen.

Results: The total number of throat swabs taken in the 'Say Ahh' programme for the period studied (Oct 10-Sept 14) was 13,311, with a positivity rate between 11.4% and 17.5% and no reduction in the positivity rate seen over the period. The overall rate of ARF in Hawke's Bay has decreased from 7.0 cases per 100,000 in 2010 to 1.3 cases in 2014. In the five years before implementation, the annual incidence of ARF among children aged 5-14 at 'Say Ahh' schools was 221.1 per 100,000. In the four years after implementation, the rate was 76.2 per 100,000. This is a statistically significant reduction of 66% (p=0.02).

Conclusion: The programme delivered a high quality equitable service that reached those children most at-risk from ARF and continually linked the screening and treatment programme with actions to improve the underlying

determinants of health. This approach has resulted in this programme being successful.

Achieving a 7-day service

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Eastern Health

Background and aims:

Eastern Health has three acute hospital sites and provides inpatient services to over 11,000 General Medicine patients per annum. The aim of this improvement work was to reduce the variation in LOS ranging from 3.6-11.6 days to bring it in line with major metropolitan health service peers who had a LOS of around 4.0 days.

Methods: A Rapid Improvement Event (RIE), attended by 30 clinical staff and 4 patients, was held in mid-2012 to collectively develop and implement a model of care that delivered a consistent service to patients regardless of unit or site, 7 days per week.

The RIE identified three key areas for change which were implemented on 13th June 2013:

1. Consultant led ward based multidisciplinary teams based on a 7 day week
2. Agreed standard daily work for all team members (7 days per week) incorporating:
3. Electronic Patient Journey Boards to make patient flow visible to all staff and all wards

To support the new structure, physician hours were altered to ensure the ward based teams were in place on the weekends. Allied Health staff and Pharmacists also increased their hours of treatment provided to general medicine patients on the weekends.

Measures included:

- Average Length of Stay (ALOS)
- Activity data and in particular, the number of patients treated
- Bed-days
- Bed-day savings

- mortality
- Staff survey 9 months post implementation

Results: Compared to the previous year, after 12 months, the new model of care resulted in:

- ALOS reduction of 0.9 days from 6.12 to 5.24 days
- 18% reduction in mortality from 4.61 to 3.78 deaths per 100 separations
- 476 more separations from 10,747 to 11,212 patients per annum
- 7,015 bed days saved across the three sites
- 19 less beds across the Eastern Health General Medicine Service.
- Reduction in variation in the LOS between units reduced to an average 4.0–6.5 days

Qualitatively, physicians felt that the new model improved the quality of care provided to patients, improved communication between the multidisciplinary team, and sped up the senior decision making process.

Weekend discharge performance improved considerably especially on Sundays with total weekend discharges increasing from 710 to 1,098 (an increase of 54.6%) in the 6 months prior to the new model (Jan-Jun 2013) to the second 6 month of the new model (Jan-Jun 2014). In the same period there were an extra 222 Sunday discharges, an increase of 72.8%.

Conclusion: This work has resulted in increased standardisation on work flow, reduced LOS and the perception on increased decision making. All changes to clinical staffing with the new model were cost neutral with no compromise to teaching and training.

Taking a temperature check on safety learning from measuring improvement at scale with the NHS safety thermometer

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Background and aims: As part of the English Department of Health's (DH) Quality, Innovation, Productivity and Prevention (QIPP) 'Safe Care' programme in 2010, 161 organisations came together to improve four high volume harms: pressure ulcers, falls, urinary tract infection (UTI) in patients with catheters and venous thromboembolism (VTE), which are estimated to collectively affect over 200,000 patients per year¹ in the English NHS.

Methods: A point of care measurement tool, the NHS Safety Thermometer (ST), was developed to measure these four harms according to seven design principles:² that the tool would have clinically valid definitions, be efficient, be used wherever the patient is treated, provide immediate data over time, measure all harm experienced by the patient regardless of avoidability, measure harm at the patient level enabling a composite measure of 'harm free' care (the absence of the four harms) and be easy to aggregate.

Various iterations were produced using Plan, Do, Study, Act (PDSA)³ cycles working with frontline teams and content experts. Data were collected at the point of care through conversation with the patient, patient assessment and reviewing patient notes.

In 2012, all NHS organisations were incentivised through a Commissioning for Quality and Innovation goal to use the ST on 100% of patients on one day per month. Data were analysed and publicly available using run charts to describe special cause variation, and Pareto charts and funnel plots to understand variation. Data were used locally to set improvement goals and measure improvement.

Results: The number of organisations submitting data increased from 428 (July 2012) to 822 (May 2015) with 7,861,432 patients surveyed, an average of 201,575 per month. Settings where data are collected include acute and community hospitals, care homes and patients' own homes.

Nationally, the proportion of patients receiving 'harm free' care has increased from 91.8% in July 2012 to 93.9% in May 2015. In the national data, from the first to the last median, this represents a decrease in harm from 8.2% to 6.1%, or a 25% decrease in the presence of harm.

Conclusion: PDSA methodology can be used to develop a measurement tool for use at point of care in a variety of care settings. The 'harm free' care measure engaged teams and detected change over time at a local and national level.

1. Harm Free Care. "Harm Free Care". www.harmfreecare.org. n.d. Accessed 2 April 2013.
2. Power M, Stewart K, Brotherton A. "What is the NHS Safety Thermometer?" *Clinical Risk*. 2012; 18: 163-169.
3. The W. Edwards Deming Institute. "The PDSA Cycle." The W. Edwards Deming Institute. 2015. Accessed October 20, 2015.

Post orthopaedic allied health assistant (AHA): Hip and happening

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Aim: Health care globally is experiencing funding and resourcing issues with increasing numbers and complexity of patients to manage.¹ It is necessary to review service and discipline structures to provide cost effective patient care without compromising quality and safety. One strategy is to optimise and upskill the allied health assistant (AHA) workforce to practice at the higher end of their scope. This project aimed to assess the cost effectiveness and efficacy of the Monash Health Acute Orthopaedic AHA role.

Methods: This project required the reallocation of an AHA to fill a physiotherapist (PT) vacancy due to financial and resource challenges. A range of productivity and

quality data was collected 12 months prior to AHA recruitment and 12 months after recruitment, including the number of patients attending therapy, number of therapy sessions, and length of stay, incidents and discharge destination.

Results: The staff cost saving of a Grade 3 AHA as compared to a Grade 2 PT approximately \$27,340/annum. Comparing pre- and post- role implementation data, the number of separations increased from 131 to 181 (38%); the number of occasions of service (OOS) increased from 542 to 724 (34%); total time for all OOS increase from 19,035 to 30095 minutes (58%) with the average OOS time increasing from 35.12 to 41.57 minutes (18%). Total length of stay reduced from 126 to 91 days (38%); average length of stay for non-complex hips reduced from 6.2 to 5.3 days and non-complex knees reduced from 5.4 to 4.8 days. The cost saving, per patient per day on this ward is approximately \$615. Discharge to home increased from 83 to 113 (40%). There was no change in adverse clinical incidents reported or complaints or compliments during the time period investigated.

Conclusion: Reallocation of lower acuity ambulation and therapy tasks from a PT to an AHA, utilising the 'right person right job' philosophy, has resulted in increased therapy at less cost without compromising quality of care. This role has been demonstrated to be a patient centred, cost effective and quality service provision model.

1. Unlocking skills in hospitals: better jobs, more care. Stephen Duckett and Peter Breadon. Grattan Institute, Australia, April 2014.

Spread and sustainability factors for successful healthcare improvement

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Background and aims:
Many projects with excellent

results fail to spread or sustain. This study aims to examine the factors that need to be in place to achieve spread and sustainability.

Methods: The study began with a literature review via Access Portal, Google Scholar, Medline and Ovid.

In October 2014, nine health-related organisations in England and Scotland which had demonstrated success in spreading and sustaining improvement initiatives were visited under a Hospital Alliance for Research Collaboration (HARC) scholarship. Interviews were conducted with 40 individuals and meetings held with a total of 190 clinicians and quality improvement specialists at all levels of these organisations to learn what factors they identified as essential for spread and sustainability.

Results: A thematic analysis identified factors that need to be in place to achieve spread and sustainability.

Enablers to spread:

- Strong leadership at executive and project team levels.
- Culture, people feeling able and supported to work in new ways working
- Significant levels of ownership, time, will, courage and effort.
- Strong belief in self and the team.
- Effective communication to all stakeholders about the problem being solved.

Enablers to sustaining:

- Staff stability.
- Strong leadership at executive and project team level.
- Availability of tools (such as the British NHS Spread and Sustainability Model¹) and training about sustainability.
- Staff understand how to effectively sustain improvements
- Effective communication to all stakeholders about the benefits of the improvement.

Discussion: Teams embarking on improvement projects should be aware from the outset of the factors that support spread and sustainability and incorporate these into the project.

1. Gustafson D, Maher L, Evans A. British National Health Service Sustainability Model, 2003.

Transformed access to appointments: A study with eight healthcare institutions within Singapore Health Services

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Introduction: Singapore Health Services (SingHealth) accounts for almost 50% of all outpatient services delivered in Singapore public healthcare. Before Sept 2013, many SingHealth institutions experienced high call volumes and abandoned calls in our call centres. Patients from our primary healthcare network experienced long waiting times (~25 mins) for referrals to specialist outpatient clinics. In addition, confusion arising from inconsistent rules for booking and coordinating appointments across SingHealth institutions resulted in high internal call volumes (~67k calls per year or 8.5% of annual call volume) and increased workload.

Aim: To improve the accessibility of the appointment system for patients and staff.

Methods: Gemba walks were used to observe issues; we developed process maps, and identified bottlenecks and waste. Detailed, large-scale surveys were conducted for patients, caregivers and ground staff (500 staff surveyed, 83% response rate). Insights gained were used to develop and test changes using plan, do, study, act cycles.

Clinical and administrative staff from primary and tertiary healthcare institutions in SingHealth worked to improve appropriateness of referrals, develop electronic referral protocols, and redesign the workflow. Appropriateness was tracked electronically and primary care physicians and specialists met regularly to discuss inappropriate referrals. Specialists provided Continuing Medical Education sessions share knowledge to make better referral decisions.

Staff across several SingHealth institutions were cross-trained and empowered to book appointments across institutions and disciplines.

Appointment rules were streamlined. Internet and mobile appointment platforms were redesigned to be more user-centric.

Results: The percentage of correctly fast-tracked referrals improved from 36% to 89% for Ortho (non-spine) urgent referrals.

Before intervention, primary care clinic staff were not trained and given access to book into specialist care institutions' appointments. Now, they can now book most of the referral appointments for 5 specialist care institutions.

Abandoned calls have also dropped from as high as 37% in FY2013, to 6% in FY2014 with no extra staffing.

Conclusion: These interim results achieved through inter-disciplinary and cross institutional workgroups and platforms are encouraging for SingHealth's efforts in transforming patient service.

Falls prevention is better than a cure

Gayle Smith

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Background and aims: Patient fall is one of the top four clinical safety incidents at Eastern Health. Analysis of the contributory factors identified failure to practice in accordance with the falls performance standard as the most significant cause.

Eastern Health tested whether improved compliance with the falls performance standard would reduce the incidence of falls among inpatients.

Methods: The project applied action learning methodology based on the performance excellence approach on two inpatient wards. The approach includes three steps:

1. Agree the performance standard.
2. Monitor performance against the standard.
3. Implement improvement initiatives to address any performance gaps.

The methodology:

- A 'Rapid Improvement Event' with staff and consumers from two pilot wards identifying 'barriers' to compliance with the performance standards.
- Plan, do, study, act (PDSA) cycles to test and learn from interventions designed and implemented during the project.
- Leadership huddles were conducted throughout the project to determine and address the human factors preventing compliance.
- Three focus groups (one for each pilot ward which included leadership and front line staff and one for the project leadership team) were conducted at the conclusion of the project.

Compliance with the performance standard was monitored through an audit program. Falls rates were monitored through the incident reporting system. Weekly performance reports were provided to the Executive.

Focus group information and data from the PDSA cycles was analysed at the conclusion of the pilot project to identify the critical success factors.

Results: Compliance with the falls standard increased from 74% in 2013 to 98% on Ward 1 and from 78% to 99% on Ward 2 during the 14-week pilot. The rate of falls per 1000 bed days reduced from 12.85 in 2013 to 12.57 on Ward 1 and 16.9 to

10.5 on Ward 2 during the pilot.

Critical success factors identified were:

- Ownership at the local level
- Data supporting the improvement
- Integrate the project into standard daily and weekly work (e.g. weekly audits and meetings)
- High presence of senior leadership
- Staff opportunity to voice views and suggestions
- Partnering with consumers.

Conclusion: The results of the pilot project demonstrated a correlation between improved compliance with the performance and reducing the rate of fall. The qualitative analysis also identified a number of critical success factors and barriers to achieving compliance with the performance standard. This information has informed ongoing implementation of the approach across all inpatient areas at Eastern Health and a sustained focus on reducing patient falls.

Turning haggis into pavlova ... Scotland to New Zealand safety in practice

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Counties Manukau Health

Background and aims:

The Scottish Patient Safety Programme in Primary Care was established in April 2013 to reduce the number of avoidable harm events from healthcare delivered in primary care in Scotland. The Scottish programme aimed for 95% of primary care clinical teams to achieve reliability in three high-risk areas (Warfarin, prescribing and monitoring of Disease-modifying anti rheumatic drugs (DMARDs), and medicines reconciliation) by 2016. Safety in Practice customised the Scottish programme for New Zealand general practice (GP). GP

teams aimed to achieve safer Warfarin management, medication reconciliation, and results handling.

Methods: We developed a collaborative of 23 general practices to implement a primary care trigger tool (structured case notes review), safety climate surveys and a monthly audit of three care bundles. The concept of utilising a care bundle audit in the three chosen high risk areas is to improve reliability in implementing best practice.

- Warfarin prescribing and monitoring
- Medication reconciliation following discharge from hospital
- Laboratory results handling systems

In Year 2, a fourth audit bundle for safer opioid prescribing was added.

Practices kept individual data to track their own progress, as well as submitting their bundle results for collation and analysis at a campaign level to track overall progress.

Results: The monthly audit results showed an overall composite measure improvement in all three patient safety bundles areas.

Warfarin Management: Improvement in compliance to best practice from 10% in April 2014 to 74% in February 2015.

Medication reconciliation following discharge from hospital: Improvement in compliance to best practice from 15% in April 2014 to 62% in Feb 2015.

Practice test result handling: Improvement in compliance from 60% in April 2014 to 90% in February 2015.

Practices self-completed the safety climate survey and the primary care trigger tool (structured case review) and composite group data was not collected. Practice-based meetings allowed reflection on data collected and identification of changes to be tested within the practice.

Conclusion: Safety in Practice improved compliance with best practice among participating general practices in warfarin management, medication reconciliation and laboratory test results handling.

Engage to perform: The role of doctors in high performing organisations

Paul W. Long

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Background and aims:

Medical engagement is “the active and positive contribution of doctors, within their normal working roles, to maintaining and enhancing the performance of the organisation, which itself recognises this commitment, in supporting and encouraging high quality care”. The aim of this study was to assess the level of medical engagement in health service organisations (HSO) in the UK, Australia and New Zealand (ANZ); understand the relationship between medical engagement and organisational performance, and compare results between the countries.

Methods: All medical staff at 85 NHS Trusts in the UK and 12 health service organisations in ANZ were surveyed, using a medical engagement scale (MES) instrument. The response rate at most sites was between 25% and 30%. The MES was developed with a sample of over 20,000 NHS staff, good reliability (0.7 to 0.93) established for the sub-scales (Working in an Open Culture, Having Purpose and Direction, Feeling Valued and Empowered) and validity.

The MES consists of 30 items and is administered via a website link. It includes organisational identifiers such as division, role and length of time working in the organisation.

The resulting analysis provides an overall index of Medical Engagement levels as well as scores on the sub-scales

that make up the index. These sub-scales act as a diagnostic tool identifying areas where the organisation might focus efforts to enhance levels of measured medical engagement. The data are collected from each participating organisation and then combined to provide a cumulative normative dataset.

Results: *UK findings:* A large number of significant correlations were observed between the medical engagement data and the set of performance measures (Care Quality Commission-2013). Organisations with high levels of medical engagement performed well on the external indicators. Organisations with low levels were usually underperforming in other areas.

The relationships included a wide range of indicators, from clinical performance, financial management, safety indicators, patient experience and overall quality standards.

We found a strong association between these results and previously published data (2008). This suggests that medical engagement has a sustained probable causal link to organisational performance.

Australasian results: We now have data from 12 sites and over 2,100 doctors have completed the survey, thereby establishing an ANZ norm.

The data reveal relatively lower levels of engagement expected at the 12 ANZ sites based on the UK norms.

Data collected at four New South Wales HSO have also been analysed and compared to the ANZ norm. The profiles of medical engagement vary at the sites and also across the MES scales and sub-scales. This is likely to be replicated when further analysis of the remaining eight sites is completed.

Conclusion: Further investigation is required to explore how far the pattern of linkage between MES and organisational performance established in UK is also true of ANZ data.

URL:

www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2015/vol-128-no-1426-4-december-2015/6759