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THE UNIVERSITY OF AUCKLAND
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NEW ZEALAND

MEDICAL AND HEALTH SCIENCES

Waitemata District Health Board

Best Care for Everyone

Karanga: the first call

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The purpose of the karanga study was to explore the health benefits of karanga for kaikaranga, whānau, hapū and iwi and develop a model of practice that could be incorporated into health policies and practices. At the core of the study was the restoration and reclamation of karanga as a healing model for Māori. A kaupapa Māori research design was used for the study and drew on interdisciplinary scholarship of Māori development, colonisation, Te Tiriti o Waitangi, community psychology, public policy, and discourse theory. A focused literature review and pūrākau from nine kaikaranga informed the study. The pūrākau were cocreated by the kaikaranga and the interviewer and deductive and inductive thematic analysis used to inform the findings. The study team argued colonisation had a detrimental effect on the health and well-being of wāhine Māori and that karanga as a tool of restoration and reclamation has the potential to change this.

There were two primary health benefits of karanga in the current study, the assertion and restoration of the mana of wāhine, whānau, hapū and iwi and decolonisation of the mind. The assertion and restoration of mana was linked to feelings of confidence and self-worth for kaikaranga, whānau, hapū and iwi. For kaikaranga, mana related to representing the voice of Papatūānuku and the nannies who had crossed over to other side of the veil. It was also about being recognised as trustworthy by whānau, hapū and iwi. For whānau, hapū and iwi mana was about whakapapa, tūrangawaewae and economic development. Closely linked to mana was decolonisation of the mind. Decolonisation of the mind was the result of the retelling tikanga Māori through whanau, hapū and iwi pūrākau. The retelling of these pūrākau resulted in the normalisation of tikanga Māori in a colonised world.

Other health benefits included smoking cessation, establishing non-violent ways of disciple within iwi, grief resolution, as a way of reclamation of identify and sense of self, feelings of self-worth, learning te reo Māori and a healthy environment.

A karanga health model was developed and is being implemented in Ngāti Whātua settings. A multi-faceted approach to implementing karanga is required with iwi at the fore.

The study was funded by the Health Research Council of New Zealand

Zoledronate every 18 months for 6 years in osteopenic postmenopausal women: effects on fractures and non-skeletal endpoints

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Bisphosphonates prevent fractures in patients with osteoporosis, but their efficacy in women with osteopenia is unknown. Most fractures in postmenopausal women occur in osteopenic individuals, so if pharmaceutical intervention is to impact significantly on total fracture numbers, therapies with efficacy in osteopenic postmenopausal women are needed.

We report a double-blind trial of 2000 osteopenic, postmenopausal women, randomly assigned to receive 4 infusions of either zoledronic acid (zol) 5mg, or normal saline at 18-month intervals. Each was followed for 6 years. Monthly vitamin D supplements were provided but not calcium supplementation. Women aged >65 years with hip T-scores between -1.0 and -2.5 were recruited.

Baseline age was 71 (SD 5) years and femoral neck T-score -1.5 (0.5). The primary endpoint of osteoporotic fracture (i.e. osteoporotic non-vertebral fractures plus morphometric vertebral fractures) occurred in 190 women in the placebo group (227 fractures) and in 122 women in the zol group (131 fractures), hazard ratio (HR) 0.63 (95%CI 0.50, 0.79; $P < 0.0001$). The number needed to treat to prevent one woman fracturing was 15. Non-vertebral osteoporotic fractures (HR 0.66, $P = 0.0014$), symptomatic fractures (HR 0.73, $P<0.0027$), vertebral fractures (odds ratio 0.45, $P = 0.0018$), and height loss ($P<0.0001$) were also reduced in the zol group.

There were 41 deaths in the placebo group and 27 in the zoledronate group (odds ratio 0.65, 95%CI 0.40, 1.05). Rate ratios for adverse events were: myocardial infarction 0.6 (0.3, 0.9), composite vascular endpoint 0.7 (0.5, 0.99), cancer 0.7 (0.5, 0.9), and breast cancer 0.6 (0.3, 0.98).

Conclusions: Zol prevents fractures in osteopenic older women, substantially broadening the target population for pharmaceutical intervention to prevent fractures. The beneficial effects seen on cancer and vascular disease are consistent with data from previous studies and suggest that zol should be formally trialled for the prevention of these conditions.

WDHB Skin Service: GP Surgeon Scheme (GPSI), an effective model of care

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Aim: Waitematā District Health Board has implemented a new approach to the management of skin cancers by triaging lesions to specialist-trained general practitioners with the aim of reducing patient wait times and treatment costs. The primary outcome was to determine positive margin rates for general practitioners, with complication and infection rates as secondary outcomes.

Method: A retrospective audit was conducted on all excisions (n=2705) performed between 1 January 2016 and 31 December 2016 by the 13 WDHB GPSI general practice surgeons. Electronic patient records were accessed to review histology reports, microbiology reports, and prescribing information. Each lesion was classified into benign/non-invasive and malignant categories and surgical margins analysed. Infection rates were determined via prescribing information.

Results: The general practice surgeons performed 2705 excisions, 1887 (69.8%) of which were malignant lesions. Amongst malignant lesions, a positive surgical margin was observed in 66 (3.5%) excisions and 165 cases (8.7%) had margins that were either positive or had less than 1.0mm of surrounding healthy tissue. There were 321 (11.9%) cases of infection in 2705 excisions.

Discussion: New Zealand papers from the last two decades estimate NMSC positive margin rate amongst primary care physicians to vary from 16 to 31%; recent papers have published rates ranging from 6.8 to 9.5%. Publications from Europe describe variable general practice surgeon performance, ranging from a 13.9% to 33.5% positive margin rate. These impressive key performance indicators used to assess quality of care for WDHB general practice surgeons validate their position as part of the multidisciplinary team dealing with skin cancer. The KPI's show WDHB general practice surgeons have significantly improved at NMSC excision compared to their previous colleagues, locally and internationally.

Conclusion: This study validates the use of general practice surgeons and shows their integral role in managing the enormous volume of skin cancer in New Zealand.

What factors predict the confidence of palliative care delivery in long-term care staff? A mixed-methods study

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Background: Palliative care delivery has become central to the role of healthcare staff in long-term care internationally. Yet research has indicated that clinical staff in long-term care often lack self-confidence in palliative care delivery.

Objectives: This study 1) examined the impact of age, palliative care education, palliative care work-related experience and psychological empowerment on perceived confidence in palliative care delivery for long-term care staff and 2) qualitatively interpreted the social reality which shapes each of the predictors of palliative care delivery confidence for long-term care staff.

Setting: Twenty long-term care facilities in New Zealand.

Method: Utilising an explanatory sequential design, the current study includes: 1) a cross-sectional survey with a convenience sample of 139 clinical staff conducted in 20 long-term care facilities and 2) individual semi-structured interviews with a purposive sample of six clinical managers, 15 registered nurses and 18 healthcare assistants who cared for residents in their last month of life. Quantitative data analyses included descriptive and inferential statistics including hierarchical multiple regression. Qualitative data generated from the semi-structured interviews drew on constructivist grounded theory approaches for the analysis.

Results: Results of the quantitative analysis indicate that older age, (β = .349) previous experience (β = .298) and psychological empowerment (β = .291) are the most important predictors of palliative care delivery confidence. Findings from the analysis of semi-structured interviews revealed four themes as underlying factors impacting on palliative care delivery confidence, namely: 1) mentorship by hospice nurses or colleagues 2) contextual factors such as organizational culture, resources, death experience 3) maturity and 4) formal education.

The real costs of swallowing complaints in a public health system

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Objective: Difficulty swallowing may lead to aspiration pneumonia and death. In a hospital setting where patients are admitted for other causes, we hypothesised that the additional burden of a swallow problem would increase length of stay, rate of pneumonia, cost, readmissions and morbidity compared to those without dysphagia.

Method: Retrospective case control analysis of patients admitted to Waitematā DHB over 3 years with hip fracture. Two groups were identified and compared – those with a coded diagnosis of dysphagia (n=165) and an age- and gender-matched group without (n=2455). The number of in-patient days, cost per patient, diagnosis of pneumonia, 30-day readmission and mortality rates were compared.

Results: For those in the hip fracture with dysphagia group (HF+D) the mean age was 85 y compared to 78 y ($p<0.05$) and length of stay was 32 days, more than twice that of the hip fracture without dysphagia (HF-D) group (14 days)($p<0.05$). Mortality within 30 days of admission was significantly different (18% vs 4%) but 30-day readmission rate was similar (8% vs 11%). Rate of aspiration pneumonia was 10 times greater in HF+D (6.7%) vs HF-D (0.7%). Average admission cost was $36,698NZD (HF+D) vs $22,028NZD (HF-D)($p<0.05$).

Conclusion: Complaint of dysphagia, in addition to hip fracture, lengthens inpatient stays and cost per patient. It is associated with increased aspiration pneumonia and greater mortality. Dysphagia screening at admission to hospital allows early identification of swallow compromise and may prevent complications and reduce costs.

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VitalsAssist - A mHealth Application for Early Detection and Escalation of Deteriorating Patients based on National Early Warning Score

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Introduction: Efficient patient monitoring and timely escalation would aid in reducing severe consequences. The latest advancement in the adoption of mobile technology and increasing feasibility and convenience of mobile health (mHealth) applications in healthcare have attracted interest among healthcare providers, policy makers, hospitals, and patients.

Study Objectives: One part of this research project was focused on three core areas applied to patient monitoring; (a) designing of a user-friendly vital signs monitoring application for clinicians with their engagement and feedback; (b) develop a mobile application for vital signs monitoring in real-time with integrated medical devices for automated escalation of deteriorating patient using national early warning score and (c) use of a structured medical data for rich clinical decision support for point-of-care decision making.

Methods: In order to measure the usability of the application, we adopted the international standard organisation's three usability measurable attributes: (1) Effectiveness: accuracy and completeness with which users achieve specified goals; (2) Efficiency (time): resources expended in relation to the accuracy and completeness with which users achieve goals, and (3) Satisfaction: freedom from discomfort and positive attitudes towards the use of the product. Four individuals took part in the evaluation; a medical doctor, a registered nurse, an experienced medically trained patient effectiveness advisor and a user experience designer.

Results: We successfully designed a user-friendly and interactive mobile application with integrated medical devices and clinical decision support functionality for clinicians. We conducted a task-based usability and accuracy test and found that the average accuracy was 97%, time taken for each task to complete was 7.5s (average) and the overall navigation was termed as 'easy to understand' by the users.

Conclusion(s): Initial usability results suggest that the proposed application is suitable to be implemented in the in-patient (acute care) settings for vital signs monitoring and auto-escalation of deteriorating patients based on the national early warning score. The next steps for this research is to validate the proposed application in the hospital (acute care) setting.

Acknowledgement: This research was supported through funding from the Precision Driven Health research partnership.

Surgical site infection (SSI) reduction through patient assisted peri-operative *S.aureus* decolonisation in elective hip and knee arthroplasties- WDHB leading the way

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Background: Surgical site infections (SSI's) involving joint implants are a significant cause of morbidity, disability and cost. Based on the National SSI surveillance data since Oct 2013, overall SSI rate at WDHB was comparable to the national rate of 1-1.2% but S.aureus contributed to 43% of SSI's (vs 30% nationally) in 5,600 knee and hip arthroplasties despite optimal compliance with standard quality and safety markers.

Aim: A 20% reduction in overall SSI rate by July 2019 through implementation of sustainable S.aureus universal decolonisation bundle in non-acute arthroplasties.

Methods: All patients undergoing hip or knee arthroplasties at NSH and ESC from Nov 2017 received both chlorhexidine (CHQ) sponges daily and mupirocin 2% intranasal ointment (Mup) for 3 days prior to surgery which was prescribed at the time of pre-operative clinic visit. Primary outcome was SSI within 90 days of primary or revision arthroplasty. SSI caused by S.aureus, compliance with intervention, intolerability to CHQ, resistance to Mup and cost effectiveness were other outcomes.

Results: During the 12-month post-implementation period, 7 SSI's occurred in 948 arthroplasties (SSI rate 0.73% vs 1% in preceding years). No SSI's caused by S.aureus have been identified to date. Compliance with S.aureus decolonisation bundle in 157 patients interviewed in 1st 5 months was 95%, and remains very high. No adverse reactions to CHQ have been reported. Mupirocin resistance has not increased 4.8% (29/601 MSSA) and 3.3% (25/751) in the 6 months pre- and post -intervention. An additional charge of 11 NZD per patient for CHQ and Mup prescriptions (approx.13,000 NZD/year) is significantly less than the average cost of treating a single deep SSI at WDHB.

Conclusion: A successful and sustainable S.aureus decolonisation programme has already contributed to a 27% relative reduction in overall SSI rate in arthroplasties with no recorded S.aureus SSI in its first year of implementation.

Pharmacist Medicine Review Services in New Zealand – is there equity for Māori older adults? Where are we at and what needs to change?

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Introduction: Pharmacist involvement in medicines review and optimisation services have been shown internationally to improve outcomes for older adults. New Zealand (NZ) policy identifies the need for pharmacist review of medicines for older adults, as part of a collaborative healthcare team. Policy is also underpinned by the right of Māori to experience equitable health outcomes. Further investigation is needed to understand whether pharmacist medicines review services are effective and responsive to the needs of older Māori.

Aims:

- Examine literature to understand the effectiveness of pharmacist medicines review services in NZ and on health equity for community dwelling Māori older adults
- Explore experiences and needs of Māori older adults in relation in medicines and medication-related services

Method: A systematic review was performed in accordance with the PRISMA-Equity statement. Narrative semi-structured interviews were conducted in Māori older adults from within Waitematā District Health Board. Thematic analysis of interview transcripts was conducted. All work was undertaken within a kaupapa Māori framework which examines power relationships, Māori right to participate in research and aims for positive, transformative change for Māori.

Results: The seven studies included in the review were limited in their ability to show effectiveness of the intervention and there was no incorporation of culturally appropriate frameworks into service design or delivery.

Major themes generated from interviews included the impact of medicines on daily life, power dynamics at play in the medication therapy process and importance of shared conversation in deciding treatment plans. Participants reported the desire to know more about their medicines and for this advice to come from someone with expert knowledge, delivered in a 'safe' place.

Conclusion: Pharmacists have a role to play in helping to achieve equity for older Māori by creating services that incorporate international learnings and are responsive to self-determined need of Māori.

Improving Clinical Pharmacology learning: Pharmacist-led teaching of first year clinical students

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Background: It is well recognised junior doctors find prescribing difficult during their formative years[1]. They report feeling unprepared and express concerns about content on prescribing in the tertiary medical curriculum[2]. They make more errors than experienced clinicians[3]. In New Zealand, the final three years of medical degrees are placement focussed providing the opportunity for clinical workplace learning. In 2018 a new pharmacist led Clinical Pharmacology module was developed as a voluntary option for fourth year students; this included tutorials and clinical attachments with pharmacists for students.

Aim: The aim was to improve clinical pharmacology knowledge, skills and confidence in medical students whilst creating inter-professional understanding. New practical collegial activities were introduced to consolidate foundation knowledge, enhance prescribing practice and create cultural change through inter-professional relationship building.

Methods: Structured seminars and pharmacist-led attachments with formal sign off were introduced for 2018. Changes include joint doctor/pharmacist-led prescribing tutorial, introduction to e-prescribing and clinical pharmacy attachment with specific learning outcomes. Informal PDSA cycles were used to improve the learning throughout the 6month introductory period. Pre and post intervention evaluation was completed.

Results: 85% students completed attachment (n=39). 100% of those students agreed / strongly agreed the tutorial and attachment were valuable. 96% reported improved confidence in skills. 100% had better knowledge of sources of help.

Discussion: This is a low cost and practical way for medical students to gain both explicit and implicit knowledge about prescribing and clinical pharmacology whilst building inter-professional understanding, providing a solid foundation for their remaining undergraduate years. Pharmacists report improved relationships with their students, facilitating improved prescribing rather than time spent on corrective actions.

Conclusion: Clinical Pharmacists are ideally placed to lead this learning as subject matter experts for medical students. Evaluation findings from 2018 will be applied to the 2019 intake, as a continuous improvement cycle.

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Mana Tū, a whānau ora approach to long term conditions

Authors: Dr Matire Harwood[1, 2], Dr Peter Carswell[2], Tereki Stewart[1], Dr Laura Broome[1], Dr Jennifer Reid[1], Dr Richard Edlin, Dr Vanessa Selak[2], Dr Rawiri Jansen[1], Jonathan Murray, Lorraine Hetaraka-Stevens, Taria Tane[1]

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Introduction: Type 2 Diabetes Mellitus (T2DM) disproportionately affects Māori, the Indigenous people of New Zealand. There is huge scope to reduce T2DM inequities in NZ but a comprehensive approach, tackling the wider determinants for causes, management and complications, is required. Mana Tū, an indigenous led programme co-designed with whānau (patients and their family), clinicians, health service planners, and whānau ora (family orientated) providers, aims to address these issues and improve T2DM outcomes.

Methods: Mana Tū, is based in primary care and has three components: a Network Hub, Kai Manaaki (skilled case managers working with whānau with poorly controlled T2DM) and a cross-sector network of services to whom whānau can be referred to address the wider determinants of health. The Network Hub supports the delivery of the intervention through operational leadership, workforce training and development, cross-sector network development and quality improvement activities. Importantly, Mana Tū is decolonising in its approach to T2DM management. It is currently being tested in a two-arm cluster randomised controlled trial with Māori, Pacific people and/or those living in areas of high socioeconomic deprivation who also have poorly controlled diabetes (HbA1c, > 65 mmol/mol). 400 participants were recruited from 10 general practices (5 practices per group, 40 participants per practice).

Results and analysis: The primary outcome is Change in HbA1c at 12 months' post intervention. Preliminary results (at 9 months) show a between groups difference of 7.17 mmol/mol. Secondary outcomes, including other clinical and social outcomes, as well as qualitative feedback on the decolonising aspects of the programme will be presented.

Conclusions: Mana Tū is an Indigenous-led innovative model of diabetes management. Early results are promising.

Funders: National Science Challenge Healthier Livers, Health Research Council, Ministry of Health

E-consultation, a first step to true partnership with Primary Care

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Objective: Accessing specialist care will continue to be a major challenge. This long-term study addresses the steps to establish a novel e-consultation service (e-consults) to improve access to Specialist expertise and advice for primary care physicians (PCP).

Methods: E-consults were introduced in 2015. Proof of concept was established after the pilot phase (June 2015 to March 2016)[1]. A second follow-up audit was done one year post-implementation (Sept 17-Jan 2018) focusing further on process and workflow, e-consultation templates, reduction in first face-to-face hospital visits, the rate of re-referrals, patient safety, PCP satisfaction and financial sustainability.

Results: 4738 referrals were made to the gynaecology service in the pilot phase (PP), and 1038 in the post-implementation phase (PIP). 1013 referrals (21.4%) were triaged for an e-consult in PP and 282 (27,1%) in PIP. The response time was less than 3 days and facilitated by the use of templates. Re-referral rate (14.5%) remained the same. The reduction in face-to-face contacts was 18.2% in the PP and 23.9% in the PIP group. No death and/or acute admission for the same reason as stated in the initial referral occurred among the patients with e-consultation and none were later diagnosed with an underlying (pre) malignancy. PCP satisfaction was high (> 90%). E-consultation was budget neutral; a decrease in revenue was compensated by an equal decrease in costs.

Conclusion: E-consultation does provide rapid access to specialist advice, is effective at reducing the number of first outpatient face-to-face contacts without notable compromise of the quality of care or patient safety and is highly appreciated by PCP's.

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No child should die for lack of oxygen: From Africa to the Pacific on the Teknon Oxygen Project

Presenter: Stephen Howie[1] on behalf of the Teknon study group

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Aim: Pneumonia is a leading cause of mortality in children, and oxygen treatment reduces mortality from severe pneumonia. However, conventional oxygen supply methods are unreliable, and oxygen is not available to many children in low and middle-income countries. This study addressed this gap by developing and field tested in The Gambia and Fiji oxygen supply solutions suitable for the realities of LMIC health facilities.

Methods: A Health Needs Assessment identified a technology gap preventing reliable oxygen supplies in Gambian hospitals. We used simultaneous engineering to develop two solutions: a Power Storage (PS) system consisting of an oxygen concentrator and batteries connected to mains power, and a Solar-Power Storage (Solar-PS) system (with batteries charged by photovoltaic panels) and evaluated them in facilities in The Gambia and Fiji to assess reliability, usability and costs.

Results: The PS system delivered the specified 82%+ oxygen concentration in 100% of 1-2 weekly checks over 12 months, which was available to 100% of hypoxaemic patients, and 100% of users rated ease-of-use as at least 'good' (90% very good or excellent). The Solar-PS system delivered 82%+ oxygen concentration on 100% of 1-2 weekly checks, was available to 100% of patients needing oxygen, and 100% of users rated ease-of-use at least very good. Costs for oxygen delivered from these systems were substantially less than the costs of oxygen from conventional cylinder supplies.

Discussion: Although the life-saving role of oxygen in severe childhood pneumonia is clear the technological and economic barriers to ensuring that it is available in LMICs has put oxygen into the 'too hard' basket. This need no longer be the case.

Conclusion: The Teknon oxygen systems delivered high-quality, reliable, cost-efficient oxygen in real LMIC contexts, and were easy to operate. Reliable oxygen supplies are realistically achievable in LMIC health facilities like those in The Gambia and Fiji.

Funders: UK Medical Research Council, Cure Kids NZ

Comparison of Different Approaches to Neonatal Follow-up

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Background: The post-discharge follow-up approach at the Special Care Baby Unit (SCBU) at New Zealand's largest district health board was changed in May 2016. Follow-up care was changed from being led by paediatrician assigned on admission to SCBU, to being led by a paediatrician as a member of a geographically-assigned multidisciplinary team.

Aim: Determine the relative risk of adverse outcomes in patients under the new follow-up approach.

Methods: A retrospective cohort study including all cases 9 months prior and 12 months following the change of approach. Outcomes assessed were those suggestive of serious sequelae: a) at least one visit to the emergency department (ED), or b) at least one paediatric ward readmission. Exposure and outcome data was objectively collected using anonymised hospital data system event logs.

Results: In 1048 cases, the relative risk (RR) of needing an ED visit, and needing a paediatric ward readmission was 1.24 (95% CI 1.03-1.50; p=0.030) and 1.21 (95% CI 1.17-1.26; p<0.001), respectively. RR of either adverse outcome was 1.19 (95% CI 1.15-1.23; p<0.001). Stratified analysis was performed for ethnicity, deprivation (NZDep2006), birth weight, gestational age, and length of stay in SCBU. Paediatric readmissions were found to be confounded by gestational age, with a Mantel-Haenszel adjusted RR of 1.16 (95% CI 1.13-1.19; p<0.001).

Conclusions: The new follow-up approach is associated with a statistically significant risk, however, it is not clear if this represents harm.

Discussion: Potential explanations for the results are: a) health issues are better detected under the new approach leading to greater odds of seeking care; b) results may be skewed due to missing ED visit data from other Auckland-region hospitals; c) the outcome measured might not reflect the overall health status of the child; and d) the new follow-up approach may have benefits better measured through qualitative analysis.

iTui- a novel App improving paediatric assessments

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Background: Child assessments following child abuse are difficult. Verbal interviews are problematic for several reasons (child distress, confusion, cognitive issues).The drawing- based iTui App has been designed to aid Paediatric assessments following child abuse. The App allows for shared attention, cooperative play and exploration of ideas by the child and clinician.

Aim: To evaluate the usefulness and acceptance of the iTui App in Paediatric Gateway assessments in Waitematā DHB.

Methods: 36 participants were sequentially recruited from Waitematā DHB Paediatric Gateway assessments from July 2017- April 2018. The App was used if the clinician deemed this suitable for family (appropriate age, enough iPad devices).

A single sheet feedback form was completed by child and clinician. The child was asked their rating of the App using a number and smiley face scale. Clinicians were asked if they agreed/ disagreed with 5 part statements regarding the usefulness and acceptability of the App in their assessment (strongly agree/agree/neither/disagree/ strongly disagree).

Clinicians, children and caregivers were able to make additional comments on the form.

Results: Children found the App enjoyable with an average rating score of 9/10. This was consistent with the positive free text comments.

Clinicians found the App useful with 94% (34/36) agreeing or strongly aggressing with the statement “I found the App useful in my assessment”. This was also consistent with the free text feedback. There was a variety of useful aspects clinicians mentioned. Furthermore, most clinicians felt the children enjoyed using the App (35/36).

Conclusion: The iTui App has been well accepted by children and useful for clinicians in Paediatric Gateway assessments in Waitematā DHB.

Child feedback in healthcare services: survey of expert opinion in New Zealand

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Background: The United Nations Convention on the Rights Of the Child (UNCROC) assures the "the right [of the child] to express … views freely in all matters affecting the child, the views of the child being given due weight in accordance with the age and maturity of the child." This implies the need for meaningful, age appropriate and effective approaches to hearing from children on how to improve their healthcare experience. Our aim was to investigate effective ways to obtain feedback from children about their healthcare experience.

Methods: Experts and practitioners involved in obtaining feedback from children were identified across child health, education, government and non-governmental sectors throughout New Zealand. Experts were identified through professional networks using a snowball methodology. Stratified purposeful sampling was applied to provide a spectrum of critiques on the inquiry, how best to seek feedback directly from children. The identified experts were surveyed using semi-structured interview tool, by face-to-face, video- or phone-conference. Interviews were recorded and free text notes compiled for thematic analysis.

Results: Fifteen interviews were completed and analysed, including a mix of clinicians, non-clinical practitioners, and content experts. Detailed reading of the interview text identified a set of key themes; high-level and strongly consistent categories included the value of trust and rapport, importance of tailoring approach to the child and identified principles for ethical practice with children.

Conclusion: Seeking feedback directly from children responds to their right to be heard and also to experience quality healthcare. This survey of expert opinion in New Zealand confirmed particular considerations when working with children. The study collates national expertise that further supports the development of meaningful approaches to listen actively to the 'child voice' in healthcare.

Patients ≥ 80 years of age admitted to Intensive Care and High Dependency Unit at WDHB: A retrospective analysis of outcomes

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Background: The 80-plus year population admission rates to intensive care are increasing annually by 5.6% across Australia-New Zealand. Current epidemiological data is insufficient, with a call for NZ specific studies in this area.

Aims: to study ≥80 year olds admitted to intensive care or high dependency unit (ICU/ HDU) in Waitematā District Health Board in terms of admission characteristics, discharge and 6-month post-discharge outcomes including place of residence, community supports, and mortality.

Methods: Patient demographics and admission data were sourced from the North Shore Hospital ICU/ HDU database (gender, ethnicity, admission type (elective vs. emergency), length of stay, mortality, and illness severity using the Acute Physiology and Chronic Evaluation (APACHE) system. Electronic hospital records were also reviewed (comorbidities, medications, residence on admission/discharge, mortality, readmissions and community support services prior to admission, upon discharge, and 6 months post-discharge).

Results: 117 patients 80 years and over were admitted between August 2015-June 2017, representing 10% of all admissions to ICU/HDU over this period. Age range 80-95 years, 48 (41%) female, 7 (6%) Maori, 92 (79%) were emergency admissions, median APACHE III score 69.0, mean Charlson Comborbidity Score 6.29. Survival to HDU/ICU discharge was 101 (86%), to hospital discharge 92 (79%) and to 6 months was 84 (72%).One hundred and sixteen (99%) were residing at home at index admission, 84 at discharge (91% of survivors), and 79 at 6 months (94% of survivors). Community supports were utilised in 33 (28%) at admission, 36 (39%) at discharge and 34 (40.5%) at 6 months. While overall those requiring community supports increased, in 9 (11%) support needs decreased at 6 months.

Conclusion: This single centre study shows those still alive at discharge and 6 months are likely to be living at home independently. Systematic comparisons between different ICUs, and analysis of patient centred long-term outcomes are needed.

Investigating everyday sexism in healthcare: are patient call bells sexist?

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Aim: Everyday sexism is receiving renewed attention. Call bells allow patients to summon assistance. Local bells depict a stereotypical female nurse figure. Nursing is historically a female role. Female doctors are mistaken for nurses. This study investigates the imagery on call bells, as a potential example of reinforcing stereotypes and contributing to a misogynistic culture.

Method: A descriptive study of hospital equipment using snowball methodology. Data collection via professional contacts on social media. Contacts were requested to provide call bells photo plus location without patient or staff information. Eight week data collection without geographical restriction. Data collected included symbol type, manufacturer, ongoing availability, location

Results: 56 responses from 43 hospitals in 8 different countries (Table 1). None excluded.

Table 1:

Image	Number (%)
Gender neutral e.g. red cross	9 (16)
Female figure e.g. figure in dress	16 (29)
Nursing cap/ head	21 (38)
Other inc. button only device	10 (18)
Total	56

It was not consistently possible to identify manufacturers. Where possible, checks were made to ensure the same device is still available to purchase.

Discussion: The majority of call bells (67%) used either female images or nursing cap images which are strongly associated with female nurses. This is a significant finding:
• Nurses are not all female • Nurses do not usually wear dresses and caps • Reinforcing this stereotype is commonplace • Call bell symbols are not a clinical priority but their symbols reflect ingrained cultural misogyny • Changing this stereotype will require designers, manufacturers, suppliers, buyers and users to challenge the existing model.

Conclusion: Call bell symbols are an example of everyday sexism in healthcare. They reveal bias in design, manufacture and supply of equipment. Whilst call bells may be a very small part of healthcare, they are indicative of a much wider problem.