National Screening Advisory Committee (NSAC) National Screening Unit (NSU)		
Minutes Wednesday 28 November 2018		
Venue	Ministry of Health, 133 Molesworth St, Wellington	
Start time	1000hrs	
NSAC members present	Professor John McMillan (Acting Chair) Dr Jane O'Hallahan (Deputy Chair) Dr Karen Bartholomew Professor Jackie Cumming Professor Mark Elwood John Forman Astrid Koornneef Dr Deborah Rowe Dr Pat Tuohy	
Other attendees	**NSU** Anne McNicholas Principal Advisor Dr Bronwyn Rendle Public Health Physician Dr Emma Church Public Health Physician Registrar	**Item 5: Pulse Oximetry Screening (POS)** Dr Elza Cloete, Liggins Institute, University of Auckland Prof Frank Bloomfield, Director, Liggins Institute Dr Richard Edlin, University of Auckland **Item 6: B4 School Check** Dr Alison Leversha, Auckland District Health Board (ADHB) Dr Pip Anderson, Counties Manukau DHB **Item 8: BreastScreen Aotearoa (BSA)** Chrystal O'Connor, Manager Jennifer Cox, Senior Services Development Analyst
Apologies	Dr Carol Atmore Dr Joanne Dixon Dr Caroline McElnay Professor John Potter Dr Caroline Shaw	

Item	Subject and summary
1.	**Welcome, apologies and introductions**
2.	**Declaration of conflicts of interest** Conflict of interest register tabled.
3.	**Minutes of 25 July 2018** Amended and confirmed as a true and accurate record.
4.	**Correspondence tabled** **Between NSAC Chair and the Ministry of Health Chief Medical Officer (CMO)** • Re-emergence of congenital syphilis: o Karen Bartholomew to report back at next meeting on review of recent congenital syphilis cases in relation to performance of the antenatal screening system o NSU to also raise issues related to re-emergence of congenital syphilis with the acting DDG of Population Health and Prevention o noted importance of screening in pregnancy for other infectious diseases such as hepatitis B, and the risks to babies with an increase in young women not immune to rubella due to historical lower MMR vaccination uptake o noted upcoming review of the Well Child Tamariki Ora (WCTO) programme and opportunity for NSAC to express views regarding the importance of a comprehensive antenatal / well child monitoring framework including infectious disease surveillance. • Prostate cancer screening in asymptomatic men and the decision tool Kupe's messaging: o NSAC advise there are more harms than benefits in screening asymptomatic men, with concerns unbalanced information is given to men and GPs through the Kupe decision tool o NSAC will consider prostate screening in more detail at its April 2019 meeting. **New Zealand College of Midwives** • Regarding the CMO's recent letter to DHB Chief Operating Officers encouraging DHBs to adopt pulse oximetry screening (POS) for critical congenital heart disease (CCHD) as a quality improvement initiative as part of routine care: o the College is supportive of POS. However there are concerns about the requirement for a consistent approach and appropriate resourcing to ensure equitable access to POS regardless of where the baby is born. These included the need for screening and referral guidelines, education, sufficient resources including the number of midwives and pulse oximeters, and ongoing monitoring and audit o the College requested a managed approach with establishment of a formal screening programme and implementation of POS as a national screen. The College's views align with those expressed by a senior paediatrician who contacted the NSU in response to the CMO letter. NSAC generally agreed with the points made, noting the advantages a nationally led programme brings to the equitable provision of screening.

5.	**Feasibility study for POS for critical congenital heart disease (CCHD)**
	Dr Elza Cloete and Prof Frank Bloomfield presented the POS study findings and Dr Richard Edlin presented preliminary cost effectiveness analyses.
	
	The study investigators conclude that POS is feasible in the New Zealand settings
	• The study was undertaken between April 2016 to April 2018 at the following locations:
	  ○ Auckland District Health Board (ADHB): Auckland City Hospital and Birthcare
	  ○ Lakes DHB: Rotorua and Taupo hospitals
	  ○ Counties Manukau DHB: Papakura, Pukekohe and Botany maternity units.
	• A total of 16,644 babies were screened:
	  ○ 2.3% required a second test (n=387)
	  ○ 0.5% required a 3rd test (n=83).
	• 48 babies screened positive:
	  ○ 3 (6%) were diagnosed with CCHD
	  ○ 37 (77%) had other significant pathology, most commonly respiratory related
	  ○ 11 (23%) had no pathology identified
	  ○ test specificity as 99.7% with a false positive rate of 0.27%.
	• Lower saturation readings in absence of pathology can be reduced if screening is conducted at age > 4 hours; and if baby is tested when settled or breastfeeding.
	• Coverage varied by DHB:
	  ○ at ADHB where the highest coverage (80%) was achieved, there was no significant difference in coverage between ethnic groups
	  ○ where coverage was lower there was less equitable provision of screening.
	• Missed cases of CCHD were from the unscreened higher deprivation population group.
	• Survey of patients and staff focus groups indicated:
	  ○ high levels of acceptability by consumers
	  ○ midwifery support for POS
	  ○ significant concerns about resource implications and that workforce pressures and under-resourcing will hinder POS.
	
	Feasibility study conclusions
	• POS detects conditions beyond CCHD that result in hypoxia.
	• Test accuracy is acceptable.
	• Would likely result in greater gains for most deprived populations who are less likely to have had antenatal screening eg ultrasound for foetal anomaly.
	• Potential to create greater inequalities if not provided universally.
	• Antenatal detection remains the best time to diagnose congenital anomaly.
	
	Preliminary cost effectiveness analysis indicates POS is cost-effective
	• Used the model from the Ewer et al UK Health Technology Assessment to assess cost-effectiveness as the approach most aligned to New Zealand's pilot and context eg, timing of test.
	• The New Zealand cost effectiveness analysis:
	  ○ uses pilot data and ADHB derived data (congenital heart disease database) for POS consequences and mortality
	  ○ uses QALYs as these are more useful for decision making than cost per case detected
	  ○ does not include setup costs for a centrally managed programme.
	• Model requires further refinement to better match NZ context eg, revision of New Zealand prevalence for those cases categorised as "critical" versus "significant" and also sensitivity analyses eg, time it takes to perform POS although impact likely to be marginal as time to perform a POS is generally between 5 and 10 minutes.

Discussion included

2nd trimester screening

- Importance of antenatal detection of CCHD through 2nd trimester ultrasound screening as this can detect ~50% of cases.
- Universal provision of POS would help address current inequities in 2nd trimester screening ie it would act as a safety net.
    - There is a difference in 2nd trimester screening coverage between DHBs with only a few centres having excellent service provision.
    - Uptake is influenced by socioeconomic status, including education levels, variation in public versus private provision, timing of registration with lead maternity caregivers.
    - Ultrasound performance is also affected by a larger body mass index (BMI), with a higher prevalence in more deprived communities.
- Require a better understanding of improvements possible in the antenatal 2nd trimester screening for improved understanding of marginal gains and costs of POS.

Timing of POS

- Timing of POS in the pilot varied between DHBs because of different ways the birthing units operate, eg variation in the speed of transfers between hospitals and birthing units.
- Need to balance timing of POS and risk of delay in diagnosis against false positives eg, need to ensure sufficient elapsed time when a second POS is indicated as it will reduce false positives and limit harms of unnecessary clinician assessment and invasive testing.

Monitoring requirements

- Whether there was potential for the maternity information databases to include a module to record POS.
- Retrospective monitoring of POS through identification/audit of missed cases is a possibility through the ADHB congenital heart disease register, although real time monitoring is preferable as it has potential to provide a fail-safe mechanism to identify babies not screened within their first 24 hours.

Implementation options

- High risk that leaving the introduction of POS as a DHB led quality improvement will do harm eg variable screening algorithms, referral pathways, guidelines and training; and its provision will be inequitable.
- Given pressure on midwifery services, introducing POS could risk replacing other important interventions if it is not resourced adequately.
- NSAC agreed that development of a national guideline / protocol is encouraged in the first instance, which could then be adapted to meet the needs of a national system.
- Clarity is required as to what a quality improvement programme would provide compared with a national screening programme and a sense of set up costs needed to introduce either.
- The application of screening criteria to rare conditions can be difficult eg, assessment of cost benefit, noting in particular that programme set up costs are likely to be relatively high.
- Have to take into account economic reality of likely high set up costs for a full national screening programme, which might suggest a nationally led quality improvement programme is the better option.
- POS for CCHD does not meet the criteria for a stand-alone national screening programme in the absence of a rigorous assessment of the set up costs and the resources needed to sustain a programme of acceptable standard eg, with audit and fail-safe functionality
- Consideration should also be given to integration of POS within a broader antenatal and newborn screening programme, including the 18-20 week foetal anomaly scan.

	Next steps
	• Fuller documentation is required from the pilot itself (a report or manuscript) and also the cost effectiveness modelling when completed.
	  o This outstanding documentation is required to assist clarify and develop implementation options, including budgetary considerations.
	• Maintain a watching brief of the UK National Screening Committee recommendations.
	  o The UK committee considered findings from their pilot in 2016. A decision regarding a national screening programme awaits the completion of further analyses and modelling to address concerns related to the resource implications of investigating false positives.
	
	NSAC conclusions
	• There is sufficient evidence to support POS.
	• There is sufficient evidence that introducing POS as a sector led quality improvement initiative alone will not result in equitable provision of screening or equitable improvement in outcomes.
	• There is sufficient evidence that in the interim the NSU should encourage and support the development of a national POS guideline.
	• While noting the NSU needs a sense of budgetary requirements (in addition to cost effectiveness) to further consider implementation options:
	  o there is likely sufficient evidence for the introduction of POS through a nationally led quality improvement programme
	  ▪ comprehensive adoption requires adequate resourcing, standard guidelines and protocols, and national monitoring
	  ▪ this approach would better support equitable provision of POS.
	• Future consideration should be given to integration of POS within a broader antenatal and newborn screening programme, including the 18-20 week foetal anomaly screen.

6.	**B4 School Check** Dr Alison Leversha and Dr Pip Anderson presented findings from the 2014 audit of the B4 School Check Programme in Counties Manukau DHB. The B4 School Check aims to identify and address heath, behavioural, social or developmental concerns that could hinder a child's ability to learn at school. The 12th and final check is offered to all 4 years olds. The programme was implemented nationwide in 2008. A number of issues were raised including: • the validity of the screening tools, both the parental evaluation of development states (PED) and the strengths and difficulties questionnaire (SDQ). Compared to other countries these tools are identifying a lower percentage of children as having an issue and needing a referral to service • the B4 School Check may be increasing inequities with children at highest risk of poor health less likely to be identified and less likely to be transferred to services. • substantial issues related to the process for proving eligibility for health services • the upcoming WCTO programme review provides the opportunity to identify what can be improved and what needs to change. It will identify resource gaps and potentially increase equity within the current Well Child programme. *Discussion included* • All components of the B4 School Check require review as the purpose of the current programme is not being achieved. • Concern there is a large gap in identifying the children who need help and who should be referred to services. There is a massive loss of opportunity to intervene early, and to do the right thing when children needing help are identified. • Language and cognitive development are not well screened for and need clearer and more rigorous referral pathways.

	• Lack of systematic analysis of data compared with other national screening programmes under the auspices of the NSU eg, outcomes data are required as well as more specific indicators and targets by ethnicity and level of deprivation. • Consideration of where the NSU or NSAC might sit with the WCTO review, given the B4 School Check use of screening tools. Suggested there is a potential for a small oversight or advice role around the universal screening components, with a connection in particular around vision and hearing checks. • Concerns about increasing inequity with a universalist approach, as the more disadvantaged children need more intensive screening and interventions. • Substantial negative impact on families who face barriers to accessing health services because they are required to prove eligibility multiple times ie each time they "touch" a different service, rather than just at their first contact with the health system. • The extent of NSAC's or the NSU's oversight role of screening activities that fall outside of NSU led national screening programmes. Action Consider adding WCTO review to next NSAC meeting agenda so as to maintain oversight and consider recommendations related to screening components.
7.	**National Bowel Screening Programme (NBSP) - equity strategy** Dr Bronwyn Rendle presented on progress with development of an equity approach for the NBSP. It includes: • establishment of an expert review group to examine the most recent data • close monitoring of programme data and programme parameters including age range once fully implemented in 2021 • development of key messages for DHBs • a strong focus on equitable (at least) access to and through the screening pathway • exploring ways to add value to the screening pathway, locally and nationally. *Discussion included* • Noted Māori present with later stage cancer so there is potentially a greater gain from screening even though they otherwise have lower incidence. • Colonoscopy capacity is the primary limiting factor for NBSP screening of the 50-59 year age group. • Opportunities to increase coverage through providing information on the NBSP through the proposed 65 year old free health check, with policy development underway; and also through WINZ communications/promotions to superannuation recipients. Action NBSP to bring recommendations to NSAC from proposed expert working group meeting planned for early 2019.

8.	**BSA – extending screening to women aged 70 to 74 years**
	
	NSAC has previously endorsed the BSA examining the impact of extending the eligible age range, but expressed a strong caveat that the NSU prioritise addressing current equity issues alongside any future programme extension.
	
	The BSA programme updated NSAC on progress to date including:
	• publication of the impact analysis with final editing currently underway and release planned for year-end or early in the New Year
	• preparation of a business case, with the objectives including
	  ○ further reducing mortality from breast cancer for women aged 45-74 years
	  ○ improved equity of access to breast screening for priority women
	  ○ no deterioration in equity of access to breast screening for priority women

	• investigating invitation implementation options, which include potential strategies which focus on improving equity of access, as well as consideration of requirements for investment in IT infrastructure and increasing programme capacity. NSAC reiterated importance of ensuring age extension does not negatively impact on equity of access to screening. Action BSA to bring back future developments for NSAC's consideration.
9.	**Other business** 2019 meetings dates: Wed 10 April, Thurs 25 July, Thurs 28 Nov Meeting closed at 1530hrs.