UK National Screening Committee (UK NSC)

Note of the meeting held on the 31 October 2018

in

etc Venue, London

This meeting provided recommendation on the following conditions;

- Hypertension in Children and Young People
- Spinal Muscular Atrophy (SMA)
- Antenatal screening for Hepatitis C virus
- Screening for Obesity in Children under the age of 5
- Screening for Obesity in Children aged 7-11 year olds
- Antenatal screening for HSV-1 & HSV-2 infection to prevent neonatal herpes

Members

Professor Bob Steele	Chair
Claire Bailey	Lead Clinical Nurse Specialist in breast screening, SW London

Dr Paul Cross	Consultant Cellular Pathologist, Queen Elizabeth Hospital Gateshead Health NHS Foundation Trust
Professor Gareth Evans	Consultant in Genetics Medicine, St Mary's Hospital, Manchester
Professor Alastair Gray	Director at the Health Economics Research Centre, Nuffield Department of Population Health and Professor of Health Economics at the University of Oxford
Hilary Goodman	Operational Manager of Antenatal Services/Screening at Hampshire Hospitals Foundation Trust
Dr John Holden	Joint Head of Medical Division, Medical and Dental Defence Union of Scotland
Margaret Ann Powell	Patient and Public Voice
Dr Graham Shortland	Consultant Paediatrician, Cardiff and Vale University Health Board, Noah's Ark Children's Hospital for Wales and Executive Medical Director, Cardiff and Vale University Health Board, University Hospital for Wales
Dr Anne- Marie Slowther	Reader in Ethics, University of Warwick

Observers;

Jean Nicol	Department of Health and Social Science Screening Team, Emergency Preparedness and Health Protection Policy Global and Public Health Group

Dr Heather Payne	Senior Medical Officer for Maternal and Child Health, Welsh Government
Sarah Manson	Scottish Government
Dr Sue Payne	Scottish Government
Dr Carol Beattie	Northern Ireland
Celia Ingham-Clark	NHS England
Dr Ros Given – Wilson	Chair of the Adult Reference Group (ARG)
Dr Sharon Hillier	Director of Screening Division, Public Health Wales
Mrs Jo Harcombe	National Lead for Stakeholder Information and Profession Education and Training
Caroline Vass	Public Health Registrar
Dr Hilary Angwin	PHE Screening Quality Assurance lead

Secretariat

Professor Anne Mackie	Director of Programmes - UK National Screening Committee
Mr John Marshall	UK NSC Evidence Lead
Dr Cristina Visintin	UK NSC Evidence Review Manager
Dr Farah Seedat	UK NSC Evidence Review Manager
Zeenat Mauthoor	Secretariat
Hina Haider	Secretariat Support Officer

Mrs Jo Harcombe	National Lead for Stakeholder Information and Profession Education and Training

Apologies

Members:

Professor Roger Brownsword	School of Law, Kings College London
Professor Alan Cameron	Consultant Obstetrician at Southern General Hospital, Glasgow
Eleanor Cozens	Patient and Public Voice (PPV)
Dr Hilary Dobson	Consultant Radiologist and Deputy Director of the Innovative Healthcare Delivery Programme, University of Edinburgh
Professor Stephen Duffy	Director of the Policy Research Unit in Cancer Awareness, Screening and Early diagnosis and Professor of Cancer Screening, Centre for Cancer Prevention, Wolfson Institute of Preventive Medicine
Jane Fisher	Patient and Public Voice (PPV)
Professor Chris Hyde	Public Health Specialist, University of Exeter

Observer's apologies:

Dr David Elliman	Clinical lead for Newborn Infant Physical Examination and Newborn Blood Spot, PHE
Dr Nick Hicks	National Co-ordinating Centre for HTA

Four Country Rep apologies:

Dr Ailsa Wight	Deputy Director Emergency Preparedness and Health Protection, Department of Health

Welcome and Introductions

- Professor Steele welcomed all to the meeting. A round of introductions was initiated for the benefit of the observers as well as for newly appointed FMCH Chair, Dr Sharon Hillier. The Chair asked members to provide an update on any new declarations of interest which may be relevant to this meeting. No conflicts were raised.

  Apologies were noted and the Chair confirmed that the meeting was quorate.

Minutes and Matters arising

- Minor amendments were requested to be made to the minutes of the June 2018 meeting as follows;
  - *Page 5; three actions are noted from the February 2018 meeting (not four)*
  - *Page 11; in cervical screening women are screened between the ages of 24-49 every three years*
  - *Page 12; number is out of sequence*

2.1 Dr Cross clarified that the public consultation on cervical cancer looks at three modifications which includes; changes to screening and surveillance intervals, women aged 64 and over who are exiting the programme and the use of self-sampling as a strategy to address non-attendance in screening. It had been agreed that genotyping should not be consulted on

2.2 With the caveat that these changes are addressed the UK NSC confirmed the June 2018 minutes as a true and accurate record and agreed that the revised version should be uploaded as final on the webpage.

Seven action points were identified from the June meeting;

1a. Welcome and Introductions

Secretariat to issue letter of service to Dr Greg Irving thanking him for his time on the UK NSC– *Completed*

1b. Welcome and Introductions

Secretariat to arrange for a recruitment campaign to be opened seeking appointments on to the Committee – *The recruitment campaign to appoint a GP and Social Scientist had since closed with a total of 8 applicants. Shortlisting had taken place and interviews are now scheduled for the coming month. It is hoped that successful applicants will be in post by the end of the year*

3a. Ethics Update

A report on the ETG to be presented at the UK NSC October meeting –*Due to the fact that ETG's Chair (Prof Roger Brownsword) is not in attendance this item has been deferred till February. However, the Chair informed the Committee that as the ETG meeting predominantly discussed the issue of reflex testing for T21, 18 &13 discussion on this would replace the ETG item on today's agenda.*

3b. Ethics Update

A flowchart to be included in the checklist document to outline when an ethical evaluation would be considered – *Completed*

3c. Ethics Update

ETG to discuss whether a permanent ethics group should be established assist the UK NSC – *In hand*

3d. Reflex testing for T21, 18 &13

ETG to consider what research questions need to be looked at to address concerns raised – *This item is on the agenda*

5a. AOB

Pulse Ox to be added to the UK NSC October 2018 agenda- *Is on the agenda*

- *Matters arising*

***Director's* Update**

Prof Mackie gave an update on the following

Update on Breast Screening Incident

3.1 Following the ex-Secretary of State (SoS) Jeremy Hunt's announcement about the NHS Breast Screening Programme failing to invite women aged 68-71 for their final routine mammogram, the programme has been working to rectify, contact and offer screening to these affected women. By the end of May around 190,000 women were contacted and offered an invitation to be screened or reminded about self-referral.

3.2 Prof Mackie confirmed that whilst PHE, DHSC and NHSE await the Independent Review, expected to report late November 2018, two major tasks were being carried out. Firstly, ensuring that the English IT system is updated to make sure all women up to their 71st birthday are identified, and second for the UK NSC to explore the options for reviewing the evidence relating to the upper age limit for the routine breast screening programme. Prof Mackie said work to look at the evidence relating to screening in the older age groups is being undertaken, and will follow the usual UK NSC major modification process.'

Update on Screening for Severe Combined Immunodeficiency (SCID)

3.3 At the October 2017 meeting, the UK NSC recommended that screening for SCID should be tried for a period of time in the NHS. DHSC colleagues confirmed that discussion about funding was ongoing with Ministers about this evaluation and will be considered as part of the 2019/20 funding decisions.

3.4 Recent discussions however with the Joint Committee on Vaccinations and Immunisation (JCVI) had flagged a possible issue with the newborn BCG programme. Prof Mackie informed the Committee that, in light of recent discussions, it had been agreed that the SCID model would be re-examined to consider the implications of delivering the vaccination at a later point and in a community setting.

Action 3a: UK NSC to be kept up to date with the outcome of the revised SCID modelling work which would now include neonatal TB

Bowel Scope

3.5 The UK NSC received an update from Prof Mackie in relation to Bowelscope (BS) where it has been rolled out. PHE asked the Committee to assure themselves that the approach for England [the only UK country offering BS] is within the recommendations made in June 2018 being;

a. Downward extension of the age range for and reduction of the threshold for FIT with a view to a future age range of 50-74 and a threshold of 20μg haemoglobin / g faeces.
b. With respect to Bowelscope
    i. Halt further roll out of Bowelscope
    ii. The development of a research programme to understand whether the combination of bowel scope and FIT brings a cost-effective addition to a 'FIT-only' programme. This research would comprise using some existing bowel scope capacity to make an offer of bowel scope to those aged 58-60

who have received FIT at a threshold of 20ug/g before and after bowel scope

iii. Maintain remaining Bowelscope service (i.e. that not required for the research outlined in ii. above) until FIT is offered to people of the same age (i.e. 55)

The UK NSC was content with the approach.

Update on Pulse Oximetry

3.6 Work on Pulse Oximetry (PO) is still ongoing. There has been a huge amount of PHE driven work to fill in the gaps left by research. In essence to attempt to understand what the effect of finding and treating the babies screen positive babies that do not have heart disease. The work is being gathered together and analysed. The bundle will be brought to FMCH and the UK NSC to determine the next steps.

Action 3b: A report on Pulse Oximetry should be brought to a future UK NSC meeting for further discussion

Programme Modification proposal on Reflex testing for T21, 18 &13

3.7 This item had been discussed at the previous Committee meeting where it was agreed that reflex testing for T21, 18 & 13 should be discussed at the Ethics Task Group and then returned to the UK NSC.

3.8 The Committee was reminded that this item has been in discussion since 2017 when the FMCH reference group received a proposal for “reflex testing” to be considered as an alternative to the “recall’ approach to deliver Non Invasive Prenatal Testing (NIPT) following the combined test. An evaluation of the recall approach was currently in preparation following the UK NSC recommendation in 2016.

3.9 It was noted that the two approaches share a contingent approach to the offer of NIPT. However there were two key differences. Reflex testing aimed to eliminate the need to recall women for counselling following completion of the combined test and also proposed expanding the population which was eligible for NIPT by reducing the combined test threshold for eligibility to ≥1 in 800. This compares to the threshold of ≥1 in 150 in the recall approach.

3.10 The Ethics Task Group considered that reflex testing raised a number of issues which, when compared to the recall strategy, could be grouped as follows:

- test or strategy performance
- resource use / logistics
- qualitative issues relating to the experience of women, and their partners, as they encounter NIPT in the screening pathway
- acceptability issues relating to the offer of NIPT in a larger group of pregnant women as a consequence of a lower combined test threshold being used in the reflex strategy.

3.11 It was noted that the qualitative and acceptability issues are closely connected in the proposed reflex strategy. However these could also be considered separately, for example, if the reflex strategy was used with a combined test threshold ≥ 1 in 150. The discussion on reflex testing had drawn attention to an absence of evidence relating to the experience of women and their partners in both the reflex and recall strategies. The Ethics Task Group had identified a number of questions which could be used as the basis for research in the context of both approaches and these were being discussed within the National Institute for Health Research (NIHR). The discussion had also drawn attention to the need for further consideration of the acceptability of expanding the population which would be eligible for NIPT. This had been raised by the Nuffield Council on Bioethics which had endorsed the recall

strategy and the threshold of ≥ 1 in 150. More recently the British Medical Association had passed a motion calling for public consultation before expansion of the use of the test was recommended. Finally little was known about whether reflex testing reduced resources compared to the recall approach.

3.12 The Committee acknowledged that the proposed reflex testing strategy could have advantages in terms of the accuracy of the testing strategy by reducing the false negative rate and that this was likely to be achieved without increasing the false positive rate. It was also noted that the emphasis on efficiency in reflex testing made it attractive to many in the antenatal screening community. However, the broader concerns raised by reflex testing meant that the UK NSC was not in a position to recommend its use.

3.13 The Committee accepted the Ethics Task Group's recommendation that reflex testing should not be recommended because:

- there is insufficient information on the qualitative outcomes of the strategy, for example whether it reduces anxiety or can provide an environment which adequately supports reproductive autonomy,
- there is uncertainty on whether expansion of the use of NIPT which would be a consequence of the strategy as currently proposed is ethically acceptable,
- the advantages in terms of reduction of resources used, relative to the recall strategy, have not been quantified or confirmed

3.14 The Committee also agreed that further work should be undertaken including:

- development of a discussion document summarising the ethical issues raised by reflex testing
- qualitative research to explore the experience of women and their partners in screening pathways using NIPT

- the identification of a process through which a public discussion could take place on the acceptability of expanding the application of NIPT

Adult Screening

ARG Report

4. Dr Ros Given Wilson provided the UK NSC with a summary of developments following the September meeting.

The following conditions have been reviewed by ARG and are now out for public consultation;

- Breast Cancer (additional screening with ultrasound after a negative mammography in women with dense breasts)
- Cervical cancer- modification of the programme to extend screening intervals
- Dementia

Fetal Maternal and Child Health screening

FMCH Report

5. The new Chair of the FMCH group, Dr Sharon Hillier provided the UK NSC with an update of developments from the September meeting. The group had reviewed the evidence on the following conditions;

    - Fragile X syndrome in pregnancy
    - Screening for permanent hearing loss in children at school entry
    - LCHADD

and public consultations were now open

Screening for Hypertension in Children and Young People

5.1 The UK NSC last looked at the evidence to screen for Hypertension in 2010 and recommended that screening should not be offered. This was because:

a. the prevalence of childhood hypertension in the UK was unknown and it was not clear what the significance of this condition was in terms of childhood morbidity and mortality;

b. there was not a simple, agreed validated test for identifying childhood hypertension;

c. there was a paucity of evidence about the long term consequences of not treating childhood hypertension or the long term effects of pharmacological interventions on growth and development; and

d. there were no UK or international clinical trials or cost-effectiveness studies of the full screening programme that showed a reduction in morbidity or mortality or that screening was value for money

5.2 Blood pressure is the pressure of the blood in the circulatory system. There is no universal cut off for what a "normal" reading should be and so hypertension in children is currently defined by comparing the reading of blood pressure to peers of the same age and sex. If a child has a higher reading when compared to his/ her peers, then this child would be considered as having hypertension.

5.3 The Committee were informed that the current evidence summary looked to address the key areas of uncertainty from the 2010 review. The UK NSC discussed the evidence summary which reported that there is reasonable evidence to suggest a likely increase in prevalence of elevated blood pressure in children and adolescents in the UK.

However, the evidence indicates that prevalence estimates of essential hypertension in children aged 3 to 18 in the UK remain uncertain

5.4 There was some good quality evidence from Europe, the US and Australia that high blood pressure is an independent factor associated with target organ damage in children and adolescents.

5.5 In relation to the screening test, there remains no standard definition of hypertension but European and US guidelines describe the same methodology to determine hypertension in children and young people. The review identified six studies which reported that the ability of the test to correctly identify those with the condition would not meet adequate test values for use in a population screening programme. .

5.6 Another concern noted by the Committee, was in relation to the effectiveness of interventions to prevent adverse outcomes (short and long term). Non pharmacological interventions such as life style changes and increased physical activity showed some reduction in blood pressure but it was not clear if this would result in any clinically meaningful change and could be maintained over the long term. Evidence for effectiveness of use of pharmacological interventions alone for children with primary hypertension was limited. The evidence for effectiveness of combined pharmacological and non-pharmacological interventions in lowering blood pressure was also limited but a small observational study reported some promising results in relation to regression of target organ damage.

5.7 Following the public consultation the UK NSC acknowledged that only one comment was received from the British & Irish Hypertension Society. The society supported the conclusions of the evidence summary. The Society also offered the suggestion that studies investigating the definition and prevalence of hypertension in children in the UK should be undertaken with some urgency, which the UK NSC supported in principle, noting that research prioritisation was outside the Committee's remit.

The UK NSC recommended that population screening for hypertension in children and young people should not be undertaken.

Criteria (only include criteria included in the review)	Met/Not Met
The Condition	
1. The condition should be an important health problem as judged by its frequency and/or severity. The epidemiology, incidence, prevalence and natural history of the condition should be understood, including development from latent to declared disease and/or there should be robust evidence about the association between the risk or disease marker and serious or treatable disease	**Not Met**
The Test	
4. There should be a simple, safe, precise and validated screening test.	**Not Met**
The Intervention	
9. There should be an effective intervention for patients identified through screening, with evidence that intervention at a pre-symptomatic phase leads to better outcomes for the screened individual compared with usual care. Evidence relating to wider benefits of screening, for example those relating to family members, should be taken into account where available. However, where there is no prospect of benefit for the individual screened then the screening programme shouldn't be further considered.	**Not Met**
The Screening Programme	
11. There should be evidence from high quality randomised controlled trials that the screening programme is effective in reducing mortality or morbidity. Where screening is aimed solely at providing information to allow the person being screened to make an "informed choice" (eg. Down's syndrome, cystic fibrosis carrier screening), there must be evidence from high quality trials that the test accurately measures risk. The information that is provided about the test and its outcome must be	**Not Met**

of value and readily understood by the individual being screened.	
12. There should be evidence that the complete screening programme (test, diagnostic procedures, treatment/ intervention) is clinically, socially and ethically acceptable to health professionals and the public.	**Not Met**

Antenatal screening for Hepatitis C Virus (HCV)

5.7 Hepatitis C is a serious and contagious infection that affects the liver. The infection is usually mild and can therefore go undetected in many people. If left untreated for a significant period, the infection can cause serious damage to the liver. In pregnancy, the virus can be transmitted to the baby whilst in the womb or during birth. It is estimated that around 2% to 3% of the world's population is affected by HCV.

5.8 The UK NSC last reviewed the evidence to screen for HCV during pregnancy in 2011, and recommended that screening should not be offered. This was because;

- There was no treatment to improve the management of maternal and childhood HCV
- There was a lack of data on HCV prevalence in the contemporary pregnant population in the UK; and
- There was difficulty in diagnosing the condition during pregnancy

5.9 This time round, the review focussed on five key areas from the 2011 review. These were;

- The number of pregnant women with HCV in the UK (seroprevalence and current infection prevalence)

- The risk factors for transmission of infection from mother to baby
- The accuracy of screening tests for HCV
- The effectiveness of direct acting antiviral (DAA) drugs in treating pregnant women and preventing the transfer of HCV to their child, and
- The effectiveness of DAA drugs in treating children who acquired HCV from their mothers

5.10 The review found that there was a lack of evidence on these questions. Whilst there were three studies from the South East of England recording the seroprevalence of HCV between 0.1% and 0.5% in the pregnant population, it was unclear how applicable this figure is to the whole of the UK. The review found that the factors increasing the risk of vertical HCV transmission included high viral load, HIV coinfection, and factors related to the birthing process. However, many of the studies were of low quality and the evidence for some risk factors was inconsistent.

5.11 There were no studies on the test accuracy of HCV screening tests or on the effectiveness of DAAs in pregnant women and children. Dr Farah Seedat told the Committee that studies on the safety and effectiveness of DAAs in pregnant women and children are in progress with expected completion dates between 2019 and 2022, which the Committee were pleased to be informed about.

5.12 The public consultation received five responses; one which supported the recommendation not to offer population screening whereas the other four expressed support for antenatal screening for HCV. The latter highlighted the additional benefits screening could offer such as; improving access to hard to reach groups, providing the opportunity to identify the women who have HCV and then offering them treatment after birth and providing follow up to their children and the possibility of contact screening. Dr Seedat informed the Committee that based on the assumed potential benefits screening could offer, an evidence mapping exercise was undertaken to look at the volume of evidence relating to HCV screening

pathways and their reported outcomes. It found that there was no evidence to demonstrate the proposed benefits.

5.13 Based on the review and outcomes provided by the evidence mapping exercise, the UK NSC recommended that population screening for antenatal hepatitis C virus should not be recommended.

Criteria (only include criteria included in the review)	Met/Not Met
The Condition	
1. The condition should be an important health problem as judged by its frequency and/or severity. The epidemiology, incidence, prevalence and natural history of the condition should be understood, including development from latent to declared disease and/or there should be robust evidence about the association between the risk or disease marker and serious or treatable disease	**Not Met**
The Test	
4. There should be a simple, safe, precise and validated screening test.	**Not Met**
The Intervention	
9. There should be an effective intervention for patients identified through screening, with evidence that intervention at a pre-symptomatic phase leads to better outcomes for the screened individual compared with usual care. Evidence relating to wider benefits of screening, for example those relating to family members, should be taken into account where available. However, where there is no prospect of benefit for the individual screened then the screening programme shouldn't be further considered.	**Not Met**

Antenatal Screening for HSV-1 &HSV-2 infection to prevent neonatal herpes

5.14 Neonatal herpes is an infection caused by the herpes simplex virus (HSV). The majority of cases are caused by vertical transmission of HSV from the mother to her baby during a vaginal birth. Although neonatal herpes is rare in the UK (approximately 4 in every 100,000 live births), the infection can cause serious harm to the baby if contracted, as the baby's immune system will not be fully developed to fight off the viral infection. The reported mortality rate for infected babies is high at around 20%.

5.15 The UK NSC last reviewed antenatal screening for HSV in 2006 and recommended that screening should not be offered. This was because there was a lack of evidence that screening pregnancies to identify women at risk of new infections or women who were seropositive would bring benefit. The review recommended that efforts should be focussed on trying to improve early diagnosis and treatment for neonatal HSV as well as ensuring that appropriate action where primary maternal infection occurs during late pregnancy.

5.16 The current evidence review looked at five key areas and found that;

- The volume, quality and direction of new evidence since the 2006 review had not changed significantly. Although there was a small study which suggested a higher rate of incidence of neonatal herpes in the UK (17.5 per 100,000 live births) it was not clear how applicable this is to the UK population as a whole
- There is still a lack of UK data on the seroprevalance of HSV-1 and HSV-2 in pregnant women. Although international data was identified, the applicability to the UK was uncertain
- There is alack of evidence regarding the test performance in pregnant women
- There is lack of evidence from the small studies identified as part of the review, of the impact of interventions to prevent seronegative women acquiring HSV on neonatal herpes infection.

5.17 Nine comments were received as a result of the public consultation. Most supported the conclusions that there was a lack of evidence to introduce screening and that greater focus should be on raising awareness and helping to improve early diagnosis,

5.18 The Committee also noted that there is no international screening programme for this condition. Based on the lack of evidence the Committee agreed that a population screening programme for HSV-1 &HSV-2 infection in pregnancy should not be recommended.

Criteria (only include criteria included in the review)	**Met/Not Met**
Section 1 - Criteria for appraising the viability, effectiveness and appropriateness of a screening programme	
The Condition	
1. The condition should be an important health problem as judged by its frequency and/or severity. The epidemiology, incidence, prevalence and natural history of the condition should be understood, including development from latent to declared disease and/or there should be robust evidence about the association between the risk or disease marker and serious or treatable disease	**Not Met**
The Test	
4. There should be a simple, safe, precise and validated screening test.	**Not Met**
The Intervention	
9. There should be an effective intervention for patients identified through screening, with evidence that intervention at a pre-symptomatic phase leads to better outcomes for the screened individual compared with usual care. Evidence relating to wider benefits of screening, for example those relating to family members,	**Not Met**

should be taken into account where available. However, where there is no prospect of benefit for the individual screened then the screening programme should not be further considered.	

Screening for Spinal Muscular Atrophy

5.19 Spinal Muscular Atrophy (SMA) is a degenerative condition which affects the motor-neurone in the body resulting in muscle weakness. The condition varies in its severity, and it is traditionally categorised into five different types spanning from type 0 (the most severe) to type 4 (stable and mild disease). Type 1, also referred to as Werdnig-Hoffman disease, is the most common, accounting for approximately 50% of incident cases of SMA.

5.20 There is no cure for SMA, but there is treatment to help manage symptoms and provide individuals with a better quality of life.

5.20 Current therapies for SMA focus on management of disease symptoms in a holistic approach, depending on the severity of the condition.

5.21 The UK NSC last looked at the evidence to screen for SMA in 2013. Screening for SMA was not recommended antenatally because of issues around carriers and the prediction on severity for the condition. At the time of the review, there was no published data on carriers in the UK only estimates of the frequency. Furthermore if a couple had been identified as carriers and underwent a diagnosis on the fetus, to confirm whether SMA was present, the test could not predict the severity of the condition.

5.22 Dr Cristina Visintin informed the Committee that the 2018 review not only looked at the areas of concern identified from the 2013 review but particular focus was placed on neonatal screening, as this is an area of particular concern for stakeholders.

5.23 Seven key questions were proposed which covered; the condition, the test both in newborns and in carrier screening, intervention in newborns, the effectiveness of pharmacological intervention in people with SMA (not only screen detected), management of the care pathway and reporting outcomes that the screening programme may have if recommended.

5.24 Dr Visintin told the Committee that when looking at prevalence for the 2018 review only one EU study was identified. However, the incidence reported by this study was not consistent with the incidence reported by a previous study included in the 2010 UK NSC review, and it was not possible to evaluate if the results from the 2018 UK NSC review are more valid than the previously reported paper. Therefore, the prevalence of the condition in the UK remains unclear and this criterion was not met.

5.25 In relation to the screening tests for SMA carriers and neonates the evidence base for criterion 4 indicates it is not possible to robustly quantify the accuracy of screening such methods. Concerns remain on the ability of neonatal screening tests to predict the severity of the condition.

5.26 In regards to treatment the UK NSC was reminded that although there is no cure for the condition there had been positive developments in this field. Dr Visintin informed the Committee that in 2016 the FDA and NAs had agreed to license the first therapy drug for SMA; Nusinersen, marketed as Spinraza. Early data suggests that improvements can be seen in children who have received the drug. This is administered as a intrathecal injection directly into the central nervous system via a lumbar puncture). However; the Committee recognised that data is still emerging and more information is needed especially on long-term efficacy and safety of the drug and in a pre-symptomatic population.

5.27 The consultation received a number of submissions and Dr Visintin provided the Committee with a breakdown of key themes which included; that lack of evidence on the prevalence of orphan or rare conditions should not prevent the Committee

from recommending screening, and that the UK NSC should consider 5q SMA as the main screening target. The Committee discussed consultation comments and based on this Dr Visintin proposed that:

i. The review should be amended to focus primarily on 5q SMA. It is expected that this should not change the conclusion of the review, as the quality of evidence considered remains unchanged.

ii. In relation to the lack of evidence found by the review on treatment of pre-symptomatic population with Nusinersen some stakeholders provided evidence from conferences reports or unpublished data. Dr Visintin informed the Committee that such evidence provided could not be included in the review because they do not meet the inclusion criteria agreed for this rapid review. However, Dr Visintin informed the committee that there is an ongoing trial, NURTURE which may address these queries and the results should be published in time for the next review

5.27 Based on the review evidence and on the proposed changes to the review, the UK NSC found that there was still insufficient information to support population screening for SMA. However, the Committee recognised that there is a lot of research ongoing on treatment for SMA and acknowledged that evidence from such work may be useful in addressing some of the uncertainties of this review in the future. The UK NSC agreed that population screening for SMA should not be recommended.

Criteria (only include criteria included in the review)	Met/Not Met
Section 1 - Criteria for appraising the viability, effectiveness and appropriateness of a screening programme	
The Condition	
1. The condition should be an important health problem as judged by its frequency and/or severity. The epidemiology, incidence, prevalence	**Not Met**

and natural history of the condition should be understood, including development from latent to declared disease and/or there should be robust evidence about the association between the risk or disease marker and serious or treatable disease	
The Test	
4. There should be a simple, safe, precise and validated screening test.	**Not Met**
The Intervention	
9. There should be an effective intervention for patients identified through screening, with evidence that intervention at a pre-symptomatic phase leads to better outcomes for the screened individual compared with usual care. Evidence relating to wider benefits of screening, for example those relating to family members, should be taken into account where available. However, where there is no prospect of benefit for the individual screened then the screening programme shouldn't be further considered.	**Not Met**
10. There should be agreed evidence based policies covering which individuals should be offered interventions and the appropriate intervention to be offered.	**Not Met**
The Screening Programme	
11. There should be evidence from high quality randomised controlled trials that the screening programme is effective in reducing mortality or morbidity. Where screening is aimed solely at providing information to allow the person being screened to make an "informed choice" (eg. Down's syndrome, cystic fibrosis carrier screening), there must be evidence from high quality trials that	**Not Met**

	the test accurately measures risk. The information that is provided about the test and its outcome must be of value and readily understood by the individual being screened.	

Screening for Obesity in Children under the age of 5 and in 7-11 year olds

5.28 The Committee discussed how obesity among children and young adults is a growing concern in the UK. As a result the UK NSC recognised that various campaigns have taken place such as; reducing unhealthy food choices in schools, awareness of healthy food swaps, introduction of the sugar tax and schools engaging all children in more physical activity.

5.29 The UK NSC last considered screening for children for obesity in 2006 and recommended that screening should not be offered. This was because; the screening test (BMI) was not found to be sufficiently reliable, there was uncertainty on whether obesity in childhood predicted obesity in adulthood, a lack of evidence that interventions to manage BMI were effective in the long term, and a lack of trial evidence that comparing screening to no screening or other approaches.

5.30 The current review was based largely on a major HTA systematic review of screening in two age groups, the under 5s and children aged 7-11. The review reported that there were good cohort studies which tracked obesity in the 7-11 age groups to adulthood but not for children under the age of 5. In the 7 – 11 age groups there was also a generally weak, but statistically significant, association between childhood obesity and type 2 diabetes, metabolic syndrome and coronary heart disease in adulthood. However this was not the case for stroke, hypertension or breast cancer. In the under 5s the evidence was reported to be generally weaker in terms of volume and quality.

5.31 In terms of the test, single measure of BMI, no studies were found for the under 5s. In the 7-11 age groups the review reported that single BMI measurement resulted in

moderate sensitivity and specificity values and stated that the criterion was not met. The quality of the studies was of concern for example non-application of the gold standard and age at screening not being reported in the studies. Studies reporting alternative tests, e.g. waist to height ratio, had been considered but the volume of studies was again very low.

5.32 In regards to interventions to manage BMI there were no studies found in a screened population. In non-screened populations there is evidence that multi component interventions can change BMI in the short term. No harms were reported in the review however a systematic review, published following completion of the UK NSC review, did find that reporting back weight measurement results was associated with disordered diet and weight gain.

5.33 A total of eight responses were received in the consultation. The majority of responses favoured screening. There was concern that a recommendation not to implement a screening programme would impact negatively on the National Child Measurement Programme. Yet comments also acknowledged that the evidence base on outcomes from BMI management interventions did not show sustained benefit for those who participated. The Committee considered this a key gap in the evidence and were concerned that there may also be evidence that reporting back weight measurement results may be counter-productive. Respondents to the consultation also submitted papers on the natural history of obesity and these were being considered by the reviewers. Similarly papers on waist to height ratio as an alternative to BMI measurement had been submitted and these were also being considered by the reviewers.

5.34 An updated version of the reviews would be brought to the next UK NSC meeting to complete the review process. It was noted that this may change some elements of the review. However because there was insufficient evidence of benefit from BMI management interventions the Committee agreed that it would not be possible to

recommend a screening programme. As such the Committee agreed to reaffirm the current recommendation that screening should not be offered.

Updates

NIHR NETSCC Update (for information)

The Committee noted the updates

SIGN Update (for information)

The Committee noted the updates

AOB

None