UK National Screening Committee

UK National Screening Committee (UK NSC)

Evidence map on screening for primary hypertension in children and young people

Date: 24 June 2022

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Aim

To ask the UK National Screening Committee (UK NSC) to make a recommendation, based on the evidence presented in this document, whether or not screening for primary hypertension in children and young people meets the UK NSC criteria for a systematic population screening programme.

Current Recommendation

The 2018 review of screening for primary hypertension in children and young people concluded that systematic population screening is not recommended. This was because the review looked at evidence on the association between primary hypertension in this population and the risk of adverse outcomes, the diagnostic accuracy of screening tests for primary hypertension in this population and the effectiveness of pharmacological, non-pharmacological or combination interventions for treating primary hypertension in children and young people and preventing hypertension in adults.

The 2018 review also searched for evidence on screening strategies for hypertension in children and young people, and the optimal age to initiate screening, the optimal time intervals to repeat screening and who should do the screening.

It concluded that the prevalence of elevated blood pressure in children and young people in the UK was uncertain. There was good quality evidence that high blood pressure is an independent factor associated with target organ damage in children

and adolescents. However, although hypertension may be identified using current standard techniques in a clinical setting, from the perspective of population screening, these methods would result in many children being identified with elevated blood pressure who did not have hypertension. In relation to intervention, the review found that some types of non-pharmacological interventions showed some reduction in blood pressure, but it was not clear if this would result in any clinically meaningful change and whether this could be maintained over the long-term.

The 2018 review did not identify any studies demonstrating effective blood pressure screening strategies in children and adolescents or any evidence that addressed the questions of the optimal age to initiate a population-based screening programme, optimum time intervals or who should carry out the screening test.

Evidence Map

The 2022 evidence map on screening for primary hypertension in children and young people was performed by Solutions for Public Health (S P H) in accordance to the UK N S C evidence review process. Evidence maps are rapid evidence products which aim to gauge the volume and type of evidence relating to a specific topic. Screening for primary hypertension in children and young people was due to be reviewed in accordance to the triennial review process.

The scope of the 2022 evidence map addresses the following questions:

1. What is the association between primary hypertension in children and young people and the risk of adverse outcomes?

2. What is the diagnostic accuracy of screening tests for primary hypertension in children and young people?

3. What is the effectiveness of pharmacological and non-pharmacological and/or combination interventions for preventing hypertension in children and young people and its effectiveness in preventing long-term effect?

4. Is there an effective screening strategy for primary hypertension in children and young people to prevent hypertensive disorders in later life?

The conclusion of the 2022 evidence map is that no further work on screening for primary hypertension in children and young people should be commissioned at the present time and the topic should be reconsidered in 3-years' time. Therefore, systematic population screening for primary hypertension in children and young people is not recommended in the UK.

The key reasons for this are that, although, new evidence published since the last UK N S C review was identified on the association between primary hypertension in children and young people and the risk of adverse outcomes, there was limited new evidence identified on all the other questions considered by the 2022 evidence map.

Therefore, it is unlikely that more work on this condition would lead to a change in the UK N S C's position.

In relation to the diagnostic accuracy of screening tests only one systematic review and one primary study met the inclusion criteria for this question. The systematic review concluded that the evidence base was inconclusive about whether the diagnostic accuracy of blood pressure measurements is adequate for screening asymptomatic children and adolescents in primary care.

One systematic review met the inclusion criteria for this question. Limited new evidence was identified on the effectiveness of pharmacological and non-pharmacological and/or combination interventions for preventing hypertension in children and young people and its effectiveness in preventing long-term effect.

No studies were identified on screening strategies for primary hypertension in children and young people to prevent hypertensive disorders in later life.

Consultation

A three month consultation (period of consultation) was hosted on the UK NSC website. Direct emails were sent to 9 stakeholders. (Annex A)

Comments were received from the following 3 stakeholders (see Annex B for comments):

- Royal College of General Practitioners
- Blanka Caen
- Royal College of Paediatrics and Child Health (RCPCH)

Overall, the stakeholders were supportive of the review conclusions. However, one stakeholder is also in support of an opportunistic approach to measuring children's blood pressure and suggested that people who are regularly in contact with children (such as teachers and carers) should be aware of signs and symptoms of the condition and refer children to healthcare professionals if there are concerns.

The RCPCH noted that members from 3 paediatric nephrology centres across the UK highlighted the fact that significant resource and workforce challenges may be encountered should in future screening for hypertension in children be recommended. They also remarked on the fact that there is the need for developing new research proposals to gather more evidence in this field, particularly within home blood pressure or primary care blood pressure monitoring for children, if screening for hypertension is to be feasible in the future.

Recommendation

The Committee is asked to approve the following recommendation:

On the basis of this evidence map, no further work on screening for primary hypertension in children and young people should be commissioned at the present time and the topic should be reconsidered in 3-years' time.

A systematic population screening for primary hypertension in children and young people is not recommended in the UK.

UK National Screening Committee

Annex A: List of Organisations Contacted

1. British & Irish Hypertension Society
2. Faculty of Public Health
3. Institute of Child Health
4. Royal College of General Practitioners
5. Royal College of Paediatrics and Child Health
6. Royal College of Physicians
7. Royal College of Physicians and Surgeons of Glasgow
8. Royal College of Physicians of Edinburgh
9. Vascular Society of Great Britain and Ireland

Annex B: Consultation Responses

Note: Personally identifying details have been redacted for individuals who have chosen not to have personal details made public.

1-Name: xxxx xxxx, Member of the public

Condition: Hypertension (child)

Affected Comment: Not as far as I'm aware

Evidence Comment: Yes – the exclusion of studies not in English is a concern

Discussion comment:

I think that it would be very simple to take a child's blood pressure when innoculations are given, they see the GP, they seem to get tired or out of breath more than peers, they are sedentary or overweight, have vision or coordination issues, etc. These last points should be noticed by teachers, esp in PE lessons and during playtime, and could just be referred to the school nurse in the first instance. Beware of 'white coat symdrome' though, some kids are just scared of medics due to parents' reactions, previous experiences, etc.

Recommendation comment:

Yes – but using more of the approach above than as a formal, separate thing. Just because we don't know what the impact is, how many kids have it, etc does not mean we should not check children's BP. Anything else is just being in denial. BP should always be checked in both arms.

Alternatives comment:

First you have to identify it, see above, and only then work out what needs to be done (if anything).

2-Name: xxxx xxxx
Organisation: Royal College of General Practitoners
Role: Clinical Policy Officer

Condition: Hypertension (child)

The RCGP is supportive of the decision not to screen for hypertension in children.

3-Name: Comments received on behalf of Dr Matko Marlais (British Association for Paediatric Nephrology) and Dr Saad Malik
Royal College of Paediatrics and Child Health
Condition: Hypertension (child)

Page 20, conclusions: We are in overall agreement with the conclusions, although there is new evidence on the association of blood pressure and adverse outcomes, we agree that on the basis of this alone the UK screening position is unlikely to change.

Page 20, conclusions: Colleagues responding from 3 paediatric nephrology centres across the UK wished to highlight the significant resource and workforce challenges which may arise, should a future decision over screening for hypertension in children be recommended. These should be noted.

Pages 15-16, evidence relating to Q2: Paediatric nephrology colleagues noted that we needed to highlight the importance of developing new research proposals to gather more evidence in this field, particularly within home blood pressure or primary

care blood pressure monitoring for children, if screening for hypertension is to be feasible in the future.

Generic: We believe it would be helpful for paediatric nephrology colleagues to be involved in such evidence mapping and we would be keen to be informed when they are planned so that colleagues with a specialist interest can input if required.

Generic: We could not find any controversial text or mistakes to comment on.