PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Trends in the coverage of 'universal' child health reviews: observational study using routinely available data
AUTHORS	Rachael Wood, Alex Stirling, Claire Nolan, Jim Chalmers and Mitch Blair

VERSION 1 - REVIEW

REVIEWER	Dr Rachel Knowles PhD, FFPH, MRCGP, DCCH Clinical Research Fellow MRC Centre of Epidemiology for Child Health UCL Institute of Child Health London, UK No competing interests to declare.
REVIEW RETURNED	06/01/2012

THE STUDY	The sentence in the abstract under 'Design' is unclear and could be rephrased, perhaps as two sentences. The abstract refers to 'deprivation' but does not specify that this is 'area deprivation' as determined by postcode-related SIMD score, rather than individual deprivation measured using data available about the child or family. As the authors discuss evidence relating to the ability of deprived individuals to access healthcare, it is important to distinguish whether families might not be accessing health provision because of a characteristic related to their individual deprivation, or whether the area they live in is deprived so the healthcare provision is less available to be accessed.
RESULTS & CONCLUSIONS	The main conclusion drawn by the authors is that children living in more deprived areas are less likely to receive universal child health reviews than those living in more affluent areas. The conclusion (Page 10, line 41) that deprived families don't receive reviews because they find it difficult to 'engage' with routine child health reviews is not adequately supported by the results of this study which demonstrate only that families in deprived areas are less likely to receive such a review but cannot explore why this might be. It is also possible that children in deprived areas receiving 'additional' or 'enhanced' support do not need routine reviews because they are already being intensively monitored. In the introduction, it is suggested that the primary aim of the reviews is to identify children in need of additional support not to monitor those already receiving it. Alternatively, universal review coverage might be worse in deprived areas as the scarce resources are being used for enhanced support so not available for reviews. The discussion would therefore be improved if the authors did not

	focus solely on the reasons for individual families not accessing services but considered a wider range of reasons why children in more deprived areas might not receive reviews.

REVIEWER	David Elliman Consultant in Community Child Health Whittington Health United Kingdom. I have no competing interests
REVIEW RETURNED	05/02/2012

The reviewer completed the checklist but made no further comments.

REVIEWER	Dr D Simkiss Associate Professor in Child Health Division of Mental Health and Wellbeing Warwick Medical School University of Warwick Coventry CV4 7AL United Kingdom
REVIEW RETURNED	06/02/2012

RESULTS & CONCLUSIONS	In the results section of the paper the reader is told that Chi squared testing (with YAtes continuity correction is used and that confidence intervals were calculated. However neither in the Results nor the abstract are any confidence intervals given, in fact all that is presented is percentages. I was hoping for some Odds Ratios and CI's. I confess I am not familiar with the Newcombe-Wilson formula and would suggest you take statistical advice on its use. I was puzzled as to why when the authors use quintiles for socio economic status they then present data on the top and bottom 15%, I wonder if this is because the effect is not seen if the whole quintile is used? I would also like the authors to comment on why there is no clear gradient with SES, figure 1 does not show it, but the text says that there is no clear relationship across all the quintiles.
GENERAL COMMENTS	In the Method section please could you explain why recording of the 48-54 month review was not compulsory. In the Discussion please can you discuss children in mobile families, 1 in 6 of children had moved by the time they were 44 months, what are the characteristics of this group of children not included in this study.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1
The sentence in the abstract under 'Design' is unclear and could be rephrased, perhaps as two sentences.
This sentence has been clarified.

The abstract refers to 'deprivation' but does not specify that this is 'area deprivation' as determined by postcode-related SIMD score, rather than individual deprivation measured using data available about the child or family. As the authors discuss evidence relating to the ability of deprived individuals to access healthcare, it is important to distinguish whether families might not be accessing health provision because of a characteristic related to their individual deprivation, or whether the area they live in is deprived so the healthcare provision is less available to be accessed.
The abstract has been amended to make it clear that an area based rather than individual based measure of deprivation was used.

The main conclusion drawn by the authors is that children living in more deprived areas are less likely to receive universal child health reviews than those living in more affluent areas. The conclusion (Page 10, line 41) that deprived families don't receive reviews because they find it difficult to 'engage' with routine child health reviews is not adequately supported by the results of this study which demonstrate only that families in deprived areas are less likely to receive such a review but cannot explore why this might be.
We agree that this analysis cannot fully explain why some children do not receive their child health reviews but the audit findings suggest that unavailability (e.g. child in hospital) or parental disengagement (e.g. failure to respond to multiple invitations) are the most common underlying reasons. The audit results did not suggest that any children had not been invited to review. The relevant sentence in the discussion has been clarified.

It is also possible that children in deprived areas receiving 'additional' or 'enhanced' support do not need routine reviews because they are already being intensively monitored. In the introduction, it is suggested that the primary aim of the reviews is to identify children in need of additional support not to monitor those already receiving it. Alternatively, universal review coverage might be worse in deprived areas as the scarce resources are being used for enhanced support so not available for reviews.
Scottish child health programme policy is clear that all children should receive the universal child health reviews. Enhanced levels of support are offered in addition to, not instead of, the universal service. Children may be receiving intensive multi-agency support, eg for child protection concerns, but should still receive their universal child health reviews to enable early detection of developmental or physical health problems that may otherwise be overlooked. This has been clarified in the introduction.

The discussion would therefore be improved if the authors did not focus solely on the reasons for individual families not accessing services but considered a wider range of reasons why children in more deprived areas might not receive reviews.
Comment on the need for adequate resourcing of the child health programme that is commensurate with population needs at local level has been added to the discussion.

Reviewer 3
In the results section of the paper the reader is told that Chi squared testing (with Yates continuity correction is used and that confidence intervals were calculated. However neither in the Results nor the abstract are any confidence intervals given, in fact all that is presented is percentages. I was hoping for some Odds Ratios and CI's.
The confidence intervals for the difference in coverage seen in the most and least deprived areas along with p values have been added to the data table supporting figure 1 and added to the relevant text in the results section. We would welcome the data tables supporting the figures being made available as supplementary information for transparency.

I confess I am not familiar with the Newcombe-Wilson formula and would suggest you take statistical advice on its use.

Statistical colleagues within the NHS Information Services Division have provided the relevant advice. The NW formula is widely used in ISD and is appropriate for calculating the significance of a difference between two independent proportions.

I was puzzled as to why when the authors use quintiles for socio economic status they then present data on the top and bottom 15%, I wonder if this is because the effect is not seen if the whole quintile is used? I would also like the authors to comment on why there is no clear gradient with SES, figure 1 does not show it, but the text says that there is no clear relationship across all the quintiles.
We assessed coverage by most and least deprived 15% groups and by deprivation quintile. Figure 1 gives coverage by most and least deprived groups for each review in both cohorts. Most and least deprived groups were used here for clarity of presentation and because it is easier to statistically test the difference in coverage between deprivation groups when two dichotomous groups are used. The results show that coverage is lower for the most deprived groups for every review in both cohorts. We did wish to explore whether there is gradient in coverage across all deprivation groups as well as a difference between most and least deprived groups. Para 3 in the results notes that a clear gradient was found for all reviews except the 10 day review (which had very high coverage) in both cohorts. Figure 2 shows the gradient for cohort 1 for illustration.

In the Method section please could you explain why recording of the 48-54 month review was not compulsory.
We assume that the decision not to mandate recording of the 48-54 month review was a pragmatic one designed to give practitioners and Boards some flexibility in managing the burden of data recording. This is rather speculative however: the decision was made back in 1991 when the CHSP-PS system was established and we have not been able to find the specific reasoning behind the decision. A comment has been added to the methods to note that this situation reflects a historical decision.

In the Discussion please can you discuss children in mobile families, 1 in 6 of children had moved by the time they were 44 months, what are the characteristics of this group of children not included in this study.
We acknowledge that our analysis is restricted to children who remained resident in the same NHS Board area for the period of study (ie up to 59 months of age for the old CHP cohort and up to18 months for the new CHP cohort) and that coverage may be different in children that move area. A previous unpublished analysis conducted by ISD provides some information on the difference in child health review coverage between non-movers and movers. The previous analysis (led by Jim Chalmers, co-author on the current paper) examined the coverage of child health reviews up to the 39-42 month contact for children born in 1999 and living within the same nine NHS Board areas that were included in this study. The previous analysis excluded children who had died or moved to an excluded Board (or emigrated from Scotland altogether). Unlike in this study, however, the previous analysis did include children who had moved between the included Board areas and therefore had a lower exclusion rate (around 5% compared to the 16% for our old child health programme cohort). The previous analysis found coverage levels very similar to those found for our old CHP cohort. In addition, it formally compared the coverage of children who stayed within the same NHS Board area throughout childhood to that of children who had moved between included Boards. It found that coverage was marginally, but not significantly, higher for non-movers than movers. It was impossible to ascertain coverage for children who moved to areas that did not participate in the CHSP-PS system for obvious reasons. We could not use these looser inclusion criteria in this current analysis due to the complexities involved in different Boards implementing the revised schedule of child health reviews at different times however the previous ISD analysis gives some reassurance that our results are likely to provide a reasonable estimate of the child health review coverage in the whole Scottish population. A comment on this issue has been added to the discussion.

Would you be willing to share your data? Cast your vote in our Online Poll
Survey completed.