**Appendix 1.**

**Placing the results of the longitudinal study into context with other studies of Cochrane review updating.**

One author (HB) searched for studies of Cochrane review updating in the Cochrane Methodology Register (which ended in May 2012), (1) as well as the author’s collection of studies on updating systematic reviews. Reference lists of relevant papers were searched for further studies. There was no restriction on language or type of document, as long as it included data on updating, changes in conclusion, or analysis of reporting quality of updates in a cohort of Cochrane reviews.

Data were collected on the number of included Cochrane reviews, the time coverage of the cohort, and whether there was a topic restriction for the reviews. Each was reviewed for data on measures of currency of reviews, frequency of updating, frequency of changes of conclusion, and quality of reporting on updates, and relevant findings were summarised in the overview that follows.

We found 13 studies with relevant data. There were another two studies that measured different outcomes, (2,3) and one study (4) referred to two studies in conference abstracts to which we did not have access.

**Overview of studies of updating in Cochrane reviews.**

| 95 | 96 | 97 | 98 | 99 | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | **Study** | **Findings** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **36** new 2/95 | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1998 (5) | 50% updated within 2 years |
| **1268** from all in 1/02 | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2002 (6) | 95% amended, not clear if updated |
| **1571** from all in 1/03 | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2003 (7) | 46.5% date of search within last 2 years |
| **147** from all in 2/03 | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2004 (8) | Total updated: 48% |
| **377** from all in 2/98 | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2005 (4) | 70% updated, 9% changed conclusion |
| **86** reviews & protocols from all in 4/06 | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  | 2006 (9) | 60% updated within 2 years; 26% retracted |
| **2607** from all in 1/06 | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  | 2006 (10) | 43% updated in last 2 years |
| **53** updated in 4/02 | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2006 (11) | Mean time to update 2.7 years |
|  |  |  |  |  | **301** with protocols in 2/00-1/01 | | | | | | | | |  |  |  |  |  |  |  |  |  |  | 2008 (12) | A third updated; 0.7% every 2 years |
| **313** from all in 3/07 | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  | 2010 (13) | 32.7% in 2 yrs, median 3.3 yrs to 1st; 2% major conclusion change |
|  |  |  |  |  | **623** new in 2000-2005 | | | | | | | | | | | |  |  |  |  |  |  |  | 2011 (14) | 45% in last 2 yrs; median to update 1.8 yrs |
| **5418** all to end of 2012 | | | | | | | | | | | | | | | | | |  |  |  |  |  |  | 2013 (15) | ~20% updated every 2 years |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **682** new 2010, updated by 2017 | | | | | | | |  | 2018 (16) | 43% update rate; 3.9% of subset changed conclusion |
| **177** updated in 2003 | | | | | | | | | | | | | | | | | | | | | | | | 2019  *Cohorts in this paper* | Median 3 yrs update, 7 since last; 2.8% major conclusion change |
| **1532** from all in 4/02 | | | | | | | | | | | | | | | | |  |  |  |  |  |  |  | 11.3% updated |

*Notes:*

Green = no subject restriction, Orange = subset of Cochrane reviews in a subject area.

Until 2012, Cochrane reviews were published in 4 issues per year. Issues are referred to by issue/year: e.g. 2/03 is Issue 2 of 2003. First 23 columns are each year of publication of *CDSR*, from issue 1 in 1995 to end of December 2018.

Length of the bar is the time from first included Cochrane reviews. If a study reported it was from the *CDSR*’s inception, the bar begins in 1995, whether or not reviews from 1995 were in the cohort.

**References**

1. Cochrane Collaboration. Cochrane Methodology Register [Internet]. 2019 [cited 2019 Oct 29]. Available from: https://cmr.cochrane.org/

2. Higgins JP. How Should We Interpret Updated Meta-analyses? In Rome: Cochrane Collaboration; 1999 [cited 2019 Nov 13]. Available from: /1999-rome/how-should-we-interpret-updated-meta-analyses

3. Eshun-Wilson I, Jaffer S, Smith R, Johnson S, Hine P, Mateo A, et al. Maintaining relevance in HIV systematic reviews: an evaluation of Cochrane reviews. Syst Rev. 2019 07;8(1):46.

4. French SD, McDonald S, McKenzie JE, Green SE. Investing in updating: how do conclusions change when Cochrane systematic reviews are updated? BMC Med Res Methodol. 2005 Oct 14;5:33.

5. Jadad AR, Cook DJ, Jones A, Klassen TP, Tugwell P, Moher M, et al. Methodology and Reports of Systematic Reviews and Meta-analyses: A Comparison of Cochrane Reviews With Articles Published in Paper-Based Journals. JAMA. 1998 Jul 15;280(3):278–80.

6. Koch G. Are Cochrane Reviews Updated Regularly or Not? In Stavanger: Cochrane Collaboration; 2002. Available from: https://cmr.cochrane.org/?CRGReportID=4572

7. Koch G. Less than half of the Cochrane Reviews are current. In Barcelona: Cochrane Collaboration; 2003. Available from: https://cmr.cochrane.org/?CRGReportID=5113

8. González de Dios J. [Bibliometric analysis of systematic reviews in the Neonatal Cochrane Collaboration. Its role in evidence-based decision making in neonatology]. An Pediatr Barc Spain 2003. 2004 May;60(5):417–27.

9. Henderson S, Hampson L, Atherton D, Neilson J. Ten years of updating Cochrane reviews: the experiences of the Pregnancy and Childbirth Group. In Dublin: Cochrane Collaboration; 2006 [cited 2019 Jul 29]. Available from: https://cmr.cochrane.org/?CRGReportID=9981

10. Koch G. No improvement - still less than half of the Cochrane reviews are up to date. In Dublin: Cochrane Collaboration; 2006. Available from: https://cmr.cochrane.org/?CRGReportID=10066

11. Shea B, Boers M, Grimshaw JM, Hamel C, Bouter LM. Does updating improve the methodological and reporting quality of systematic reviews? BMC Med Res Methodol. 2006 Jun 13;6:27.

12. Tricco AC, Brehaut J, Chen MH, Moher D. Following 411 Cochrane protocols to completion: a retrospective cohort study. PloS One. 2008;3(11):e3684.

13. Jaidee W, Moher D, Laopaiboon M. Time to update and quantitative changes in the results of cochrane pregnancy and childbirth reviews. PloS One. 2010 Jul 13;5(7):e11553.

14. Ngamjarus C, Jaidee W, Laopaiboon M. Progress in time to update of Cochrane Systematic Reviews. In: Cochrane Database of Systematic Reviews [Internet]. Cochrane Collaboration; 2011. p. 159–60. Available from: https://cmr.cochrane.org/?CRGReportID=16807

15. Takwoingi Y, Hopewell S, Tovey D, Sutton AJ. A multicomponent decision tool for prioritising the updating of systematic reviews. BMJ. 2013 Dec 13;347:f7191.

16. Bashir R, Surian D, Dunn AG. Time-to-update of systematic reviews relative to the availability of new evidence. Syst Rev. 2018 17;7(1):195.