Supplementary data

Box S1. Search strategies

Database: Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

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1  continuity of patient care.mp. or "Continuity of Patient Care"
2  (continuity adj2 care).mp.
3  (continuum adj2 care).mp.
4  continuity.mp.
5  (trust* adj2 (doctor* or practitioner* or physician* or provider* or patient*)).mp.
6  (interpersonal or inter personal).mp.
7  (bice adj boxerman).mp.
8  ((personal or most responsible or main or regular or same or known) adj (doctor* or practitioner* or physician*)).mp.
9  COC.mp.
10  (care adj (transition or transitions)).mp.
11  (coordination or co-ordination or coordinating or co-ordinating).mp.
12  or/1-11
13  primary health care.mp. or Primary Health Care/
14  primary care.mp.
15  primary practitioner*.mp.
16  general practitioner*.mp.
17  exp general practice/
18  family physicians.mp. or Physicians, Family/
19  family pract*.mp.
20  or/13-19
21  mortality.mp. or exp Mortality/
22  death rate*.mp.
23  death$1.mp.
24  mo.fs.
25  or/21-24
26  12 and 20 and 25
27  case reports.pt.
28  letter.pt.
29  editorial.pt.
30  personal narratives.pt.
31  27 or 28 or 29 or 30
32  26 and 31
33  26 not 32
34  limit 33 to (english or french)
Database: Embase from 1974

Search Strategy:

1. continuity of patient care.mp. or patient care/
2. (continuity adj2 care).mp.
3. (continuum adj2 care).mp.
4. continuity.mp.
5. (trust adj2 (doctor* or practitioner* or physician* or provider* or patient*)).mp.
6. (interpersonal or inter personal).mp.
7. (bice adj boxerman).mp.
8. ((personal or most responsible or main or regular or same or known) adj (doctor* or practitioner* or physician*)).mp.
9. coc.mp.
10. (care adj (transition or transitions)).mp.
11. (coordination or co-ordination or coordinating or co-ordinating).mp.
12. or/1-11
13. exp primary health care/
14. primary care.mp.
15. (primary practitioner* or general practitioner*).mp.
16. exp general practice/
17. general practitioner/ or family physician*.mp.
18. family pract*.mp.
19. (primary health care or primary healthcare).mp.
20. or/13-19
21. exp mortality/ or mortality.mp.
22. (death rate* or deathrate*).mp.
23. death$.mp.
24. 21 or 22 or 23
25. 12 and 20 and 24
26. limit 25 to (editorial or letter)
27. 25 not 26
28. limit 27 to (english or french)
29. limit 28 to article
30. limit 29 to medline
31. 29 not 30
**PsycINFO** (inception year 1967)
S1 "continuity of patient care" OR SU continuum of care
S2 continuity N2 care
S3 continuum N2 care
S4 continuity
S5 trust* N2 (doctor* or practitioner* or physician* or provider* or patient*)
S6 interpersonal or "inter personal"
S7 bice W1 boxerman
S8 bice and boxerman
S9 (personal or "most responsible" or main or regular or same or known) W1 (doctor* or practitioner* or physician*)
S10 COC
S11 care W1 (transition or transitions)
S12 coordination or co-ordination or coordinating or co-ordinating
S13 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S9 OR S10 OR S11 OR S12
S14 "primary health care" or "primary healthcare"
S15 DE primary health care
S16 "primary care"
S17 "primary practitioner*" or "general practitioner*
S18 "family physician*" OR DE general practitioners
S19 "family pract*"
S20 S14 OR S15 OR S16 OR S17 OR S18 OR S19
S21 mortality OR DE (death and dying) OR DE mortality rate
S22 "death rate*"
S23 death or deaths
S24 (S21 OR S22 OR S23)
S25 S13 AND S20 AND S24

**Open Grey Search** (inception year 2011)
Search strategy:
(((continuity OR continuum) NEAR care) OR (trust* NEAR (doctor* OR practitioner* OR physician* OR patient*)) OR (bice AND boxerman) OR ((personal OR most responsible OR main OR regular OR same OR known) NEAR (doctor* OR practitioner* OR physician*)) OR COC OR (care NEAR (transition OR transitions))) AND (primary OR general OR family) AND (mortality OR (death OR deaths))
Website: http://www.opengrey.eu/
To cite or link to this reference: http://hdl.handle.net/10068/980091

**NYAM** (inception year 1999): separate searches for

continuity of care and primary
continuum of care and primary
Continuity of patient care as subject heading
Interpersonal
Inter personal
Transition and care
Personal and doctor(s)
Personal and physician(s)
Personal and practitioner(s)
**Box S2. Attempted synthesis of results**

A meta-analysis was considered, but was ultimately not deemed viable. Of the 11 selected papers, six used a common statistical method, survival analysis, producing a hazard ratio derived from a Cox proportional hazards model. It was decided that estimates from these six studies should be meta-analysed together if possible. McAlister\textsuperscript{28} had to be omitted as the reference category was ‘no visits’. Of the remaining studies, each continuity predictor had a different configuration, ranging from ‘continuous’ to categorical with five categories.

It was thought that it might be possible to calibrate some of the predictors in order to achieve a dose-response curve for each study using software created for this kind of situation\textsuperscript{A1}. The aim of a dose–response meta-analysis is to see if there is any association between increasing dose levels and the outcome, in order to “make inference about the shape of the association from multiple aggregated dose–response data” \textsuperscript{A2}. The usual method consists of estimating the regression coefficients for the study-specific trends separately, and then combining them using meta-analysis. The Metadose macro \textsuperscript{A3} accomplishes three main objectives: to create a dose-response estimate for each study, to assess linearity for each study, and to meta-analyse the dose response estimates from the different studies. Confirming linearity is important because if a study features an association that is non-linear, then the true relationship between predictor and outcome is not represented by a linear coefficient, and will be under-estimated (and hence biased). The metadose macro does not generate a nonlinear estimate based on a random effects model.

Unfortunately, only three of our eligible studies had three or more levels of continuity, meaning that only for those three would it be possible to evaluate the linearity assumption (if n levels <3 then the linearity assumption cannot be rejected). However, one of these authors (Bentler)\textsuperscript{23} was not able to access the extra data needed for the macro. Furthermore, a standard requirement for meta-analysis of non-linear curves is that the studies provide at least two non-referent relative risks\textsuperscript{A2}. The remaining two generated highly nonlinear (quadratic) associations between continuity and mortality, but because they produced opposite looking functional forms from each other, it was decided not to synthesize them in a meta-analysis. This was because the available software (the metadose macro in SAS) only runs fixed effects nonlinear dose response meta analyses, and the opposite nature of the patterns comparing the two studies would mean a random effects model would be essential. The ‘dosresmeta’ package in ‘R’ and Stata’s mvmeta procedure both support random effects nonlinear dose response meta-analysis, but extra data required for these procedures were not available. A further technical point is that methods have not yet been devised for calculating dose-response associations from categorical predictors where the continuous variable is censored, as is the case for variables with a 0-1 range.

**Additional References**


Table S1. GRADE summary of findings table.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Risk with low continuity</th>
<th>Corresponding risk with high continuity</th>
<th>Relative effect (95% CI)</th>
<th>Number of participants</th>
<th>Quality of evidence</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>mortality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>Studies with different populations and different measures of continuity. A summary statistic not feasible</td>
</tr>
<tr>
<td>Meta-analysis of included studies not feasible</td>
<td></td>
<td></td>
<td>Some variation in effect, but majority of studies indicate protective effective of higher continuity</td>
<td></td>
<td>Observational studies. No consistent dose response gradient. Publication bias likely.</td>
<td></td>
</tr>
</tbody>
</table>