Supplement Material:
Record of Search Strategy

Question/Topic: A systematised literature review was conducted to explore existing evidence and knowledge gaps on the association between informal settlement characteristics and health and the impact of informal settlement upgrading on health, within South Africa, an upper-middle income African country.

Population/Problem: Informal settlements
Intervention/Issue: Upgrading interventions
Comparison: Health status before and after upgrading
Outcome/Evaluation: Improved health

Main concepts/keywords/synonyms/ MeSH terms: upgrading; informal; health; South Africa; informal settlement; informal settlements; slum; slums; wellbeing

Databases searched:
Searches were conducted in two databases to identify recent publications – Web of Science, PubMed
Limits: Language English
Time frame: 1998 - 2018

Abstracts of identified documents were read and full text of relevant documents were retrieved for further examination to determine appropriateness for review. In-text searches for the terms “informal settlement”, “slum”, “health”, “infectious”, “chronic”, “non-communicable disease” were conducted to explore relevance of article.

Inclusion and exclusion criteria:

Inclusion criteria:
Studies were included if they met any of the following criteria:

- Study is specific to the context of South Africa
- Study has an explicit link to informal settlements, and to at least one of the four dimensions of housing within the context of informal settlements (i.e. the house, the home, the neighbourhood, the community)
- Study has an explicit link to health (physical, mental and social wellbeing, as per the WHO's 1946 definition)

Exclusion criteria:
Studies were excluded if they met any of the following criteria:

- Published earlier than 1998, as the South African National Housing Code, which incorporates an informal settlement upgrading plan, was implemented in 1997
- Study only linked to poverty or homelessness; no explicit informal settlement link
- Discussion papers; or studies that are still ongoing
- Methodological concerns and/or methodology that was not well described and/or full text was not available

Reference lists: were hand-searched in order to identify studies that were possibly relevant to the following concepts:
The final studies included in the literature review comprised experiments, retrospective case note reviews, case studies, cross-sectional studies, randomised control trials, qualitative studies, and systematic reviews.

Summary of the database searches are provided in Table S1 and Table S2 below.

### Table S1: Search strategy undertaken for initial 2017 search.

<table>
<thead>
<tr>
<th>Database searched</th>
<th>Search terms</th>
<th>Result</th>
<th>Relevant sources</th>
<th>Relevant source refs</th>
<th>Unique sources used</th>
<th>Unique source refs</th>
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<td>Broadened searches:</td>
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<td>Additional searches using combinations of the following terms</td>
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<td>12</td>
<td>[1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]</td>
</tr>
</tbody>
</table>

Exclusion criteria: In pre-1998; if not specific to context of South Africa; did not have explicit link to informal settlements’ did not have an explicit link to health in context of informal settlements
“UPGRADING” AND “INFORMAL” AND “HEALTH” AND “SOUTH AFRICA” 3 2 [13, 14] 2 [13, 14]

Broadened searches:

“UPGRADING” AND “INFORMAL SETTLEMENT” AND “HEALTH” 5 2 [13, 15] -
“UPGRADING” AND “INFORMAL SETTLEMENTS” AND “HEALTH” 2 0 - - -
“UPGRADING” AND “SLUMS” AND “HEALTH” 17 1 [15] - -
“UPGRADING” AND “SLUM” AND “HEALTH” 17 0 - - -
“UPGRADING” AND “SLUM” AND “WELLBEING” 1 0 - - -
“UPGRADING” AND “SLUM” AND “WELL BEING” 5 0 - - -
“UPGRADING” AND “INFORMAL” AND “WELLBEING” 0 0 - - -
“UPGRADING” AND “INFORMAL” AND “WELL-BEING” 2 0 - - -
“UPGRADING” AND “INFORMAL” AND “WELL BEING” 2 0 - - -
“UPGRADING” AND “INFORMAL” AND “WELLBEING” 0 0 - - -

Additional searches using combinations of the following terms:

Reference lists of selected articles were searched:
South Africa; informal settlement(s); slums; any health outcome

Table S2: Search strategy undertaken for additional search conducted in 2018

2018 SEARCH

Limits: English; 1998 - 2018

Excluded Review Round 1: not specific to South African context (n=83); did not have explicit link to informal settlements (n=157); did not have explicit health link (n=39); discussion papers/studies still ongoing (n=10); methodology not disclosed/full text non available (n=2); duplicated articles (n=23);

Excluded Review Round 2: if previously included in 2017 search (n=19); not clearly linked to at least 1 of the 4 interrelated dimensions of housing (n=22)

<table>
<thead>
<tr>
<th>Database searched</th>
<th>Search terms</th>
<th>Result s</th>
<th>Studies retained from round 1 review</th>
<th>Studies retained from round 2 review</th>
<th>Final source refs</th>
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### References


