**Table S1: Prisma Checklist 2020**

## PRISMA 2020 Checklist

| Section and Topic | Item # | Checklist item | Location where item is reported |
|---|---|---|---|
| TITLE | | | |
| Title | 1 | Identify the report as a systematic review. | Front page |
| ABSTRACT | | | |
| Abstract | 2 | See the PRISMA 2020 for Abstracts checklist. | Abstract section |
| INTRODUCTION | | | |
| Rationale | 3 | Describe the rationale for the review in the context of existing knowledge. | Introduction |
| Objectives | 4 | Provide an explicit statement of the objective(s) or question(s) the review addresses. | Introduction |
| METHODS | | | |
| Eligibility criteria | 5 | Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses. | Methods |
| Information sources | 6 | Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted. | Methods |
| Search strategy | 7 | Present the full search strategies for all databases, registers and websites, including any filters and limits used. | Methods |
| Selection process | 8 | Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process. | Methods |
| Data collection process | 9 | Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process. | Methods |
| Data items | 10a | List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect. | Methods |
| | 10b | List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information. | Methods |
| Study risk of bias assessment | 11 | Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process. | Methods |
| Effect measures | 12 | Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results. | NA |
| Synthesis methods | 13a | Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)). | NA |
| | 13b | Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions. | NA |
| | 13c | Describe any methods used to tabulate or visually display results of individual studies and syntheses. | Methods |
| | 13d | Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used. | NA |
| | 13e | Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression). | NA |
| | 13f | Describe any sensitivity analyses conducted to assess robustness of the synthesized results. | NA |

| Section and Topic | Item # | Checklist item | Location where item is reported |
|---|---|---|---|
| Reporting bias assessment | 14 | Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases). | Methods |
| Certainty assessment | 15 | Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome. | Methods |
| RESULTS | | | |
| Study selection | 16a | Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram. | Results |
| | 16b | Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded. | Results |
| Study characteristics | 17 | Cite each included study and present its characteristics. | Results |
| Risk of bias in studies | 18 | Present assessments of risk of bias for each included study. | NA |
| Results of individual studies | 19 | For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots. | NA |
| Results of syntheses | 20a | For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies. | Appendix C |
| | 20b | Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect. | NA |
| | 20c | Present results of all investigations of possible causes of heterogeneity among study results. | NA |
| | 20d | Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results. | NA |
| Reporting biases | 21 | Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed. | NA |
| Certainty of evidence | 22 | Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed. | NA |
| DISCUSSION | | | |
| Discussion | 23a | Provide a general interpretation of the results in the context of other evidence. | Discussion |
| | 23b | Discuss any limitations of the evidence included in the review. | Discussion |
| | 23c | Discuss any limitations of the review processes used. | Discussion |
| | 23d | Discuss implications of the results for practice, policy, and future research. | Conclusion |
| OTHER INFORMATION | | | |
| Registration and protocol | 24a | Provide registration information for the review, including register name and registration number, or state that the review was not registered. | NA |
| | 24b | Indicate where the review protocol can be accessed, or state that a protocol was not prepared. | NA |
| | 24c | Describe and explain any amendments to information provided at registration or in the protocol. | NA |
| Support | 25 | Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review. | Declaration section |
| Competing interests | 26 | Declare any competing interests of review authors. | Declaration section |
| Availability of data, code and other materials | 27 | Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review. | NA |

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**Table S2: Articles included in the systematic review**

| | Authors | Article title | Publication details |
|---|---|---|---|
| **1.** | M. Asaria, S. Griffin, R. Cookson, S. Whyte and P. Tappenden | Distributional cost-effectiveness analysis of health care programmes--a methodological case study of the UK bowel cancer screening programme. | Health Economics 2015 Jun;24(6):742-54. |
| **2.** | F.N. Ngalesoni, G.M. Ruhago, A.T. Mori, B. Robberstad and O.F. Norheim | Equity impact analysis of medical approaches to cardiovascular diseases prevention in Tanzania. | Social Science & Medicine 2016 Dec;170:208-217. |
| **3.** | B.R. Dawkins, A.J. Mirelman, M. Asaria, K.A. Johansson and R.A. Cookson | Distributional cost-effectiveness analysis in low- and middle-income countries: illustrative example of rotavirus vaccination in Ethiopia. | Health Policy and Planning 2018 Apr 1;33(3):456-463. |
| **4.** | T.H. Lee, W. Kim, J. Shin, E.C. Park, S. Park and T.H. Kim | Strategic distributional cost-effectiveness analysis for improving national cancer screening uptake in cervical cancer: a focus on regional inequality in South Korea. | Cancer Research and Treatment 2018 Jan;50(1):212-221. |
| **5.** | S. Griffin, J. Love-Koh, B. Pennington and L. Owen | Evaluation of intervention impact on health inequality for resource allocation. | Medical Decision Making 2019 Apr;39(3):171-182. |
| **6.** | J. Love-Koh, R. Cookson, N. Gutacker, T. Patton and S. Griffin | Aggregate distributional cost-effectiveness analysis of health technologies. | Value in Health 2019 May;22(5):518-526. |
| **7.** | M. Arnold, D. Nkhoma and S. Griffin | Distributional impact of the Malawian essential health package. | Health Policy and Planning 2020 Jul 1;35(6):646-656. |
| **8.** | B. Collins, C. Kypridemos, R. Cookson, P. Parvulescu, P. McHale, M. Guzman-Castillo et al. | Universal or targeted cardiovascular screening? Modelling study using a sector-specific distributional cost effectiveness analysis. | Preventive Medicine 2020 Jan;130:105879. |
| **9.** | S. Griffin, S. Walker and M. Sculpher | Distributional cost effectiveness analysis of west Yorkshire low emission zone policies. | Health Economics 2020 May;29(5):567-579. |
| **10.** | J. Love-Koh, S. Griffin, E. Kataika, P. Revill, S. Sibandze and S. Walker | Methods to promote equity in health resource allocation in low- and middle-income countries: an overview. | Globalization & Health 2020 Jan 13;16(1):6. |
| **11.** | J. Love-Koh, R. Cookson, K. Claxton and S. Griffin | Estimating social variation in the health effects of changes in health care expenditure. | Medical Decision Making 2020 Feb;40(2):170-182. |
| **12.** | J. Love-Koh, B. Pennington, L. Owen, M. Taylor and S. Griffin | How health inequalities accumulate and combine to affect treatment value: a distributional cost-effectiveness analysis of smoking cessation interventions. | Social Science & Medicine 2020 Nov;265:113339. |
| **13.** | F. Yang, C. Agnus, A. Duarte, D. Gillespie, S. Walker and S. Griffin | Impact of socioeconomic differences on distributional cost-effectiveness analysis. | Medical Decision Making 2020 Jul;40(5):606-618. |

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| **14.** | R. Cookson. S.Griffin, O.F. Norheim, A.J. Culyer and K. Chalkidou | Distributional cost-effectiveness analysis comes of age. | Value in Health 2021 Jan;24(1):118-120. |
| **15.** | J. Love-Koh, A. Mirelman and M. Suhrcke | Equity and economic evaluation of system-level health interventions: a case study of brazil's family health program. | Health Policy and Planning 2021 Apr 21;36(3):229-238. |
| **16.** | M. Olsen, O.F. Norheim and S.T. Memirie | Reducing regional health inequality: a sub-national distributional cost-effectiveness analysis of community-based treatment of childhood pneumonia in Ethiopia. | International Journal for Equity in Health 2021 Jan 6;20(1):9. |
| **17.** | A.M.L. Quan, C. Mah, E. Krebs, X. Zang, S. Chen, K. Althoff et al. | Improving health equity and ending the HIV epidemic in the USA: a distributional cost-effectiveness analysis in six cities. | The Lancet HIV 2021 Sep;8(9):e581-e590. |
| **18.** | J.P. Jansen, T.A. Trikalinos and K.A. Philips | Assessments of the value of new interventions should include health equity impact. | Pharmacoeconomics 2022 May;40(5):489-495. |

**Table S3: Study design and effect characteristics**

| Study identifier | Geography and population | Disease area | Intervention | Costs | Health effects | Equity effects |
|---|---|---|---|---|---|---|
| Asaria et al., 2015 | Adults age 30 or above in the United Kingdom | Adenocarcinoma (screening) | 1) No intervention 2) standard screening 3) targeted reminder 4) universal reminder | Costs of screening, diagnostic and treatment costs | QALYs<br>ICER (GBP per QALY) | Relative (Atkinson, Gini) and absolute (Kolm , slope index of inequality) |
| Ngalesone et al., 2016 | Adults age 40 or above who are at CVD risk in Tanzania | Cardiovascular disease | 1) No intervention, 2) ESC CVD prevention 3) WHO CVD prevention, 4) Differentiated risk threshold approach | Healthcare provider and patient costs | Life expectancy<br><br>ICER (USD per life year) | Gini index |
| Dawkins et al., 2018 | Children under 5 years of age in Ethiopia | Rotavirus | 1) No intervention 2) Standard vaccination program 3) Pro poor vaccination program | Vaccine costs + delivering costs and opportunity costs | Mortality and HALYs | EDE health |
| Lee et al., 2018 | Females age 20 or above without a history of cervical cancer in South Korea | Cervical cancer | 1) Biennial PSC to all target populations. 2) Biennial PSC to all target populations + strong screening recommendation to target regions. 3) Regular universal PSC recommendation strategy for all target populations. 4) Strong universal PSC recommendation strategy | Direct and indirect costs of screening and treatment. | QALYs<br><br>ICER (KRW per QALY) | Atkinson ICER |
| Love-Koh et al., 2019 | United Kingdom | Wide range of diseases | 27 single technology appraisals | Treatment, intervention costs and opportunity costs | QALYs | QALY valuation of change in inequality by comparing the incremental QALYs to the incremental EDE |
| Arnold et al., 2020 | Population of Malawi | Wide range of diseases | 51 interventions from the Malawian Essential Health package | Intervention costs and opportunity costs | DALYs | EDE HALE and Atkinson index |
| Collins et al., 2020 | Population with age 30 to 84 years from Liverpool, England | Cardiovascular disease (screening) | 1) No CVD screening 2) current screening intervention 3) Increased screening intervention 4) Universal plus targeted screening intervention with | Intervention costs and opportunity costs | QALYs | Reduction in slope index of inequality of rates of incremental net |

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| | | | top-up delivery to the most deprived fifth. | | | health benefit per 100,000 person-years. |
| Griffin et al., 2020 | Population from West Yorkshire Yorkshire, England | 1)Coronary heart disease 2) chronic bronchitis 3) asthma 4) low weight births 5) preterm births 6) all-cause mortality | 17 alternative transport emission reduction strategies compared by no intervention | Intervention costs, social care opportunity costs and individual opportunity costs | QALE | EDE QALE |
| Love-Koh et al., 2020 | Smoking population from in England | Smoking related illnesses | 21 behavioural and pharmacological smoking cessation interventions | Health opportunity costs | QALYs | Absolute (Kolm) and relative (Atkinson) EDE health |
| Love-Koh et al., 2021 | 60% of the population in Brazil | Wide range of diseases | 1) no intervention 2) primary care system level intervention (PSF) | Intervention and opportunity costs | DALYs | EDE DALY |
| Olsen et al., 2021 | Children under 5 years of age in Ethiopia | Pneumonia | 1) Baseline sub-national coverage of community based treatment of childhood pneumonia (CCM) 2) scaling up coverage of CCM to 90% coverage in Ethiopia's 11 major regions. | Treatment costs from a providers perspective (divided into patient care costs and overhead costs) | Under 5 mortality rate and average life expectancy at birth | Gini index |
| Quan et al., 2021 | HIV susceptible individuals between 15 and 64 years of age in the United States of America | HIV | 16 evidence based interventions that prevent and target, diagnose and treat HIV. | Intervention costs | QALYs<br><br>ICER (USD per QALY) | Absolute (between group variance)/ relative (Theil index) and index of disparity |