

BMJ Open

BMJ Open is committed to open peer review. As part of this commitment we make the peer review history of every article we publish publicly available.

When an article is published we post the peer reviewers' comments and the authors' responses online. We also post the versions of the paper that were used during peer review. These are the versions that the peer review comments apply to.

The versions of the paper that follow are the versions that were submitted during the peer review process. They are not the versions of record or the final published versions. They should not be cited or distributed as the published version of this manuscript.

BMJ Open is an open access journal and the full, final, typeset and author-corrected version of record of the manuscript is available on our site with no access controls, subscription charges or pay-per-view fees (<http://bmjopen.bmj.com>).

If you have any questions on BMJ Open's open peer review process please email info.bmjopen@bmj.com

BMJ Open

Mapping the progress of achieving equity in health service coverage in Africa: a scoping review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2022-068903
Article Type:	Protocol
Date Submitted by the Author:	06-Oct-2022
Complete List of Authors:	Karamagi, Humphrey Cyprian ; World Health Organization Regional Office for Africa, Ben Charif, Ali; Université Laval, Afriyie, Doris; Swiss Tropical and Public Health Institute, Epidemiology and Public Health; University of Basel, SY, Sokona; World Health Organization Regional Office for Africa, Data, Analytics and Knowledge Management kipruto, Hillary; World Health Organization Regional Office for Africa, Inter-Country Support Team for Eastern & Southern Africa Oyelade, Taiwo; World Health Organization Regional Office for Africa Droti, Benson; World Health Organization Regional Office for Africa
Keywords:	Protocols & guidelines < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, PUBLIC HEALTH, STATISTICS & RESEARCH METHODS

SCHOLARONE™
Manuscripts

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1 Mapping the progress of achieving equity in health service coverage in 2 Africa: a scoping review protocol

3 Humphrey Cyprian KARAMAGI^{1*}, Ali BEN CHARIF², Doris OSEI AFRIYIE³, Sokona
4 SY¹, Hillary Kipchumba KIPRUTO⁴, Oyelade TAIWO⁵, Benson DROTI⁴

6 Institutional addresses

7 ¹Data Analytics and Knowledge Management, World Health Organization (WHO)
8 Regional Office for Africa, Brazzaville, Republic of Congo; ²CubecXpert, Quebec, QC,
9 Canada; ³Department of Epidemiology and Public Health, Swiss Tropical and Public
10 Health Institute, Basel, Switzerland; ⁴Health Information Systems, World Health
11 Organization (WHO) Regional Office for Africa, InterCountry Support team for Eastern
12 and Southern Africa Harare, Zimbabwe; ⁵World Health Organization (WHO) Regional
13 Office for Africa, Brazzaville, Republic of Congo;

16 Email addresses for all authors

17 HKK, kiprutohi@who.int
18 ABC, ali.bencharif@gmail.com
19 DOA, doriso28@gmail.com
20 SS, sys@who.int
21 HCK, karamagih@gmail.com
22 OT, oyeladet@who.int
23 BD, drotib@who.int

25 ***Corresponding author:** Dr. Humphrey Cyprian KARAMAGI

26 World Health Organization (WHO) Regional Office for Africa, Brazzaville, Republic of
27 Congo | karamagih@who.int

29 **Word Count:** 2,753/4,000 words | **Abstract:** 300/300 words | **Figures:** 0 | **Tables:** 1 |

30 **References:** 37.

32 Abstract

33 **Introduction:** Addressing health inequities in health service coverage is a global priority,
34 especially with the resurgence of interest in universal health coverage. However, in
35 Africa, which has the lowest health service coverage index, there is limited information
36 on the progress of countries in addressing health inequalities related to universal health
37 coverage. Thus, we seek to map the evidence on the state of inequality in health service
38 coverage and its constituent components in Africa.

39 **Methods and analysis:** We will conduct a scoping review following the Joanna Briggs
40 Institute (JBI) Manual for Evidence Synthesis. We preregistered this protocol with the
41 Open Science Framework (OSF) on July 26, 2022 (<https://osf.io/zd5bt>). We will consider
42 any empirical research from any study design that assesses health equity in relation to
43 health service coverage in Africa. We will search MEDLINE, Embase, Web of Science,
44 CINAHL, PsycINFO, and Cochrane Library from their inception onwards. We will also
45 hand-search Google and Global Index Medicus, and screen the reference lists of included
46 or relevant studies. We will evaluate studies for eligibility and extract data from included
47 studies using prepiloted and standardized forms. We will further extract a core set of
48 indicators which are disaggregated by different equity stratifiers. We will summarize data
49 using a narrative approach involving thematic syntheses and descriptive statistics. We
50 will report our findings according to the Preferred Reporting Items for Systematic
51 Reviews and Meta-Analysis (PRISMA) extension for Scoping Reviews checklist.

52 **Ethics and dissemination:** Ethical approval is not required as primary data will not be
53 collected. This work will contribute to identifying knowledge gaps in the evidence of
54 equity in health service coverage in Africa, and propose strategies that could help
55 overcome current challenges in universal health coverage. We will disseminate our
56 findings to knowledge users through a publication in a peer-reviewed journal and
57 organization of workshops.

58 **Keywords:** Equity, inequity, inequality, disparities, deprivation, PROGRESS-Plus,
59 universal health coverage, Africa, scoping review.

60 **Strengths and limitations of this study**

- 61 1. Addressing health inequities is a global priority, especially with the resurgence of
62 interest in universal health coverage in Africa
- 63 2. This review will fill an important gap by mapping the evidence that exists on the
64 progress towards equitable service coverage across Africa, a critical component of
65 universal health coverage
- 66 3. This review will highlight key research gaps and data for monitoring inequalities
67 around essential health services in Africa
- 68 4. The identification of literature will be performed using a comprehensive search
69 through searching electronic databases, and-searching relevant websites, and
70 screening reference lists of relevant reports
- 71 5. The search terms for equity will be comprehensive to encompass all the elements
72 of PROGRESS-Plus, but the use of the broader term of universal health coverage
73 may limit the identification of records which focused on specific indicators for
74 universal health coverage

76 Introduction

77 Attainment of good health and well-being has been prioritized as a common goal by
78 African countries, as encapsulated in the third Sustainable Development Goal (SDG 3)
79 established by the United Nations in 2015 [1]. Within the World Health Organization
80 (WHO) Regional Office for Africa, countries have recognized attainment of universal
81 health coverage as a core result needed to attain this goal - together with attainment of
82 good health security, and coverage of health determinants [2,3]. Universal health
83 coverage aims to ensure that all people receive the health services they need, including
84 promotive, preventative, curative, rehabilitative and palliative care which are of sufficient
85 quality while ensuring that individuals do not suffer from financial hardship [4]. The
86 ability to equitably utilize essential services needed without leaving anyone behind is one
87 of the three thrusts of universal health coverage. Equity in service utilization is therefore
88 an integral component of universal health coverage.

89
90 WHO defines health equity as “the absence of unfair and unavoidable or remediable
91 differences in health among population groups defined socially, economically,
92 demographically or geographically” [5]. In principle, health inequities are systematic
93 differences that are socially produced, and put groups disadvantaged already at further
94 disadvantage related to their health [6]. These inequities are considered to be key
95 contributors to the inequalities seen in health outcomes. Monitoring of equalities is
96 therefore considered a vital and pragmatic means to tracking and targeting inequities. The
97 2021 Global Monitoring report on universal health coverage showed that inequalities
98 persist within and across countries [4]. However, consolidated evidence on inequalities,

1
2
3 99 especially across the range of services needed for universal health coverage attainment is
4
5 100 lacking. At present, most evidence is either focused on specific services, or drivers of
6
7 101 inequality. Furthermore, different dimensions of inequality may call for different
8
9
10 102 strategies to address them [7].
11

12
13 103 Health inequalities are multidimensional and complex, with different drivers acting and
14
15 104 interacting with each other and other contextual influences to produce the emergent
16
17 105 effects on essential services utilization. Monitoring the different drivers within a similar
18
19
20 106 framework is therefore crucial. The WHO commission on social determinants of health in
21
22 107 2005 emphasized the role of structural mechanisms that interplay between context, socio-
23
24 108 economic position to generate and reinforce class divisions that define individual
25
26
27 109 socioeconomic position within hierarchies of power, prestige and access to resources [5].
28
29 110 The commission identified the most important stratifiers for equality as income,
30
31 111 education, occupation, social or class, gender, and racial or ethnicity. In sub-Saharan
32
33 112 Africa, other studies have also recognized the need to include historical and cultural
34
35
36 113 context, which underlies causal factors for the social determinants of health in the region
37
38 114 [8,9]. Developing methodological approaches and assessing equitable access to service
39
40
41 115 coverage for the different indicators of universal health coverage, an essential step in
42
43 116 developing interventions to tackle these inequities.
44

45
46 117 Few reviews have specifically examined equity within the universal health coverage
47
48 118 context. One narrative review published in 2014 [10] found that a key area in regards to
49
50
51 119 health equity was access to quality services and specialized clinical services. However,
52
53 120 among the 18 studies and reports included in the review, none of the country or regional
54
55
56
57
58
59
60

1
2
3 121 level articles were from Africa. Other reviews have focused primarily on specific services
4
5 122 such as those for maternal health services [11,12].
6
7

8
9 123 Although health service coverage in sub-Saharan Africa is relatively low compared to
10
11 124 other regions, existing disparities in terms of wealth and education may exacerbate the
12
13 125 extent of service coverage among different populations. In this review, we seek to
14
15 126 consolidate evidence on the state of inequality in the progress towards universal health
16
17 127 coverage service coverage and/or its constituent components in Africa. The specific
18
19 128 objectives of the review are: 1) Map the methodological approaches used in assessing
20
21 129 health inequalities in relation to universal health coverage service coverage or its
22
23 130 constituent components; 2) Characterize the current evidence of progress towards equity
24
25 131 in universal health coverage service coverage or its constituent components; 3) Identify
26
27 132 knowledge gaps in the existing evidence of progress towards equity in service coverage
28
29 133 and propose strategies that could help overcome current challenges; 4) Document
30
31 134 effective strategies been used to tackling the different drivers of inequalities in
32
33 135 contributing to universal health coverage service coverage or its constituent components;
34
35 136 and 5) Identify challenges related to addressing health equities in the region.
36
37
38
39
40
41

42 137 **Methods and analysis**

43 44 45 46 138 **Design**

47
48 139 We will conduct a scoping review following the methodology recommended in the
49
50 140 Joanna Briggs Institute (JBI) Manual for Evidence Synthesis [13]. This methodology is
51
52 141 based on the Arksey and O'Malley framework [14] and an enhanced version developed
53
54 142 by Levac and colleagues [15]. Scoping reviews are defined as “a type of evidence
55
56
57

1
2
3 143 synthesis that aims to systematically identify and map the breadth of evidence available
4
5 144 on a particular topic, field, concept, or issue, often irrespective of source (i.e., primary
6
7 145 research, reviews, non-empirical evidence) within or across particular contexts” [16]. A
8
9
10 146 scoping was selected as we aim to outline the evidence in the area of interest and identify
11
12 147 knowledge gaps. This protocol has been registered with the Open Science Framework
13
14 148 (OSF) on July 26, 2022 (identifier: <https://osf.io/zd5bt>). We will report this review
15
16 149 according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis
17
18 150 (PRISMA) extension for Scoping Reviews (PRISMA-ScR) checklist [17]. In this
19
20 151 protocol, the noun “report” refers to a document (paper or electronic) supplying
21
22 152 information about a study, and the noun “record” refers to the title or abstract of a report
23
24 153 indexed in a database or website [18]. We report the content for this scoping review
25
26 154 protocol using the PRISMA Protocol checklist (**Appendix 1**) [19].

155 **Eligibility criteria**

156 Following the Joanna Briggs Institute Manual for Evidence Synthesis [13], we will use
157 the following eligibility criteria:

- 158 • **Participants:** We will consider any studies involving individuals, communities,
159 or organizations, whose health needs are supposed to be addressed within a
160 specific health system context in Africa. No restrictions based on socio-
161 demographic factors (e.g., sex, age, ethnicity) or health conditions (e.g.
162 comorbidities) will be applied. We will consider any countries or geographic
163 regions in the African continent such as the 47 Member States of the WHO
164 Regional Office for Africa, the Maghreb, and all other African regions. Global
165 studies which include both an African region and other regions from other

1
2
3 166 continents (e.g., Europe, America) will be considered. We will exclude studies
4
5 167 involving only regions or countries outside the African geographic region.
6
7

8
9 168 • **Concept:** We will consider any studies assessing health equity using index (e.g.,
10
11 169 concentration index) or an equity stratifier. By health equity, we mean the absence
12
13 170 of systematic health disparities or differences among different individuals, groups,
14
15 171 communities, or regions that are unfair and avoidable. We will only consider
16
17 172 equity in health care coverage which refers to the access to or use of health
18
19 173 services (i.e., equal treatment for equal need) [20,21]. To identify equity
20
21 174 stratifiers, we will adopt the Cochrane and Campbell Equity Methods group
22
23 175 framework of PROGRESS-Plus (place of residence, race/ethnicity/culture,
24
25 176 occupation, gender, religion, education, socioeconomic status, and social capital).
26
27 177 This framework includes social factors that can influence health disparities and
28
29 178 the “Plus” includes other factors in which health inequalities may exist such as
30
31 179 age, disability, and sexual orientation. Differences in service coverage across the
32
33 180 PROGRESS-Plus will be considered as differences in health equity if studies
34
35 181 provided justification that differences were unfair [22]. We will exclude studies
36
37 182 focusing on equity in health financing or financial protection. However, studies
38
39 183 which assess financial hardship as a driver of inequalities of health service will be
40
41 184 included.
42
43
44
45
46
47

48
49 185 • **Context:** We will consider any studies monitoring progress towards universal
50
51 186 health coverage, which means that all individuals and communities receive the
52
53 187 health services they need. As recommended by the WHO Regional Office for
54
55 188 Africa, we will consider 13 essential health services within three components of
56
57

1
2
3 189 service coverage in: 1) reproductive, maternal, newborn and child health (family
4
5 190 planning, antenatal and delivery care, full child immunization, and health-seeking
6
7
8 191 behaviour for pneumonia), 2) infectious diseases (tuberculosis treatment, HIV
9
10 192 antiretroviral treatment, use of insecticide-treated bed nets for malaria prevention,
11
12 193 adequate sanitation, and neglected tropical diseases treatment and care); and 3)
13
14 194 non-communicable diseases (prevention and treatment of raised blood pressure,
15
16 195 prevention and treatment of raised blood glucose, cervical cancer screening, and
17
18 196 tobacco (non-)smoking) (**Appendix 2**). These health services are included in a
19
20
21 197 framework of indicators developed by WHO and World Bank to track the
22
23 198 progress of universal health coverage. We will consider 12 essential health
24
25 199 services related to access of essential quality health services [23], to which we
26
27 200 will add neglected tropical diseases treatment and care, which is important in the
28
29 201 context of Africa. We will also consider any overall universal health coverage
30
31 202 service coverage index or any universal health coverage service coverage
32
33 203 subindex on those components (e.g., universal health coverage service coverage
34
35 204 subindex on infectious diseases). We will exclude indicators or indices related to
36
37 205 basic hospital access, health worker density, access to essential medicines, or
38
39 206 health security.

- 40
41
42
43
44
45 207 • **Types of sources:** We will consider any empirical studies using qualitative,
46
47 208 quantitative, or mixed methods designs. Knowledge syntheses (e.g., systematic
48
49 209 reviews), experimental, quasi-experimental, and observational designs will be
50
51 210 considered. No restrictions based on language of publication or publication status
52
53 211 will be applied. We excluded any studies published before 2005, when Universal
54
55
56
57
58
59
60

212 Coverage was cited in a World Health Assembly resolution [24]. We will also
 213 exclude any retracted publication, conference abstract, study protocol, and any
 214 editorial material. The latter refers to any report that gives the opinions of a
 215 person, group, or organization (e.g., editorials, commentaries, and letters).

216 In other words, we will consider any empirical research from any study design that
 217 measures health equity in relation to universal health service coverage in Africa (**Table**
 218 **1**).

219 **Table 1. Criteria for considering studies for this review**

Criteria	Inclusion	Exclusion
Type of sources	Empirical studies using a quantitative, qualitative, or mixed methods design and published from 2005: <input type="checkbox"/> Original studies <input type="checkbox"/> Conference articles <input type="checkbox"/> Knowledge syntheses <input type="checkbox"/> Government documents	<input checked="" type="checkbox"/> Editorial materials (e.g., commentary, letter, editorials) <input checked="" type="checkbox"/> Conference abstracts <input checked="" type="checkbox"/> Protocols <input checked="" type="checkbox"/> Retracted publications <input checked="" type="checkbox"/> Records published before 2005
Participants	Individuals, communities, or organizations involved in receipt of health care services within a health system context in Africa	<input checked="" type="checkbox"/> Any countries or regions outside the African geographic region
Concept	Studies focusing on equity in health care services using an index (e.g., concentration index) or one of the following equity stratifier: <input type="checkbox"/> Place of residence (e.g., rural, urban) <input type="checkbox"/> Race, ethnicity, or culture <input type="checkbox"/> Occupation <input type="checkbox"/> Gender or sex <input type="checkbox"/> Religion <input type="checkbox"/> Education <input type="checkbox"/> Socioeconomic status <input type="checkbox"/> Social capital or resources <input type="checkbox"/> Any other factors in which health inequalities may exist (e.g., age, disability, and sexual orientation).	<input checked="" type="checkbox"/> Studies focusing on equity in health financing <input checked="" type="checkbox"/> Studies focusing on equity in financial protection <input checked="" type="checkbox"/> Studies that did not include an equity stratifier
Context	Studies monitoring at least one indicator related to the following 13 essential health services (Appendix 2): <input type="checkbox"/> Family planning <input type="checkbox"/> Antenatal and delivery care <input type="checkbox"/> Child immunization <input type="checkbox"/> Health-seeking behaviour for pneumonia <input type="checkbox"/> Tuberculosis treatment	<input checked="" type="checkbox"/> Studies focusing on basic hospital access <input checked="" type="checkbox"/> Studies focusing on health worker density <input checked="" type="checkbox"/> Studies focusing on access to essential medicines <input checked="" type="checkbox"/> Studies focusing on health security <input checked="" type="checkbox"/> Studies that did not include any of the 13 essential health services

- | |
|--|
| <input type="checkbox"/> Human immunodeficiency virus (HIV) antiretroviral treatment |
| <input type="checkbox"/> Use of insecticide-treated bed nets for malaria prevention |
| <input type="checkbox"/> Adequate sanitation |
| <input type="checkbox"/> Neglected tropical diseases treatment and care |
| <input type="checkbox"/> Prevention and treatment of raised blood pressure |
| <input type="checkbox"/> Prevention and treatment of raised blood glucose |
| <input type="checkbox"/> Cervical cancer screening |
| <input type="checkbox"/> Tobacco (non-)smoking |

220 **Literature search**

221 We will perform a comprehensive search to identify records through both electronic
222 databases and secondary searches using other relevant sources. No restrictions regarding
223 date of publication, language, place of publication, or type of reports will be applied to
224 our search strategy.

225 We will search MEDLINE, Embase, Web of Science, CINAHL, PsycINFO, and the
226 Cochrane Library from their dates of inception onwards. We will perform the preliminary
227 search strategy in Ovid MEDLINE following appropriate design principles [25]. This
228 preliminary search strategy will be reviewed by an information specialist and our core
229 team of international experts in health equity, universal health coverage, health
230 information systems, or knowledge syntheses from Africa. The search terms will be
231 adapted to the above-mentioned databases. The search terms will be based on previous
232 works to reflect three concepts: 1) equity, 2) universal health coverage, and 3) African
233 regions (**Appendix 3**). For equity, we will adapt a validate search filter [26], by adding
234 other terms which are relevant in the African context (e.g., sexual and gender minorities)
235 [27–29]. For universal health coverage, we will use terms integral to universal health
236 coverage that were previously identified with an exploratory search in Google, Google
237 Scholar, and Abstract reviews [30]. For African geographic regions, we will adapt a

1
2
3 238 geographic African filter validated by the South African Cochrane Centre [31], by
4
5 239 correcting the name “Mayotte” and adding other alternative missing African country
6
7 240 names (e.g., “Ruanda”, “Comoros”, and “Cabo Verde”). We will use the list of African
8
9 241 region names used to develop the low- and middle-income countries geographic search
10
11 242 filter by the Cochrane Effective Practice and Organisation of Care (EPOC), in
12
13 243 collaboration with the WHO and Campbell Collaboration [32,33].
14
15
16
17

18 244 In addition, we will identify other relevant articles by hand-searching other relevant
19
20 245 sources and screening reference lists of included or relevant reports. We will search
21
22 246 Google and Global Index Medicus. We will screen at least the first 30 results for each
23
24 247 search, a threshold often used to analyze medical content available on websites. Results
25
26 248 lower down the relevancy lists are often duplications of earlier results and it is rare for
27
28 249 users to click past the third page of ten search results per page [34,35].
29
30
31

32 250 **Selection of sources of evidence**

33
34 251 Following completion of the search, all the records identified from electronic databases
35
36 252 will be exported to EndNote 20, and duplicates will be removed. Screening standardized
37
38 253 forms will be prepared in Google Sheets based on the eligibility criteria and pilot tested
39
40 254 by the entire review team to ensure reliability in accurately selecting eligible records or
41
42 255 reports. As suggested by Joanna Briggs Institute, a random sample of 25 records will be
43
44 256 selected for the pilot test and reviewers will only start screening when 75% or greater
45
46 257 agreement is achieved. We calculated inter-reviewer agreement using the weighted
47
48 258 Cohen’s kappa [36]. One reviewer will screen all remaining records and assess all
49
50 259 potentially relevant reports to identify reports meeting the eligibility criteria. Each record
51
52 260 or report will be screened by one single reviewer using standardized forms in Google
53
54
55
56
57
58
59
60

1
2
3 261 Sheets and checked by another. For each ineligible report, we will document a reason for
4
5 262 the exclusion. Any discrepancies will be resolved through consensus or with a third
6
7
8 263 reviewer.

10 264 **Data charting process**

11
12
13 265 We will develop a form in Google sheets in consultation with the core team to guide
14
15 266 extraction of variables. Two reviewers will independently perform a pilot test of the form
16
17 267 to ensure the form captures relevant data. We will extract the following information:
18
19 268 study characteristics (e.g., title, authors, and year of publication); participants (e.g., all
20
21 269 age groups, pregnant mothers, children under five, adults, and seniors); context (e.g.,
22
23 270 name of countries), equity dimensions (e.g., PROGRESS-Plus elements); and
24
25 271 methodological approach used to measure equality (e.g., indices). In addition, study
26
27 272 findings will be charted against the universal health service coverage indicators. Full
28
29 273 charting will be completed by one reviewer and checked by another. Any discrepancies
30
31 274 between reviewers will be resolved by discussion or with a third reviewer.
32
33
34
35
36
37

38 275 **Critical appraisal**

39
40 276 Due to the nature of our research question, we will not perform an appraisal for risk of
41
42 277 bias or conduct quality assessment. This is consistent with the Joanna Briggs Institute
43
44 278 Manual for Evidence Synthesis [13].
45
46

47 279 **Synthesis of results**

48
49
50 280 We will use both qualitative and quantitative methods to analyze the data generated. We
51
52 281 will analyze and present a descriptive summary of characteristics of included studies
53
54 282 along with an explanatory narrative [15]. Studies will also be mapped against the
55
56
57

1
2
3 283 appropriate universal health coverage service indicators and PROGRESS-Plus elements.
4
5 284 In addition, the study findings and discussions will be analyzed using content analysis to
6
7
8 285 develop codes and themes that emerge from the data. We will use the PRISMA 2020
9
10 286 flowchart to describe the process of report selection [18].
11
12

13 287 **Patient, public, or knowledge user involvement**

14
15 288 Patients, and the public will not be involved in the design, conduct, or parting of this
16
17 289 scoping review. However, we will use an integrated knowledge translation approach,
18
19 290 where policy makers, clinicians, researchers, and trainees co-create research to ensure
20
21 291 that it is relevant and useful to knowledge users and will increase the likelihood of uptake
22
23 292 [37]. This will involve extensive participation of female and male international experts
24
25 293 from Africa as equal members of the core team. Team members will meet weekly to
26
27 294 discuss the progress of work during the current week. We will use a virtual teamwork
28
29 295 space using Google Drive and communicate using Microsoft Teams. We will also
30
31 296 conduct multidisciplinary consultations with colleagues from the WHO Regional Office
32
33 297 for Africa to receive theoretical, conceptual, or practical insights for guiding the
34
35 298 interpretation and dissemination of findings.
36
37
38
39
40

41 299 **Discussion**

42
43
44
45 300 This scoping review seeks to map the evidence on the state of inequality in the progress
46
47 301 towards universal health service coverage and its constituent components in Africa. It
48
49 302 will fill an important gap by providing a comprehensive body of evidence that exists on
50
51 303 the progress towards equity in universal health coverage across Africa. First, it will be
52
53 304 possible to map the evidence of equitable realization of coverage for the broad range of
54
55
56
57
58
59
60

1
2
3 305 essential services under universal health coverage across several dimensions of
4
5 306 inequalities. Second, it will be able to highlight the barriers and opportunities of
6
7 307 addressing effectively the drivers of health inequalities in Africa. Thirdly, it will be
8
9
10 308 possible to demonstrate which methodological approaches are appropriate for measuring
11
12 309 health inequalities in the African context. Lastly, it will highlight which essential services
13
14 310 and its relevant dimensions of inequalities that have been under-researched in the
15
16
17 311 literature, and may need future investigations. Thus, this review will make a critical
18
19 312 contribution to monitoring equity in universal health coverage by promoting learning and
20
21 313 building the evidence for investments in effective strategies to reduce health equities in
22
23
24 314 Africa.

27 315 **Ethics and dissemination**

28
29
30
31 316 This scoping review will involve neither human participants nor unpublished secondary
32
33 317 data. As such, formal ethical approval from a research ethics committee is not required.
34
35 318 We will disseminate our results through publications in peer-reviewed journals, and a
36
37
38 319 technical report for the WHO Regional Office for Africa. We will also share our reports
39
40 320 using free public repositories such as Open Science Framework and ResearchGate.
41
42
43
44 321
45
46 322
47
48
49
50
51
52
53
54
55
56
57
58
59
60

323 List of abbreviations

324 **PRISMA:** Preferred Reporting Items for Systematic Reviews and Meta-Analysis;

325 **PRISMA-ScR:** PRISMA extension for Scoping Reviews;

326 **PROGRESS:** Place of residence, Race/ethnicity/culture, Occupation, Gender, Religion,
327 Education, Socioeconomic status, and Social capital)

328 **WHO:** World Health Organization;

329

330 Declarations

331 **Ethics approval and consent to participate**

332 Not applicable.

333

334 **Consent for publication**

335 Not applicable.

336

337 **Availability of data and materials**

338 Please send all requests for study data or materials to Dr. Humphrey Cyprian

339 KARAMAGI (karamagih@who.int).

340

341 **Competing interests**

342 Authors declare that they have no competing interests.

343 **Funding**

344 No direct funding was provided.

345

346 **Authors' contributions**

347 The World Health Organization (WHO) Regional Office for Africa participated in the
348 conception of the idea of this knowledge synthesis (HCK, SS, HKK, OT, and BD). HCK,
349 ABC, DOA, SS, and HKK participated in the design of this protocol. ABC drafted the
350 search strategy and all authors revised it. ABC and DOA drafted this protocol. All
351 authors revised the manuscript critically for important intellectual content, gave final
352 approval of the version to be published and agreed to be accountable for all aspects of the
353 knowledge synthesis.

354

355 **Acknowledgements**

356 We wish to acknowledge the World Health Organization (WHO) Regional Office for
357 Africa for their assistance with various aspects of this work.

358

References

- 1 General Assembly. Resolution adopted by the General Assembly on 11 September 2015. New York: : United Nations 2015.
- 2 Karamagi HC, Tumusiime P, Titi-Ofei R, *et al.* Towards universal health coverage in the WHO African Region: assessing health system functionality, incorporating lessons from COVID-19. *BMJ Global Health* 2021;**6**:e004618. doi:10.1136/bmjgh-2020-004618
- 3 Karamagi HC, Ben Charif A, Kidane SN, *et al.* Investments for effective functionality of health systems towards Universal Health Coverage in Africa: A scoping review. *PLOS Global Public Health* 2022;**2**:e0001076. doi:10.1371/journal.pgph.0001076
- 4 World Health Organization, World Bank. Tracking Universal Health Coverage: 2021 Global Monitoring Report. Washington, DC: : World Bank 2021. <https://openknowledge.worldbank.org/handle/10986/36724> (accessed 5 Jul 2022).
- 5 World Health Organization. A conceptual framework for action on the social determinants of health. World Health Organization 2010. <https://apps.who.int/iris/handle/10665/44489> (accessed 5 Jul 2022).
- 6 Braveman P, Gruskin S. Defining equity in health. *J Epidemiol Community Health* 2003;**57**:254–8. doi:10.1136/jech.57.4.254
- 7 Hosseinpoor AR, Bergen N, Koller T, *et al.* Equity-Oriented Monitoring in the Context of Universal Health Coverage. *PLOS Medicine* 2014;**11**:e1001727. doi:10.1371/journal.pmed.1001727
- 8 Eshetu E, Woldesenbet S. Are there particular social determinants of health for the world's poorest countries? *Afr Health Sci* 2011;**11**:108–15.
- 9 Ichoku HE, Mooney G, Ataguba JE-O. Africanizing the social determinants of health: embedded structural inequalities and current health outcomes in sub-Saharan Africa. *Int J Health Serv* 2013;**43**:745–59. doi:10.2190/HS.43.4.i
- 10 Rodney AM, Hill PS. Achieving equity within universal health coverage: a narrative review of progress and resources for measuring success. *International Journal for Equity in Health* 2014;**13**:72. doi:10.1186/s12939-014-0072-8
- 11 Çalışkan Z, Kılıç D, Öztürk S, *et al.* Equity in maternal health care service utilization: a systematic review for developing countries. *Int J Public Health* 2015;**60**:815–25. doi:10.1007/s00038-015-0711-x
- 12 Målqvist M, Yuan B, Trygg N, *et al.* Targeted Interventions for Improved Equity in Maternal and Child Health in Low- and Middle-Income Settings: A Systematic

- 1
2
3 394 Review and Meta-Analysis. *PLOS ONE* 2013;**8**:e66453.
4 395 doi:10.1371/journal.pone.0066453
5
6 396 13 Peters M, Godfrey C, McInerney P, *et al.* Chapter 11: Scoping Reviews. In:
7 397 Aromataris E, Munn Z, eds. *JBIM Manual for Evidence Synthesis*. JBI 2020.
8 398 doi:10.46658/JBIMES-20-12
9
10
11 399 14 Arksey H, O'Malley L. Scoping studies: towards a methodological framework.
12 400 *International Journal of Social Research Methodology* 2005;**8**:19–32.
13 401 doi:10.1080/1364557032000119616
14
15 402 15 Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology.
16 403 *Implementation Science* 2010;**5**:69. doi:10.1186/1748-5908-5-69
17
18 404 16 Munn Z, Pollock D, Khalil H, *et al.* What are scoping reviews? Providing a formal
19 405 definition of scoping reviews as a type of evidence synthesis. *JBIM Evidence Synthesis*
20 406 2022;**20**:950–2. doi:10.11124/JBIES-21-00483
21
22
23 407 17 Tricco AC, Lillie E, Zarin W, *et al.* PRISMA Extension for Scoping Reviews
24 408 (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med* 2018;**169**:467–73.
25 409 doi:10.7326/M18-0850
26
27
28 410 18 Page MJ, McKenzie JE, Bossuyt PM, *et al.* The PRISMA 2020 statement: an updated
29 411 guideline for reporting systematic reviews. *BMJ* 2021;**372**:n71. doi:10.1136/bmj.n71
30
31 412 19 Moher D, Shamseer L, Clarke M, *et al.* Preferred reporting items for systematic
32 413 review and meta-analysis protocols (PRISMA-P) 2015 statement. *Syst Rev* 2015;**4**:1.
33 414 doi:10.1186/2046-4053-4-1
34
35 415 20 Cohen AB, Grogan CM, Horwitt JN. The Many Roads toward Achieving Health
36 416 Equity. *Journal of Health Politics, Policy and Law* 2017;**42**:739–48.
37 417 doi:10.1215/03616878-3940414
38
39
40 418 21 Paul E, Deville C, Bodson O, *et al.* How is equity approached in universal health
41 419 coverage? An analysis of global and country policy documents in Benin and Senegal.
42 420 *International Journal for Equity in Health* 2019;**18**:195. doi:10.1186/s12939-019-
43 421 1089-9
44
45 422 22 Cochrane Methods Equity. PROGRESS-Plus.
46 423 <https://methods.cochrane.org/equity/projects/evidence-equity/progress-plus> (accessed
47 424 18 Jul 2022).
48
49
50 425 23 World Health Organization (WHO). Universal health coverage (UHC).
51 426 [https://www.who.int/news-room/fact-sheets/detail/universal-health-coverage-\(uhc\)](https://www.who.int/news-room/fact-sheets/detail/universal-health-coverage-(uhc))
52 427 (accessed 12 Sep 2022).
53
54 428 24 World Health Assembly 58. Social health insurance: sustainable health financing,
55 429 universal coverage and social health insurance: report by the Secretariat. World

- 1
2
3 430 Health Organization 2005. <https://apps.who.int/iris/handle/10665/20302> (accessed 3
4 431 Aug 2022).
- 5
6 432 25 MacFarlane A, Russell-Rose T, Shokraneh F. Search strategy formulation for
7 433 systematic reviews: Issues, challenges and opportunities. *Intelligent Systems with*
8 434 *Applications* 2022;**15**:200091. doi:10.1016/j.iswa.2022.200091
- 9
10
11 435 26 Hosking J, Macmillan A, Jones R, *et al*. Searching for health equity: validation of a
12 436 search filter for ethnic and socioeconomic inequalities in transport. *Systematic*
13 437 *Reviews* 2019;**8**:94. doi:10.1186/s13643-019-1009-5
- 14
15 438 27 Parker R, Wanner A, Foster M, *et al*. Design and validation of a search filter for
16 439 LGBTQ+ populations. In: *25th Cochrane Colloquium*. Edinburgh, UK: 2018. 16–
17 440 8.<https://doi.org/10.1002/14651858.CD201801>
- 18
19
20 441 28 Rizvi A, Lawson DO, Young T, *et al*. Guidance relevant to the reporting of health
21 442 equity in observational research: a scoping review protocol. *BMJ Open*
22 443 2022;**12**:e056875. doi:10.1136/bmjopen-2021-056875
- 23
24 444 29 Prady SL, Uphoff EP, Power M, *et al*. Development and validation of a search filter
25 445 to identify equity-focused studies: reducing the number needed to screen. *BMC*
26 446 *Medical Research Methodology* 2018;**18**:106. doi:10.1186/s12874-018-0567-x
- 27
28
29 447 30 Rizvi SS, Douglas R, Williams OD, *et al*. The political economy of universal health
30 448 coverage: a systematic narrative review. *Health Policy and Planning* 2020;**35**:364–
31 449 72. doi:10.1093/heapol/czz171
- 32
33 450 31 Pienaar E, Grobler L, Busgeeth K, *et al*. Developing a geographic search filter to
34 451 identify randomised controlled trials in Africa: finding the optimal balance between
35 452 sensitivity and precision. *Health Info Libr J* 2011;**28**:210–5. doi:10.1111/j.1471-
36 453 1842.2011.00936.x
- 37
38
39 454 32 Cochrane Effective Practice and Organisation of Care (EPOC). Low- and middle-
40 455 income country (LMIC) filters. 2020.<https://epoc.cochrane.org/lmic-filters> (accessed
41 456 25 Nov 2021).
- 42
43 457 33 Sutton A, Campbell F. The ScHARR LMIC filter: Adapting a low- and middle-
44 458 income countries geographic search filter to identify studies on preterm birth
45 459 prevention and management. *Res Synth Methods* 2022;**13**:447–56.
46 460 doi:10.1002/jrsm.1552
- 47
48
49 461 34 Hargrave DR, Hargrave UA, Bouffet E. Quality of health information on the Internet
50 462 in pediatric neuro-oncology. *Neuro-oncol* 2006;**8**:175–82. doi:10.1215/15228517-
51 463 2005-008
- 52
53 464 35 van der Marel S, Duijvestein M, Hardwick JC, *et al*. Quality of web-based
54 465 information on inflammatory bowel diseases. *Inflamm Bowel Dis* 2009;**15**:1891–6.
55 466 doi:10.1002/ibd.20976

- 1
2
3 467 36 Cohen J. Weighted kappa: Nominal scale agreement provision for scaled
4 468 disagreement or partial credit. *Psychological Bulletin* 1968;**70**:213–20.
5 469 doi:10.1037/h0026256
6
7
8 470 37 Canadian Institutes of Health Research (CIHR). Guide to Knowledge Translation
9 471 Planning at CIHR: Integrated and End-of-Grant Approaches. 2012.[http://www.cihr-](http://www.cihr-irsc.gc.ca/e/45321.html#a5)
10 472 [irsc.gc.ca/e/45321.html#a5](http://www.cihr-irsc.gc.ca/e/45321.html#a5) (accessed 28 Feb 2018).
11
12 473
13 474
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

For peer review only

1
2
3
4 475 **Tables**

5
6 476 **Table 1.** Criteria for considering studies for this review

7
8 477

9
10 478 **Additional files**

11
12 479 **Appendix 1.** The the Preferred Reporting Items for Systematic Reviews and Meta-
13
14 480 Analysis Protocol (PRISMA-P) checklist

15
16 481 **Appendix 2.** Health service coverage indicators to be included for measuring progress
17
18 482 towards universal health coverage in this review

19
20 483 **Appendix 3.** Search strategy for Ovid MEDLINE

21
22 484

23
24 485
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to *Systematic Reviews* from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 4:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	<input type="checkbox"/>	<input type="checkbox"/>	Not applicable
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	<input checked="" type="checkbox"/>	<input type="checkbox"/>	41
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6-27
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	345-352
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	<input type="checkbox"/>	<input type="checkbox"/>	Not applicable
Support					
Sources	5a	Indicate sources of financial or other support for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	342-343
Sponsor	5b	Provide name for the review funder and/or sponsor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	342-343
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	342-343
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	<input checked="" type="checkbox"/>	<input type="checkbox"/>	76-125
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	125-136

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
METHODS					
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	155-218
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	219-248
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	219-248
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	138-262
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	249-262
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	263-273
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	263-273
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	263-273
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	274-277
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	278-286
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I^2 , Kendall's tau)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	278-286
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	278-286
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	<input checked="" type="checkbox"/>	<input type="checkbox"/>	278-286

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	274-286
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	278-286

For peer review only

Appendix 2: Health service coverage indicators to be included for measuring progress towards universal health coverage in this review

Indicators for measuring progress towards reproductive, maternal, newborn and child health (RMNCH)
1. Family planning (e.g., proportion of births attended by skilled health personnel, demand satisfied with modern contraception methods in women aged 15-49 years)
2. Antenatal and delivery care (e.g., proportion of visits)
3. Child immunization (e.g., proportion of children aged 1 year who have received three doses of diphtheria, tetanus, and pertussis vaccine (DPT3), measles vaccine, or bacille Calmette-Guérin (BCG) vaccine)
4. Health-seeking behaviour for pneumonia (e.g., proportion of children with suspected pneumonia who have sought care, proportion of children with oral rehydration therapy for diarrheal diseases, proportion of children who were breastfed within the first hour of birth)
Indicators for measuring progress towards infectious diseases
5. Tuberculosis treatment (e.g., proportion of people who received effective tuberculosis treatment)
6. Human immunodeficiency virus (HIV) antiretroviral treatment (e.g., proportion of people with HIV receiving antiretroviral treatment)
7. Use of insecticide-treated bed nets for malaria prevention (e.g., proportion of households receiving insecticide-treated bed nets, percentage of people sleeping under insecticide-treated nets)
8. Adequate sanitation (e.g., proportion of rural hospitals with basic sanitation)
9. Neglected tropical diseases treatment and care (e.g., number of people required treatment for any of the neglected tropical diseases). Neglected tropical diseases are a diverse group of 20 conditions including: Buruli ulcer, Chagas disease, dengue and chikungunya, dracunculiasis (Guinea-worm disease), echinococcosis, foodborne trematodiasis, human African trypanosomiasis (sleeping sickness), leishmaniasis, leprosy (Hansen's disease), lymphatic filariasis, mycetoma, chromoblastomycosis and other deep mycoses, onchocerciasis (river blindness), rabies, scabies and other ectoparasitoses, schistosomiasis, soil-transmitted helminthiasis, snakebite envenoming, taeniasis/cysticercosis, trachoma, and yaws and other endemic treponematoses.
Indicators for measuring progress towards non-communicable diseases
10. Prevention and treatment of raised blood pressure (e.g., prevalence of raised blood pressure regardless of treatment status)
11. Prevention and treatment of raised blood glucose (e.g., mean fasting plasma glucose)
12. Cervical cancer screening (e.g., prevalence of cervical cancer screening at aged 30-49)
13. Tobacco (non-)smoking (e.g., prevalence of tobacco use among adults aged at least 15 years)

Appendix 3. Search strategy for Ovid MEDLINE

MEDLINE via Ovid (searched on August 29, 2022; Period: 1946 - August 26, 2022)

Concept		Keyword	umber	Result
Equity	Controlled Vocabulary	exp "gender identity"/ or exp "sexual and gender minorities"/ or exp "disabled persons"/ or exp geriatrics/ or "health equity"/ or "health inequities"/ or "healthcare disparities"/ or "health status disparities"/ or "health services accessibility"/ or "sex factors"/ or women/ or men/ or "residence characteristics"/ or "urban population"/ or "rural population"/ or "cultural characteristics"/ or "cultural diversity"/ or religion/ or "social discrimination"/ or "socioeconomic factors"/ or "vulnerable populations"/ or "social class"/ or "minority groups"/ or "ethnic and racial minorities"/ or "educational status"/ or unemployment/	1	884,458
	Free Text	(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) adj3 (availabl* or access*)) or (gender adj (difference? or identit* or role?)) or (sex adj (disparit* or difference? or role?)) or ((wom#n* or m#n*) adj role?) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) adj3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health adj3 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level?" or "level? of education" or "educational attainment" or ((well or better or higher or worse or less) adj (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off").ti,ab,kw,kf	2	1,197,912
	All	1 or 2	3	1,739,958
Universal health coverage	Controlled Vocabulary	"universal health care"/	4	243
	Free Text	(UHC or (universal adj2 (coverage or health* or care or access))).ti,ab,kw,kf	5	12,120
	All	4 or 5	6	12,186
Africa	Controlled Vocabulary	exp africa/ not ("guinea pig" or "guinea pigs" or "aspergillus niger").ti,ab,kw,kf,cp,in	7	308,111
	Free Text	((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")).ti,ab,kw,kf,cp,in	8	885,575
	All	7 or 8	9	921,268
Total result		3 AND 6 AND 9	10	1,924

Embase via Elsevier (searched on August 29, 2022)

Concept		Keyword	umber	Result
Equity	Controlled Vocabulary	'gender identity'/exp or 'sexual and gender minority'/exp or 'disabled person'/exp or 'disabled person'/exp or 'health equity'/de or 'health disparity'/de or 'health care access'/de or 'health care availability'/de or 'sex difference'/de or 'female'/de or 'male'/de or 'residence characteristics'/de or 'urban population'/de or 'rural population'/de or 'cultural factor'/de or 'cultural diversity'/de or 'religion'/de or 'social discrimination'/de or 'socioeconomics'/de or 'vulnerable population'/de or 'disadvantaged population'/de or 'social class'/de or 'minority group'/de or 'ethnic group'/de or 'educational status'/de or 'unemployment'/de	#1	15,833,425
	Free Text	(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) NEAR/3 (availabl* or access*)) or (gender NEXT/1 (difference\$ or identit* or role\$)) or (sex NEXT/1 (disparit* or difference\$ or role\$)) or ((wom?n* or m?n*) NEXT/1 role\$) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) NEAR/3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health NEAR/3 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level\$" or "level\$ of education" or "educational attainment" or ((well or better or higher or worse or less) NEXT/1 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off"):ti,ab,kw	#2	1,527,2697
	All	1 or 2	#3	16,237,327
Universal health coverage	Controlled Vocabulary	'universal health care'/de	#4	600
	Free Text	(UHC or (universal NEAR/2 (coverage or health* or care or access))):ti,ab,kw	#5	14,728
	All	4 or 5	#6	14,913
Africa	Controlled Vocabulary	'africa'/exp not ("guinea pig" or "guinea pigs" or "aspergillus niger"):ti,ab,kw,ca,ad,ff	#7	397,519
	Free Text	((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'Ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")):ti,ab,kw,ca,ad,ff	#8	859,620
	All	7 or 8	#9	960,563
Total result		#3 AND #6 AND #9	#10	2,586

Web of Science (searched on August 29, 2022)

Concept	Free Text	Keyword	umber	Result
Equity	Free Text	TS=(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) NEAR/2 (availabl* or access*)) or (gender NEAR/0 (difference\$ or identit* or role\$)) or (sex NEAR/0 (disparit* or difference\$ or role\$)) or ((wom?n* or man* or men*) NEAR/0 role\$) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) NEAR/2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health NEAR/2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level\$" or "level\$ of education" or "educational attainment" or ((well or better or higher or worse or less) NEAR/0 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off")	#1	3,056,690
Universal health coverage	Free Text	TS=(UHC or (universal NEAR/1 (coverage or health* or care or access)))	#2	15,460
Africa	Free Text	TS=((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'Ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) or CU=((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'Ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) or OG=((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'Ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi	#3	2,204,863

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

		or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger"))		
Total result	#1 AND #2 AND #3		#4	2,145

For peer review only

CINAHL via EBSCOhost (searched on August 19, 2022)

Concept		Keyword	umber	Result
Equity	Controlled Vocabulary	(MH "gender identity+") or (MH "sexual and gender minorities+") or (MH "persons with disabilities+") or (MH "geriatrics+") or (MH "health inequities") or (MH "healthcare disparities") or (MH "health status disparities") or (MH "health services accessibility") or (MH "sex factors") or (MH "women") or (MH "men") or (MH "residence characteristics") or (MH "urban population") or (MH "rural population") or (MH "cultural diversity") or (MH "religion and religions") or (MH "discrimination") or (MH "socioeconomic factors") or (MH "special populations") or (MH "social class") or (MH "minority groups") or (MH "ethnic groups") or (MH "educational status") or (MH "unemployment")	S1	544,616
	Free Text	TI (equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) N2 (availabl* or access*)) or (gender W1 (difference# or identit* or role#)) or (sex W1 (disparit* or difference# or role#)) or ((wom?n* or m?n*) W1 role#) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) N2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health N2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level#" or "level# of education" or "educational attainment" or ((well or better or higher or worse or less) W1 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off") OR AB (equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) N2 (availabl* or access*)) or (gender W1 (difference# or identit* or role#)) or (sex W1 (disparit* or difference# or role#)) or ((wom?n* or m?n*) W1 role#) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) N2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health N2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level#" or "level# of education" or "educational attainment" or ((well or better or higher or worse or less) W1 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off") OR SU (equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) N2 (availabl* or access*)) or (gender W1 (difference# or identit* or role#)) or (sex W1 (disparit* or difference# or role#)) or ((wom?n* or m?n*) W1 role#) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) N2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health N2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level#" or "level# of education" or "educational attainment" or ((well or better or higher or worse or less) W1 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off")	S2	654,635
	All	S1 or S2	S3	874,600
	Universal health coverage	Controlled Vocabulary	MH "universal health care"	S4
	Free Text	TI (UHC or (universal N1 (coverage or health* or care or access))) OR AB (UHC or (universal N1 (coverage or health* or care or access))) OR SU (UHC or (universal N1 (coverage or health* or care or access)))	S5	6,489
	All	S4 or S5	S6	6,489

Africa	Controlled Vocabulary	(MH "africa+") not (TI ("guinea pig" or "guinea pigs" or "aspergillus niger") OR AB ("guinea pig" or "guinea pigs" or "aspergillus niger") OR SU ("guinea pig" or "guinea pigs" or "aspergillus niger") OR AF ("guinea pig" or "guinea pigs" or "aspergillus niger"))	S7	96,591
	Free Text	<p>TI ((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) OR</p> <p>AB ((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) OR</p> <p>SU ((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) OR</p> <p>AF ((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or</p>	S8	210,457

		namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger"))		
	All	S7 or S8	S9	210,575
Total result		S3 AND S6 AND S9	S10	899

For peer review only

PsycINFO via Ovid (searched on August 29, 2022; Period: 1806 - August Week 3, 2022)

Concept		Keyword	umber	Result
Equity	Controlled Vocabulary	exp "gender identity"/ or exp "sexual minority groups"/ or exp disabilities/ or exp geriatrics/ or equity/ or "healthcare disparities"/ or "health care access"/ or "human sex differences"/ or "human females"/ or "human males"/ or neighborhoods/ or ghettos/ or poverty areas/ or "rural environments"/ or "urban environments"/ or "minority groups"/ or "racial and ethnic differences"/ or "sociocultural factors"/ or "cross cultural differences"/ or "cultural identity"/ or "ethnic identity"/ or religion/ or "religious groups"/ or "social discrimination"/ or "socioeconomic factors"/ or "socioeconomic status"/ or "economic inequality"/ or "susceptibility (disorders)"/ or "at risk populations"/ or "social class"/ or disadvantaged/ or "educational attainment level"/ or unemployment/	1	619,023
	Free Text	(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) adj3 (availabl* or access*)) or (gender adj (difference? or identit* or role?)) or (sex adj (disparit* or difference? or role?)) or ((wom#n* or m#n*) adj role?) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) adj3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*) or (health adj3 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level?" or "level? of education" or "educational attainment" or ((well or better or higher or worse or less) adj (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off").ti,ab,id.	2	698,649
	All	1 or 2	3	1,036,490
Universal health coverage	Free Text	(UHC or (universal adj2 (coverage or health* or care or access))).ti,ab,id.	4	1,840
Africa	Free Text	((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiriya or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")).ti,ab,id,in	5	141,449
Total result		3 AND 4 AND 5	6	168

Cochrane Library (searched on August 29, 2022)

Concept		Keyword	umber	Result
Equity	Controlled Vocabulary	[mh "gender identity"] or [mh "sexual and gender minorities"] or [mh "disabled persons"] or [mh "geriatrics"] or [mh ^"health equity"] or [mh ^"health inequities"] or [mh ^"healthcare disparities"] or [mh ^"health status disparities"] or [mh ^"health services accessibility"] or [mh ^"sex factors"] or [mh ^"women"] or [mh ^"men"] or [mh ^"residence characteristics"] or [mh ^"urban population"] or [mh ^"rural population"] or [mh ^"cultural characteristics"] or [mh ^"cultural diversity"] or [mh ^"religion"] or [mh ^"social discrimination"] or [mh ^"socioeconomic factors"] or [mh ^"vulnerable populations"] or [mh ^"social class"] or [mh ^"minority groups"] or [mh ^"ethnic and racial minorities"] or [mh ^"educational status"] or [mh ^"unemployment"]	#1	18,168
	Free Text	(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) NEAR/2 (availabl* or access*)) or (gender NEXT (difference? or identit* or role?)) or (sex NEXT (disparit* or difference? or role?)) or ((wom?n* or m?n*) NEXT role?) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) NEAR/2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health NEAR/2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level?" or "level? of education" or "educational attainment" or ((well or better or higher or worse or less) NEXT (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off"):ti,ab,kw	#2	79,541
	All	#1 or #2	#3	87,932
Universal health coverage	Controlled Vocabulary	[mh ^"universal health care"]	#4	0
	Free Text	(UHC or (universal NEAR/1 (coverage or health* or care or access))):ti,ab,kw	#5	306
	All	#4 or #5	#6	306
Africa	Controlled Vocabulary	[mh "africa"] not ("guinea pig" or "guinea pigs" or "aspergillus niger"):ti,ab,kw	#7	8,273
	Free Text	((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")):ti,ab,kw	#8	34,555
	All	#7 or #8	#9	34,555
Total result		#3 AND #6 AND #9	#10	56

BMJ Open

Mapping health service coverage inequalities in Africa: a scoping review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2022-068903.R1
Article Type:	Protocol
Date Submitted by the Author:	01-Mar-2023
Complete List of Authors:	Karamagi, Humphrey Cyprian ; World Health Organization Regional Office for Africa, Ben Charif, Ali; Université Laval, Afriyie, Doris; Swiss Tropical and Public Health Institute, Epidemiology and Public Health; University of Basel, SY, Sokona; World Health Organization Regional Office for Africa, Data, Analytics and Knowledge Management kipruto, Hillary; World Health Organization Regional Office for Africa, Inter-Country Support Team for Eastern & Southern Africa Oyelade, Taiwo; World Health Organization Regional Office for Africa Droti, Benson; World Health Organization Regional Office for Africa
Primary Subject Heading:	Qualitative research
Secondary Subject Heading:	Health services research
Keywords:	Protocols & guidelines < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, PUBLIC HEALTH, Health Equity

SCHOLARONE™
Manuscripts

1
2
3 **1 Mapping health service coverage inequalities in Africa: a scoping review**
4 **2 protocol**

5
6
7
8 3 Humphrey Cyprian KARAMAGI^{1*}, Ali BEN CHARIF², Doris OSEI AFRIYIE³, Sokona
9 4 SY¹, Hillary Kipchumba KIPRUTO⁴, Taiwo OYELADE⁵, Benson DROTI⁴

10
11
12
13 **6 Institutional addresses**

14
15 7 ¹Data Analytics and Knowledge Management, World Health Organization (WHO)
16 8 Regional Office for Africa, Brazzaville, Republic of Congo; ²CubecXpert, Quebec City,
17 9 QC, Canada; ³Department of Epidemiology and Public Health, Swiss Tropical and Public
18 10 Health Institute, Basel, Switzerland; ⁴Health Information Systems, World Health
19 11 Organization (WHO) Regional Office for Africa, InterCountry Support team for Eastern
20 12 and Southern Africa Harare, Zimbabwe; ⁵World Health Organization (WHO) Regional
21 13 Office for Africa, Brazzaville, Republic of Congo;

22
23
24
25
26
27
28
29
30
31 **16 Email addresses for all authors**

32 17 HCK, karamagih@gmail.com
33 18 ABC, ali.bencharif@cubecxpert.ca
34 19 DOA, doriso28@gmail.com
35 20 SS, sys@who.int
36 21 HKK, kiprutohi@who.int
37 22 TO, oyeladet@who.int
38 23 BD, drotib@who.int

39
40
41
42
43 25 ***Corresponding author:** Dr. Humphrey Cyprian KARAMAGI
44 26 World Health Organization (WHO) Regional Office for Africa, Brazzaville, Republic of
45 27 Congo | karamagih@gmail.com

46
47
48
49
50 29 **Word Count:** 2,392/4,000 words | **Abstract:** 300/300 words | **Figures:** 0 | **Tables:** 1 |

51 30 **References:** 37.

52
53
54 31

32 Abstract

33 **Introduction:** Addressing inequities in health service coverage is a global priority,
34 especially with the resurgence of interest in universal health coverage. However, in
35 Africa, which has the lowest health service coverage index, there is limited information
36 on the progress of countries in addressing inequalities related to health services. Thus, we
37 seek to map the evidence on inequalities in health service coverage in Africa.

38 **Methods and analysis:** We will conduct a scoping review following the Joanna Briggs
39 Institute (JBI) Manual for Evidence Synthesis. We preregistered this protocol with the
40 Open Science Framework on July 26, 2022 (<https://osf.io/zd5bt>). We will consider any
41 empirical research that assesses inequalities in relation to services for reproductive,
42 maternal, newborn and child health (e.g., family planning), infectious diseases (e.g.,
43 tuberculosis treatment), and non-communicable diseases (e.g., cervical cancer screening)
44 in Africa. We will search MEDLINE, Embase, Web of Science, CINAHL, PsycINFO,
45 and Cochrane Library from their inception onwards. We will also hand-search Google
46 and Global Index Medicus, and screen reference lists of relevant studies. We will
47 evaluate studies for eligibility and extract data from included studies using pre-piloted
48 and standardized forms. We will further extract a core set of health service coverage
49 indicators, which are disaggregated by PROGRESS-Plus equity stratifiers. We will
50 summarize data using a narrative approach involving thematic syntheses and descriptive
51 statistics. We will report our findings according to the Preferred Reporting Items for
52 Systematic Reviews and Meta-Analysis (PRISMA) extension for Scoping Reviews
53 checklist.

54 **Ethics and dissemination:** Ethical approval is not required as primary data will not be
55 collected. This work will contribute to identifying knowledge gaps in the evidence of
56 inequalities in health service coverage in Africa, and propose strategies that could help
57 overcome current challenges. We will disseminate our findings to knowledge users
58 through a publication in a peer-reviewed journal and organization of workshops.

59 **Keywords:** Inequality, equality, equity, inequity, disparity, deprivation, PROGRESS-
60 Plus, universal health coverage, Africa, scoping review.

61 **Strengths and limitations of this study**

- 62 1. This scoping review will follow the Joanna Briggs Institute (JBI) Manual for
63 Evidence Synthesis.
- 64 2. We will conduct a comprehensive literature on multiple electronic databases on
65 inequalities and service coverage in Africa.
- 66 3. We will use PROGRESS-Plus to guide our search strategy and conceptualization of
67 inequality.
- 68 4. We will adapt the service coverage indicators used in tracking universal health
69 coverage by the World Health Organization and World Bank.
- 70 5. We foresee extensive data given the broad indicators for service coverage.

71 **Introduction**

72 The attainment of good health and well-being has been prioritized as a common goal by
73 African countries, as outlined in the third Sustainable Development Goal (SDG 3)
74 established by the United Nations in 2015 [1]. Within the World Health Organization
75 (WHO) Regional Office for Africa, countries have recognized attainment of universal
76 health coverage (UHC) as a critical outcome necessary to attain this goal along with good
77 health security and coverage of health determinants [2,3]. One of the main goals of
78 universal health coverage is to ensure that all people receive the health services they
79 need, including promotive, preventative, curative, rehabilitative, and palliative care which
80 are of sufficient quality [4]. At the core of universal health coverage goals is a
81 commitment to health equity.

82
83 WHO defines health equity as “the absence of unfair and avoidable or remediable
84 differences in health among population groups defined socially, economically,
85 demographically or geographically” [5]. In principle, health inequities are systematic
86 differences that are socially produced, and put groups disadvantaged already at further
87 disadvantage related to their health [6]. A key step towards addressing and assessing
88 health equities is monitoring health inequalities-health differences between population
89 subgroups [7].

90 The roots of inequalities in health can be complex and influenced by a myriad of social
91 conditions. In 2005, the WHO commission on social determinants of health emphasized
92 the role of structural mechanisms, which create stratification and social class divisions

1
2
3 93 that shape the health opportunities of various social groups based on their level of power,
4
5 94 prestige and access to resources [5]. The commission identified six important structural
6
7 95 stratifiers: 1) income, 2) education, 3) occupation, 4) social class, 5) gender, and 6) race
8
9 96 or ethnicity. Additionally, other studies in sub-Saharan Africa have also recognized the
10
11 97 need to include historical and cultural context, which underlies causal factors for the
12
13 98 social determinants of health in the region [8,9].
14
15
16
17

18 99 Few reviews have specifically examined inequalities within the context of universal
19
20 100 health coverage. The limited reviews that have been conducted have mainly focused on
21
22 101 specific services such as Reproductive, Maternal, Newborn and Child health (RMNCH)
23
24 102 services [10,11]. Additionally, others have assessed inequalities using selected stratifiers,
25
26 103 such as socioeconomic status and age [12,13]. In this review, we seek to consolidate the
27
28 104 evidence on service coverage inequalities in Africa using a comprehensive set of
29
30 105 stratifiers to assess these inequalities. The specific objectives of the review are to: 1)
31
32 106 Outline the methodological approaches used in assessing health inequalities in relation to
33
34 107 service coverage; 2) Characterize the current evidence on service coverage inequalities;
35
36 108 3) Identify knowledge gaps in the existing evidence on service coverage inequalities); 4)
37
38 109 Document effective strategies being used to tackling the different drivers of inequalities
39
40 110 in service coverage; and 5) Identify challenges related to addressing health equalities in
41
42 111 Africa.
43
44
45
46
47
48

49 112 **Methods and analysis**

50 51 52 53 113 **Design**

1
2
3 114 We will conduct a scoping review following the methodology recommended in the
4
5 115 Joanna Briggs Institute (JBI) Manual for Evidence Synthesis [14]. This methodology is
6
7 116 based on the Arksey and O'Malley framework [15] and an enhanced version developed
8
9 117 by Levac and colleagues [16] for conducting scoping reviews [17]. A scoping was
10
11 118 selected as we aim to outline the evidence in the area of interest and identify knowledge
12
13 119 gaps. This protocol has been registered with the Open Science Framework (OSF) on July
14
15 120 26, 2022 (identifier: <https://osf.io/zd5bt>). We searched our electronic databases on
16
17 121 August 29, 2022, and plan to complete this review by June 26, 2023. We will report this
18
19 122 review according to the Preferred Reporting Items for Systematic Reviews and Meta-
20
21 123 Analysis (PRISMA) extension for Scoping Reviews (PRISMA-ScR) checklist [18]. In
22
23 124 this protocol, we use the standard PRISMA definitions for a report [19]. We report the
24
25 125 content for this scoping review protocol using the PRISMA Protocol checklist
26
27 126 (**Appendix 1**) [20].
28
29
30
31
32

33 127 **Eligibility criteria**

34
35 128 Following the Joanna Briggs Institute Manual for Evidence Synthesis [14], we will use
36
37 129 the following eligibility criteria:

- 38
39 130 • **Participants:** We will consider studies involving individuals, communities, or
40
41 131 organizations involved in the receipt of health services within a health system
42
43 132 context in Africa. No restrictions based on socio-demographic factors (e.g., sex,
44
45 133 age, and ethnicity) or health conditions (e.g., comorbidities) will be applied. We
46
47 134 will consider any countries or geographic regions in the African continent such as
48
49 135 the 47 Member States of the WHO Regional Office for Africa, the Maghreb, and
50
51 136 all other African regions. Global studies which include both an African region and
52
53
54
55
56
57
58
59
60

1
2
3 137 other regions from other continents (e.g., Europe, Asia, or America) will be
4
5 138 considered. We will exclude studies involving only regions or countries outside
6
7
8 139 the African geographic region.
9
10
11 140 ● **Concept:** We will consider studies assessing inequalities or differences in health
12
13 141 service coverage between subgroups. Health service coverage refers to the access
14
15 142 to or use of health services (i.e., equal service for equal need) [21,22]. To identify
16
17 143 stratifiers, we will adopt the Cochrane and Campbell Equity Methods group
18
19 144 framework of PROGRESS-Plus (place of residence, race/ethnicity/culture,
20
21 145 occupation, gender, religion, education, socioeconomic status, and social capital).
22
23 146 This framework includes social factors that can influence health disparities and
24
25 147 the “Plus” includes other factors in which health inequalities may exist such as
26
27 148 age, disability, and sexual orientation. We will exclude studies that did not
28
29 149 examine inequalities in health service coverage, such as studies on health
30
31 150 financing or financial protection, an area overviewed in the literature. However,
32
33 151 studies which assess financial hardship as a driver of inequalities of health service
34
35 152 will be included.

36
37
38
39
40
41 153 **Context:** We will consider studies that assess the use of essential health services.
42
43 154 We will adapt the WHO and World Bank indicators for health service coverage
44
45 155 and will consider essential health services within three components: 1)
46
47 156 Reproductive, maternal, newborn and child health (family planning, antenatal
48
49 157 care, delivery care, postnatal care, child immunization, and health-seeking
50
51 158 behaviour for pneumonia); 2) Infectious diseases (tuberculosis treatment, human
52
53 159 immunodeficiency virus (HIV) therapy, use of insecticide-treated bed nets for
54
55
56
57

1
2
3 160 malaria prevention, adequate sanitation, and neglected tropical diseases
4
5 161 treatment); and 3) Non-communicable diseases (prevention and treatment of
6
7 162 raised blood pressure, prevention and treatment of raised blood glucose, cervical
8
9 163 cancer screening, and tobacco (non-)smoking) (Appendix 2). We will also
10
11 164 consider any index or sub-index assessing health service coverage of these
12
13 165 components (e.g., sub index on infectious disease services). However, we will
14
15 166 exclude indicators or indices related to basic hospital access, health worker
16
17 167 density, access to essential medicines, or health security.

18
19
20
21
22 168 • **Types of sources:** We will consider empirical studies using qualitative,
23
24 169 quantitative, or mixed methods designs. This includes knowledge syntheses (e.g.,
25
26 170 systematic reviews), experimental, quasi-experimental, and observational designs.
27
28 171 No restrictions will be placed on the language of publication or publication status.
29
30 172 However, we will exclude studies published before 2005, because that is the year
31
32 173 the term “Universal Coverage” was mentioned in a World Health Assembly
33
34 174 resolution [23]. Additionally, we will also exclude any retracted publications,
35
36 175 conference abstracts, study protocols, and editorial materials (e.g., editorials,
37
38 176 commentaries, and letters).

39
40
41
42
43
44 177 In essence, we will consider any empirical research that utilizes any study designs and
45
46 178 measures inequalities in relation to services for reproductive, maternal,
47
48 179 newborn and child health (e.g., family planning), infectious diseases (e.g., tuberculosis
49
50 180 treatment), and non-communicable diseases (e.g., cervical cancer screening) in Africa
51
52 181 (Table1).

182 **Table 1. Criteria for considering studies for this review**

Criteria	Inclusion	Exclusion
Participants	Individuals, communities, or organizations involved in the receipt of health care services within a health system context in Africa	⊗ Any countries or regions outside the African geographic region
Concept	Studies focusing on one of the following PROGRESS-Plus* equity stratifier: <ul style="list-style-type: none"> ☑ Place of residence (e.g., rural, urban) ☑ Race, ethnicity, or culture ☑ Occupation ☑ Gender or sex ☑ Religion ☑ Education ☑ Socioeconomic status ☑ Social capital or resources ☑ Any other factors in which health inequalities may exist (e.g., age, disability, and sexual orientation). 	<ul style="list-style-type: none"> ⊗ Studies that did not include a PROGRESS-Plus* equity stratifier ⊗ Studies that did not examine inequalities in health service coverage ⊗ Studies focusing on inequality in health financing or financial protection
Context	Studies monitoring at least one indicator related to the following essential health services (Appendix 2): <ul style="list-style-type: none"> ☑ Family planning ☑ Antenatal, delivery, and postnatal care ☑ Child immunization ☑ Health-seeking behaviour for pneumonia ☑ Tuberculosis treatment ☑ Human immunodeficiency virus (HIV) therapy ☑ Use of insecticide-treated bed nets for malaria prevention ☑ Adequate sanitation ☑ Neglected tropical diseases treatment and care ☑ Prevention and treatment of raised blood pressure ☑ Prevention and treatment of raised blood glucose ☑ Cervical cancer screening ☑ Tobacco (non-)smoking 	<ul style="list-style-type: none"> ⊗ Studies that did not include any of those essential health services ⊗ Studies focusing on basic hospital access ⊗ Studies focusing on health workforce ⊗ Studies focusing on access to essential medicines ⊗ Studies focusing on health security
Type of sources	Empirical studies using a quantitative, qualitative, or mixed methods design and published from 2005: <ul style="list-style-type: none"> ☑ Original studies from 2005 onwards ☑ Conference articles from 2005 onwards ☑ Knowledge syntheses from 2005 onwards 	<ul style="list-style-type: none"> ⊗ Protocols ⊗ Conference abstracts ⊗ Retracted publications ⊗ Records published before 2005 ⊗ Editorial materials (e.g., commentary, letter, editorials)
Abbreviation: PROGRESS: place of residence, race/ethnicity/culture, occupation, gender, religion, education, socioeconomic status, and social capital.		
Notes: *The “Plus” includes other factors in which health inequalities may exist such as age, disability, and sexual orientation.		

183 **Literature search**

1
2
3 184 We will perform a comprehensive search to identify records through electronic databases
4
5 185 and other relevant sources. No restrictions will be placed on date of publication,
6
7 186 language, place of publication, or type of reports in our search strategy.
8
9
10
11 187 We will search MEDLINE, Embase, Web of Science, CINAHL, PsycINFO, and the
12
13 188 Cochrane Library from their dates of inception onwards. We will perform the preliminary
14
15 189 search strategy in Ovid MEDLINE following appropriate design principles [24]. An
16
17 190 information specialist and our core team of international experts in health equity,
18
19 191 universal health coverage, health information systems, or knowledge syntheses from
20
21 192 Africa will review this preliminary search strategy. The search terms will be adapted to
22
23 193 the above-mentioned databases. The search terms will be based on previous works to
24
25 194 reflect three concepts: 1) inequality, 2) health service coverage, and 3) African regions
26
27 195 (**Appendix 3**). For inequality, we will adapt a validated search filter [25], by including
28
29 196 adding other terms that are suitable for the African context (e.g., rural and religion) [26–
30
31 197 28]. For service coverage, we will use terms related to universal health coverage that
32
33 198 were previously identified with an exploratory search in Google, Google Scholar, and
34
35 199 Abstract reviews [29]. For African geographic regions, we will adapt a geographic
36
37 200 African filter validated by the South African Cochrane Centre [30], by correcting the
38
39 201 name “Mayotte” and including alternative missing African country names (e.g.,
40
41 202 “Ruanda”, “Comoros”, and “Cabo Verde”). We will use the list of African region names
42
43 203 used to develop the low- and middle-income countries geographic search filter by the
44
45 204 Cochrane Effective Practice and Organisation of Care (EPOC), in collaboration with the
46
47 205 WHO and Campbell Collaboration [31,32].
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 206 In addition to electronic databases, we will also identify relevant records through
4
5 207 screening reference lists of relevant reports and hand searching on Google and WHO
6
7 208 Global Index Medicus. From the results of the two websites, we will screen at least the
8
9
10 209 first 30 results for each search. Previous experiences show that results beyond the first 30
11
12 210 results are often duplicates and unlikely to be relevant [33,34].
13
14

15 211 **Selection of sources of evidence**

16
17 212 Following of the search, we will collate and upload all the records all the records into
18
19 213 EndNote 20 (Clarivate Analytics, PA, USA), and remove duplicates. Screening forms,
20
21 214 standardized in Google Sheets will be prepared based on eligibility criteria refined by the
22
23 215 entire review team to ensure accurate selection of eligible records. As suggested by
24
25 216 Joanna Briggs Institute, we will select a random sample of 25 records for the pilot test
26
27 217 and only start screening when agreement of 75% or greater is achieved. We will calculate
28
29 218 the inter-reviewer agreement using the weighted Cohen's kappa [35]. One reviewer will
30
31 219 screen all remaining records and identify potentially relevant reports that meet the
32
33 220 eligibility criteria. Each record or report will be screened by one using the standardized
34
35 221 forms and checked by another. We will document a reason for excluding any ineligible
36
37 222 report. Any discrepancies will be resolved through consensus or with the assistance of a
38
39 223 third reviewer.
40
41
42
43
44
45

46 224 **Data charting process**

47
48 225 We will develop a form in Google sheets in consultation with the core team to guide the
49
50 226 extraction of variables. Two reviewers will independently perform a pilot test of the form
51
52 227 to ensure it captures relevant data. We will extract the following information: study
53
54 228 characteristics (e.g., title, authors, year of publication, design, target participants,
55
56
57
58
59
60

1
2
3 229 country); inequality dimensions (e.g., PROGRESS-Plus elements); methodological
4
5 230 approaches used to measure inequalities (e.g., indices); and health service coverage
6
7
8 231 indicators (e.g., skilled birth attendance, complete antenatal care visits). Full charting will
9
10 232 be completed by one reviewer and checked by another. Any discrepancies between
11
12 233 reviewers will be resolved by discussion or with the assistance of a third reviewer.
13
14
15

16 234 **Critical appraisal**

17
18 235 Due to the nature of our research question, we will not perform an appraisal for risk of
19
20 236 bias or conduct quality assessment. This is consistent with the Joanna Briggs Institute
21
22
23 237 (JBI) Manual for Evidence Synthesis [14]. A critical appraisal is generally not
24
25 238 recommended in scoping reviews because the aim is to map the available evidence rather
26
27
28 239 than provide a synthesized and clinically meaningful answer to our research question
29
30 240 [36].
31
32

33 241 **Synthesis of results**

34
35 242 We will employ both qualitative and quantitative methods to analyze the data generated.
36
37
38 243 A descriptive summary of the characteristics of included studies will be presented [16].
39
40 244 We will map studies according to the appropriate health service indicators and
41
42 245 PROGRESS-Plus elements. Additionally, we will undertake a qualitative synthesis to
43
44 246 identify common themes among included studies on the evidence in the findings and
45
46
47 247 probable explanations for service coverage inequalities in the discussion sections [16].
48
49 248 We will use the PRISMA 2020 flowchart to describe the process of report selection [19].
50
51

52 249 **Patient and Public Involvement**

1
2
3 250 Patients, and the public will not be involved in the design, conduct, or parting of this
4
5 251 scoping review. However, we will adopt an integrated knowledge translation approach,
6
7 252 where policy makers, clinicians, researchers, and trainees are equal members. This will
8
9 253 ensure that the research is relevant and useful to knowledge users, increasing the
10
11 254 likelihood of uptake [37]. This will involve female and male international African
12
13 255 experts. They will be engaging virtually once a week to discuss status and progress that
14
15 256 will be transparently available to all members using google drive. Multidisciplinary
16
17 257 consultations will also be conducted with policy-level experts who will be purposively
18
19 258 selected based on the topic for analysis, to enrich the interpretation of findings.
20
21
22
23
24

259 **Discussion**

26
27
28 260 This scoping review seeks to map the evidence on the state of inequality in the progress
29
30 261 towards universal health service coverage and its constituent components in Africa. It
31
32 262 will fill an important gap by providing a comprehensive body of evidence that exists on
33
34 263 the progress towards equity in universal health coverage across Africa. First, it will be
35
36 264 possible to map the evidence on inequalities in coverage for the broad range of essential
37
38 265 services across several dimensions of inequalities. Second, it will be able to highlight the
39
40 266 barriers and opportunities for effectively addressing the drivers of health inequalities in
41
42 267 Africa. Third, it will be possible to demonstrate the appropriate methodological
43
44 268 approaches for measuring health inequalities in the African context. Lastly, it will
45
46 269 highlight which essential services and its relevant dimensions of inequalities that have
47
48 270 been under-researched in the literature, and may need future investigations. Thus, this
49
50 271 review will make a critical contribution to monitoring inequalities in health service
51
52
53
54
55
56
57
58
59
60

1
2
3 272 coverage promoting learning and building the evidence for investments in effective
4
5 273 strategies to reduce health disparities in Africa.
6
7

8 274 **Ethics and dissemination**

9
10
11
12 275 This scoping review will involve neither human participants nor unpublished secondary
13
14 276 data. As such, formal ethical approval from a research ethics committee is not required.
15
16
17 277 We will disseminate our results through publications in peer-reviewed journals, and a
18
19 278 technical report for the WHO Regional Office for Africa. We will also share our reports
20
21 279 using free public repositories such as Open Science Framework and ResearchGate.
22
23
24

25 280

26
27 281
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

282 **List of abbreviations**

283 **PRISMA:** Preferred Reporting Items for Systematic Reviews and Meta-Analysis;

284 **PRISMA-ScR:** PRISMA extension for Scoping Reviews;

285 **PROGRESS:** Place of residence, Race/ethnicity/culture, Occupation, Gender, Religion,
286 Education, Socioeconomic status, and Social capital

287 **WHO:** World Health Organization;

288

289 **Declarations**

290 **Ethics approval and consent to participate**

291 Not applicable.

292

293 **Consent for publication**

294 Not applicable.

295

296 **Availability of data and materials**

297 Please send all requests for study data or materials to Dr. Humphrey Cyprian

298 KARAMAGI (karamagih@gmail.com).

299

300 **Competing interests**

301 Authors declare that they have no competing interests.

302 **Funding**

303 No direct funding was provided.

304

305 **Authors' contributions**

306 HCK, SS, HKK, TO, and BD conceptualized the study. HCK, ABC, DOA, SS, and HKK
307 participated in the design of this protocol. ABC drafted the search strategy and all authors
308 revised it. ABC and DOA drafted this protocol. All authors revised the manuscript
309 critically for important intellectual content, gave final approval of the version to be
310 published and agreed to be accountable for all aspects of the knowledge synthesis.

311

312 **Acknowledgements**

313 We wish to acknowledge the World Health Organization (WHO) Regional Office for
314 Africa for their assistance with various aspects of this work.

315

316 References

- 317 1 General Assembly. Resolution adopted by the General Assembly on 11 September
318 2015. New York: : United Nations 2015.
- 319 2 Karamagi HC, Tumusiime P, Titi-Ofei R, *et al.* Towards universal health coverage in
320 the WHO African Region: assessing health system functionality, incorporating
321 lessons from COVID-19. *BMJ Global Health* 2021;**6**:e004618. doi:10.1136/bmjgh-
322 2020-004618
- 323 3 Karamagi HC, Ben Charif A, Kidane SN, *et al.* Investments for effective
324 functionality of health systems towards Universal Health Coverage in Africa: A
325 scoping review. *PLOS Global Public Health* 2022;**2**:e0001076.
326 doi:10.1371/journal.pgph.0001076
- 327 4 World Health Organization, World Bank. Tracking Universal Health Coverage: 2021
328 Global Monitoring Report. Washington, DC: : World Bank 2021.
329 <https://openknowledge.worldbank.org/handle/10986/36724> (accessed 5 Jul 2022).
- 330 5 World Health Organization. A conceptual framework for action on the social
331 determinants of health. World Health Organization 2010.
332 <https://apps.who.int/iris/handle/10665/44489> (accessed 5 Jul 2022).
- 333 6 Braveman P, Gruskin S. Defining equity in health. *J Epidemiol Community Health*
334 2003;**57**:254–8. doi:10.1136/jech.57.4.254
- 335 7 Hanson K, Brikci N, Erlangga D, *et al.* The Lancet Global Health Commission on
336 financing primary health care: putting people at the centre. *The Lancet Global Health*
337 2022;**10**:e715–72. doi:10.1016/S2214-109X(22)00005-5
- 338 8 Eshetu E, Woldesenbet S. Are there particular social determinants of health for the
339 world's poorest countries? *Afr Health Sci* 2011;**11**:108–15.
- 340 9 Ichoku HE, Mooney G, Ataguba JE-O. Africanizing the social determinants of
341 health: embedded structural inequalities and current health outcomes in sub-Saharan
342 Africa. *Int J Health Serv* 2013;**43**:745–59. doi:10.2190/HS.43.4.i
- 343 10 Çalışkan Z, Kılıç D, Öztürk S, *et al.* Equity in maternal health care service utilization:
344 a systematic review for developing countries. *Int J Public Health* 2015;**60**:815–25.
345 doi:10.1007/s00038-015-0711-x
- 346 11 Målqvist M, Yuan B, Trygg N, *et al.* Targeted Interventions for Improved Equity in
347 Maternal and Child Health in Low- and Middle-Income Settings: A Systematic
348 Review and Meta-Analysis. *PLOS ONE* 2013;**8**:e66453.
349 doi:10.1371/journal.pone.0066453

- 1
2
3 350 12 Gao Q, Prina AM, Ma Y, *et al.* Inequalities in Older age and Primary Health Care
4 351 Utilization in Low- and Middle-Income Countries: A Systematic Review. *Int J*
5 352 *Health Serv* 2022;**52**:99–114. doi:10.1177/00207314211041234
6
7 353 13 Hanratty B, Zhang T, Whitehead M. How close have universal health systems come
8 354 to achieving equity in use of curative services? A systematic review. *Int J Health*
9 355 *Serv* 2007;**37**:89–109. doi:10.2190/TTX2-3572-UL81-62W7
10
11 356 14 Peters M, Godfrey C, McInerney P, *et al.* Chapter 11: Scoping Reviews. In:
12 357 Aromataris E, Munn Z, eds. *JBIM Manual for Evidence Synthesis*. JBI 2020.
13 358 doi:10.46658/JBIMES-20-12
14
15 359 15 Arksey H, O'Malley L. Scoping studies: towards a methodological framework.
16 360 *International Journal of Social Research Methodology* 2005;**8**:19–32.
17 361 doi:10.1080/1364557032000119616
18
19 362 16 Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology.
20 363 *Implementation Science* 2010;**5**:69. doi:10.1186/1748-5908-5-69
21
22 364 17 Munn Z, Pollock D, Khalil H, *et al.* What are scoping reviews? Providing a formal
23 365 definition of scoping reviews as a type of evidence synthesis. *JBIM Evidence Synthesis*
24 366 2022;**20**:950–2. doi:10.11124/JBIES-21-00483
25
26 367 18 Tricco AC, Lillie E, Zarin W, *et al.* PRISMA Extension for Scoping Reviews
27 368 (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med* 2018;**169**:467–73.
28 369 doi:10.7326/M18-0850
29
30 370 19 Page MJ, McKenzie JE, Bossuyt PM, *et al.* The PRISMA 2020 statement: an updated
31 371 guideline for reporting systematic reviews. *BMJ* 2021;**372**:n71. doi:10.1136/bmj.n71
32
33 372 20 Moher D, Shamseer L, Clarke M, *et al.* Preferred reporting items for systematic
34 373 review and meta-analysis protocols (PRISMA-P) 2015 statement. *Syst Rev* 2015;**4**:1.
35 374 doi:10.1186/2046-4053-4-1
36
37 375 21 Cohen AB, Grogan CM, Horwitt JN. The Many Roads toward Achieving Health
38 376 Equity. *Journal of Health Politics, Policy and Law* 2017;**42**:739–48.
39 377 doi:10.1215/03616878-3940414
40
41 378 22 Paul E, Deville C, Bodson O, *et al.* How is equity approached in universal health
42 379 coverage? An analysis of global and country policy documents in Benin and Senegal.
43 380 *International Journal for Equity in Health* 2019;**18**:195. doi:10.1186/s12939-019-
44 381 1089-9
45
46 382 23 World Health Assembly 58. Social health insurance: sustainable health financing,
47 383 universal coverage and social health insurance: report by the Secretariat. World
48 384 Health Organization 2005. <https://apps.who.int/iris/handle/10665/20302> (accessed 3
49 385 Aug 2022).

- 1
2
3 386 24 MacFarlane A, Russell-Rose T, Shokrane F. Search strategy formulation for
4 387 systematic reviews: Issues, challenges and opportunities. *Intelligent Systems with*
5 388 *Applications* 2022;**15**:200091. doi:10.1016/j.iswa.2022.200091
- 7 389 25 Hosking J, Macmillan A, Jones R, *et al.* Searching for health equity: validation of a
8 390 search filter for ethnic and socioeconomic inequalities in transport. *Systematic*
9 391 *Reviews* 2019;**8**:94. doi:10.1186/s13643-019-1009-5
- 12 392 26 Parker R, Wanner A, Foster M, *et al.* Design and validation of a search filter for
13 393 LGBTQ+ populations. In: *25th Cochrane Colloquium*. Edinburgh, UK: 2018. 16–
14 394 8. <https://doi.org/10.1002/14651858.CD201801>
- 16 395 27 Rizvi A, Lawson DO, Young T, *et al.* Guidance relevant to the reporting of health
17 396 equity in observational research: a scoping review protocol. *BMJ Open*
18 397 2022;**12**:e056875. doi:10.1136/bmjopen-2021-056875
- 21 398 28 Prady SL, Uphoff EP, Power M, *et al.* Development and validation of a search filter
22 399 to identify equity-focused studies: reducing the number needed to screen. *BMC*
23 400 *Medical Research Methodology* 2018;**18**:106. doi:10.1186/s12874-018-0567-x
- 25 401 29 Rizvi SS, Douglas R, Williams OD, *et al.* The political economy of universal health
26 402 coverage: a systematic narrative review. *Health Policy and Planning* 2020;**35**:364–
27 403 72. doi:10.1093/heapol/czz171
- 30 404 30 Pienaar E, Grobler L, Busgeeth K, *et al.* Developing a geographic search filter to
31 405 identify randomised controlled trials in Africa: finding the optimal balance between
32 406 sensitivity and precision. *Health Info Libr J* 2011;**28**:210–5. doi:10.1111/j.1471-
33 407 1842.2011.00936.x
- 35 408 31 Cochrane Effective Practice and Organisation of Care (EPOC). Low- and middle-
36 409 income country (LMIC) filters. 2020. <https://epoc.cochrane.org/lmic-filters> (accessed
37 410 25 Nov 2021).
- 40 411 32 Sutton A, Campbell F. The ScHARR LMIC filter: Adapting a low- and middle-
41 412 income countries geographic search filter to identify studies on preterm birth
42 413 prevention and management. *Res Synth Methods* 2022;**13**:447–56.
43 414 doi:10.1002/jrsm.1552
- 45 415 33 Hargrave DR, Hargrave UA, Bouffet E. Quality of health information on the Internet
46 416 in pediatric neuro-oncology. *Neuro-oncol* 2006;**8**:175–82. doi:10.1215/15228517-
47 417 2005-008
- 49 418 34 van der Marel S, Duijvestein M, Hardwick JC, *et al.* Quality of web-based
50 419 information on inflammatory bowel diseases. *Inflamm Bowel Dis* 2009;**15**:1891–6.
51 420 doi:10.1002/ibd.20976

- 1
2
3 421 35 Cohen J. Weighted kappa: Nominal scale agreement provision for scaled
4 422 disagreement or partial credit. *Psychological Bulletin* 1968;**70**:213–20.
5 423 doi:10.1037/h0026256
6
7
8 424 36 Peters MDJ, Marnie C, Tricco AC, *et al.* Updated methodological guidance for the
9 425 conduct of scoping reviews. *JBI Evidence Synthesis* 2020;**18**:2119.
10 426 doi:10.11124/JBIES-20-00167
11
12 427 37 Canadian Institutes of Health Research (CIHR). Guide to Knowledge Translation
13 428 Planning at CIHR: Integrated and End-of-Grant Approaches. 2012.[http://www.cihr-](http://www.cihr-irsc.gc.ca/e/45321.html#a5)
14 429 [irsc.gc.ca/e/45321.html#a5](http://www.cihr-irsc.gc.ca/e/45321.html#a5) (accessed 28 Feb 2018).
15
16 430
17 431
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3
4 432 **Tables**

5
6 433 **Table 1.** Criteria for considering studies for this review

7
8 434

9
10 435 **Additional files**

11
12 436 **Appendix 1.** The PRISMA-P 2015 Checklist

13
14 437 **Appendix 2.** Health Service Coverage Indicators

15
16 438 **Appendix 3.** Electronic Search strategies for Databases

17
18 439

19
20 440

21
22 441

23
24 442

25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

For peer review only

PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to *Systematic Reviews* from Table 3 in Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 4:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	<input type="checkbox"/>	<input type="checkbox"/>	Not applicable
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	<input checked="" type="checkbox"/>	<input type="checkbox"/>	40
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6-27
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	311-319
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	<input type="checkbox"/>	<input type="checkbox"/>	Not applicable
Support					
Sources	5a	Indicate sources of financial or other support for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	308-309
Sponsor	5b	Provide name for the review funder and/or sponsor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	308-309
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	308-309
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	<input checked="" type="checkbox"/>	<input type="checkbox"/>	71-105
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	105-111

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
METHODS					
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	131-187
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	187-214
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	287-214
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	<input checked="" type="checkbox"/>	<input type="checkbox"/>	113-227
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	215-227
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	<input checked="" type="checkbox"/>	<input type="checkbox"/>	228-237
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	<input checked="" type="checkbox"/>	<input type="checkbox"/>	228-237
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	<input checked="" type="checkbox"/>	<input type="checkbox"/>	228-237
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	<input checked="" type="checkbox"/>	<input type="checkbox"/>	238-244
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	<input checked="" type="checkbox"/>	<input type="checkbox"/>	245-252
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I^2 , Kendall's tau)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	245-252
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	245-252
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	<input checked="" type="checkbox"/>	<input type="checkbox"/>	245-252

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	245-252
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	245-252

For peer review only

Appendix 2: Health Service Coverage Indicators

Indicators for measuring progress towards reproductive, maternal, newborn and child health (RMNCH)
Family planning (e.g., demand satisfied with modern contraception methods in women)
Antenatal care (e.g., women who received antenatal care four or more time)
Delivery care (e.g., births attended by skilled health personnel)
Postnatal care (e.g., women or newborn that received postnatal care services after birth)
Child immunization (e.g., children aged 1 year who have received three doses of diphtheria, tetanus, and pertussis vaccine (DPT3) vaccine)
Health-seeking behaviour for pneumonia (e.g., children with suspected pneumonia who have sought care)
Indicators for measuring progress towards infectious diseases
Tuberculosis treatment (e.g., people who received effective tuberculosis treatment)
Human immunodeficiency virus (HIV) therapy (e.g., people with HIV receiving antiretroviral treatment)
Use of insecticide-treated bed nets for malaria prevention (e.g., people sleeping under insecticide-treated nets)
Adequate sanitation (e.g., households using at least basic sanitation facilities)
Neglected tropical diseases treatment and care (e.g., people required treatment for any of the neglected tropical diseases). Neglected tropical diseases are a diverse group of 20 conditions including: Buruli ulcer, Chagas disease, dengue and chikungunya, dracunculiasis (Guinea-worm disease), echinococcosis, foodborne trematodiasis, human African trypanosomiasis (sleeping sickness), leishmaniasis, leprosy (Hansen's disease), lymphatic filariasis, mycetoma, chromoblastomycosis and other deep mycoses, onchocerciasis (river blindness), rabies, scabies and other ectoparasitoses, schistosomiasis, soil-transmitted helminthiasis, snakebite envenoming, taeniasis/cysticercosis, trachoma, and yaws and other endemic treponematoses.
Indicators for measuring progress towards non-communicable diseases
Prevention and treatment of raised blood pressure (e.g., prevalence of raised blood pressure regardless of treatment status)
Prevention and treatment of raised blood glucose (e.g., mean fasting plasma glucose)
Cervical cancer screening (e.g., prevalence of cervical cancer screening at aged 30-49)
Tobacco (non-)smoking (e.g., prevalence of tobacco use among adults aged at least 15 years)

Appendix 3. Electronic Search Strategies for Databases

MEDLINE via Ovid (searched on August 29, 2022; Period: 1946 - August 26, 2022)

Concept		Keyword	umber	Result
Inequality	Controlled Vocabulary	exp "gender identity"/ or exp "sexual and gender minorities"/ or exp "disabled persons"/ or exp geriatrics/ or "health equity"/ or "health inequities"/ or "healthcare disparities"/ or "health status disparities"/ or "health services accessibility"/ or "sex factors"/ or women/ or men/ or "residence characteristics"/ or "urban population"/ or "rural population"/ or "cultural characteristics"/ or "cultural diversity"/ or religion/ or "social discrimination"/ or "socioeconomic factors"/ or "vulnerable populations"/ or "social class"/ or "minority groups"/ or "ethnic and racial minorities"/ or "educational status"/ or unemployment/	1	884,458
	Free Text	(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) adj3 (availabl* or access*)) or (gender adj (difference? or identit* or role?)) or (sex adj (disparit* or difference? or role?)) or ((wom#n* or m#n*) adj role?) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) adj3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health adj3 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level?" or "level? of education" or "educational attainment" or ((well or better or higher or worse or less) adj (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off").ti,ab,kw,kf	2	1,197,912
	All	1 or 2	3	1,739,958
Health Service Coverage	Controlled Vocabulary	"universal health care"/	4	243
	Free Text	(UHC or (universal adj2 (coverage or health* or care or access))).ti,ab,kw,kf	5	12,120
	All	4 or 5	6	12,186
Africa	Controlled Vocabulary	exp africa/ not ("guinea pig" or "guinea pigs" or "aspergillus niger").ti,ab,kw,kf,cp,in	7	308,111
	Free Text	((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d' ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")).ti,ab,kw,kf,cp,in	8	885,575
	All	7 or 8	9	921,268
Total result		3 AND 6 AND 9	10	1,924

Embase via Elsevier (searched on August 29, 2022)

Concept		Keyword	umber	Result
Inequality	Controlled Vocabulary	'gender identity'/exp or 'sexual and gender minority'/exp or 'disabled person'/exp or 'disabled person'/exp or 'health equity'/de or 'health disparity'/de or 'health care access'/de or 'health care availability'/de or 'sex difference'/de or 'female'/de or 'male'/de or 'residence characteristics'/de or 'urban population'/de or 'rural population'/de or 'cultural factor'/de or 'cultural diversity'/de or 'religion'/de or 'social discrimination'/de or 'socioeconomics'/de or 'vulnerable population'/de or 'disadvantaged population'/de or 'social class'/de or 'minority group'/de or 'ethnic group'/de or 'educational status'/de or 'unemployment'/de	#1	15,833,425
	Free Text	(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) NEAR/3 (availabl* or access*)) or (gender NEXT/1 (difference\$ or identit* or role\$)) or (sex NEXT/1 (disparit* or difference\$ or role\$)) or ((wom?n* or m?n*) NEXT/1 role\$) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) NEAR/3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health NEAR/3 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level\$" or "level\$ of education" or "educational attainment" or ((well or better or higher or worse or less) NEXT/1 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off"):ti,ab,kw	#2	1,527,2697
	All	1 or 2	#3	16,237,327
Health Service Coverage	Controlled Vocabulary	'universal health care'/de	#4	600
	Free Text	(UHC or (universal NEAR/2 (coverage or health* or care or access))):ti,ab,kw	#5	14,728
	All	4 or 5	#6	14,913
Africa	Controlled Vocabulary	'africa'/exp not ("guinea pig" or "guinea pigs" or "aspergillus niger"):ti,ab,kw,ca,ad,ff	#7	397,519
	Free Text	((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'Ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")):ti,ab,kw,ca,ad,ff	#8	859,620
	All	7 or 8	#9	960,563
Total result		#3 AND #6 AND #9	#10	2,586

Web of Science (searched on August 29, 2022)

Concept	Free Text	Keyword	umber	Result
Inequality	Free Text	TS=(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) NEAR/2 (availabl* or access*)) or (gender NEAR/0 (difference\$ or identit* or role\$)) or (sex NEAR/0 (disparit* or difference\$ or role\$)) or ((wom?n* or man* or men*) NEAR/0 role\$) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) NEAR/2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health NEAR/2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level\$" or "level\$ of education" or "educational attainment" or ((well or better or higher or worse or less) NEAR/0 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off")	#1	3,056,690
Health Service Coverage	Free Text	TS=(UHC or (universal NEAR/1 (coverage or health* or care or access)))	#2	15,460
Africa	Free Text	TS=((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'Ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) or CU=((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'Ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) or OG=((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'Ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi	#3	2,204,863

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

		or nyalaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger"))		
Total result	#1 AND #2 AND #3		#4	2,145

For peer review only

CINAHL via EBSCOhost (searched on August 19, 2022)

Concept		Keyword	umber	Result
Inequality	Controlled Vocabulary	(MH "gender identity+") or (MH "sexual and gender minorities+") or (MH "persons with disabilities+") or (MH "geriatrics+") or (MH "health inequities") or (MH "healthcare disparities") or (MH "health status disparities") or (MH "health services accessibility") or (MH "sex factors") or (MH "women") or (MH "men") or (MH "residence characteristics") or (MH "urban population") or (MH "rural population") or (MH "cultural diversity") or (MH "religion and religions") or (MH "discrimination") or (MH "socioeconomic factors") or (MH "special populations") or (MH "social class") or (MH "minority groups") or (MH "ethnic groups") or (MH "educational status") or (MH "unemployment")	S1	544,616
	Free Text	TI (equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) N2 (availabl* or access*)) or (gender W1 (difference# or identit* or role#)) or (sex W1 (disparit* or difference# or role#)) or ((wom?n* or m?n*) W1 role#) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) N2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health N2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level#" or "level# of education" or "educational attainment" or ((well or better or higher or worse or less) W1 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off") OR AB (equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) N2 (availabl* or access*)) or (gender W1 (difference# or identit* or role#)) or (sex W1 (disparit* or difference# or role#)) or ((wom?n* or m?n*) W1 role#) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) N2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health N2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level#" or "level# of education" or "educational attainment" or ((well or better or higher or worse or less) W1 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off") OR SU (equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) N2 (availabl* or access*)) or (gender W1 (difference# or identit* or role#)) or (sex W1 (disparit* or difference# or role#)) or ((wom?n* or m?n*) W1 role#) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) N2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health N2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level#" or "level# of education" or "educational attainment" or ((well or better or higher or worse or less) W1 (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off")	S2	654,635
	All	S1 or S2	S3	874,600
	Health Service Coverage	Controlled Vocabulary	MH "universal health care"	S4
	Free Text	TI (UHC or (universal N1 (coverage or health* or care or access))) OR AB (UHC or (universal N1 (coverage or health* or care or access))) OR SU (UHC or (universal N1 (coverage or health* or care or access)))	S5	6,489
	All	S4 or S5	S6	6,489

Africa	Controlled Vocabulary	(MH "africa+") not (TI ("guinea pig" or "guinea pigs" or "aspergillus niger") OR AB ("guinea pig" or "guinea pigs" or "aspergillus niger") OR SU ("guinea pig" or "guinea pigs" or "aspergillus niger") OR AF ("guinea pig" or "guinea pigs" or "aspergillus niger"))	S7	96,591
	Free Text	<p>TI ((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d#ivoire" or "cote d' ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) OR</p> <p>AB ((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d#ivoire" or "cote d' ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) OR</p> <p>SU ((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d#ivoire" or "cote d' ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanada or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")) OR</p> <p>AF ((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d#ivoire" or "cote d' ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or</p>	S8	210,457

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

		namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib not ("guinea pig" or "guinea pigs" or "aspergillus niger"))		
	All	S7 or S8	S9	210,575
Total result		S3 AND S6 AND S9	S10	899

For peer review only

PsycINFO via Ovid (searched on August 29, 2022; Period: 1806 - August Week 3, 2022)

Concept		Keyword	umber	Result
Inequality	Controlled Vocabulary	exp "gender identity"/ or exp "sexual minority groups"/ or exp disabilities/ or exp geriatrics/ or equity/ or "healthcare disparities"/ or "health care access"/ or "human sex differences"/ or "human females"/ or "human males"/ or neighborhoods/ or ghettos/ or poverty areas/ or "rural environments"/ or "urban environments"/ or "minority groups"/ or "racial and ethnic differences"/ or "sociocultural factors"/ or "cross cultural differences"/ or "cultural identity"/ or "ethnic identity"/ or religion/ or "religious groups"/ or "social discrimination"/ or "socioeconomic factors"/ or "socioeconomic status"/ or "economic inequality"/ or "susceptibility (disorders)"/ or "at risk populations"/ or "social class"/ or disadvantaged/ or "educational attainment level"/ or unemployment/	1	619,023
	Free Text	(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) adj3 (availabl* or access*)) or (gender adj (difference? or identit* or role?)) or (sex adj (disparit* or difference? or role?)) or ((wom#n* or m#n*) adj role?) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) adj3 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health adj3 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level?" or "level? of education" or "educational attainment" or ((well or better or higher or worse or less) adj (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off").ti,ab,id.	2	698,649
	All	1 or 2	3	1,036,490
Health Service Coverage	Free Text	(UHC or (universal adj2 (coverage or health* or care or access))).ti,ab,id.	4	1,840
Africa	Free Text	((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")).ti,ab,id,in	5	141,449
Total result		3 AND 4 AND 5	6	168

Cochrane Library (searched on August 29, 2022)

Concept		Keyword	umber	Result
Inequality	Controlled Vocabulary	[mh "gender identity"] or [mh "sexual and gender minorities"] or [mh "disabled persons"] or [mh "geriatrics"] or [mh ^"health equity"] or [mh ^"health inequities"] or [mh ^"healthcare disparities"] or [mh ^"health status disparities"] or [mh ^"health services accessibility"] or [mh ^"sex factors"] or [mh ^"women"] or [mh ^"men"] or [mh ^"residence characteristics"] or [mh ^"urban population"] or [mh ^"rural population"] or [mh ^"cultural characteristics"] or [mh ^"cultural diversity"] or [mh ^"religion"] or [mh ^"social discrimination"] or [mh ^"socioeconomic factors"] or [mh ^"vulnerable populations"] or [mh ^"social class"] or [mh ^"minority groups"] or [mh ^"ethnic and racial minorities"] or [mh ^"educational status"] or [mh ^"unemployment"]	#1	18,168
	Free Text	(equit* or inequit* or inequalit* or disparit* or equalit* or deprivation or gini or "concentration index" or ((health* or medical) NEAR/2 (availabl* or access*)) or (gender NEXT (difference? or identit* or role?)) or (sex NEXT (disparit* or difference? or role?)) or ((wom?n* or m?n*) NEXT role?) or "sexual minorit*" or "gender minorit*" or LGBT* or 2SLGBT* or urban or rural or ethnic* or religi* or ((social* or socio-economic or socioeconomic or economic or structural or material) NEAR/2 (advantage* or disadvantage* or exclude* or exclusion or include* or inclusion or status or position or gradient* or hierarch* or class* or determinant*)) or (health NEAR/2 (gap* or gradient* or hierarch*)) or SES or SEP or sociodemographic* or socio-demographic* or income or wealth* or poverty or "educational status" or "educational level?" or "level? of education" or "educational attainment" or ((well or better or higher or worse or less) NEXT (educated)) or unemploy* or "home owner*" or tenure or affluen* or "well off" or "better off" or "worse off"):ti,ab,kw	#2	79,541
	All	#1 or #2	#3	87,932
Health Service Coverage	Controlled Vocabulary	[mh ^"universal health care"]	#4	0
	Free Text	(UHC or (universal NEAR/1 (coverage or health* or care or access))):ti,ab,kw	#5	306
	All	#4 or #5	#6	306
Africa	Controlled Vocabulary	[mh "africa"] not ("guinea pig" or "guinea pigs" or "aspergillus niger"):ti,ab,kw	#7	8,273
	Free Text	((africa* or algeria or algerie or angola or benin or dahomey or botswana or bechuanaland or "burkina faso" or "burkina fasso" or "upper volta" or "haute volta" or burundi or urundi or cameroon or cameroun or "canary islands" or "cape verde" or cabo verde or "ubangi shari" or chad or tchad or comoros or "comoro islands" or comores or mayotte or congo or zaire or djibouti or "french somaliland" or egypt or "united arab republic" or eritrea or eswatini or swaziland or ethiopia or gabon or "gabonese republic" or gambia or ghana or "gold coast" or guinea or "ivory coast" or "cote d'ivoire" or "cote d'ivoire" or kenya or lesotho or basutoland or liberia or libya or libia or jamahiriya or jamahiryia or madagascar or "malagasy republic" or malawi or nyasaland or mali or mauritania or mauritius or morocco or ifni or mozambique or "portuguese east africa" or mocambique or namibia or niger or nigeria or principe or "sao tome" or reunion or rwanda or ruanda or senegal or seychelles or "sierra leone" or somalia or "south africa" or "st helena" or sudan or tanzania or tanganyika or togo or "togolese republic" or tunisia or tunisie or uganda or "western sahara" or zambia or zimbabwe or "indian ocean islands" or sahara or magreb or magrib) not ("guinea pig" or "guinea pigs" or "aspergillus niger")):ti,ab,kw	#8	34,555
	All	#7 or #8	#9	34,555
Total result		#3 AND #6 AND #9	#10	56