



THE ECOSYSTEM OF EVIDENCE

Lessons learned in the pandemic
era and future challenges

10th International Conference for EBHC Teachers and Developers
10th Conference of the International Society for EBHC
Taormina, 25th - 28th October 2023

#EBHC2023



Tackling inequities & promoting a worldwide evidence-informed health care

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Disclosures

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Disclosures

Guideline methodologist

- WHO - International Travel Health GDG
- MoH, Kenya - Kenya Essential Diagnostics List Guideline (funded by FIND)

Systematic reviewer - WHO, FIND

Cochrane - Academic Editor & active contributor

Commissioner - Lancet Commission of Sustainable Health Care

Member - Guidelines International Network



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Outline

1. Definitions and background of health inequity.
2. Health inequities and COVID-19 pandemic.
3. Evidence-based Health Care and Health inequities (Gaps & Progress).



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What is health inequity?

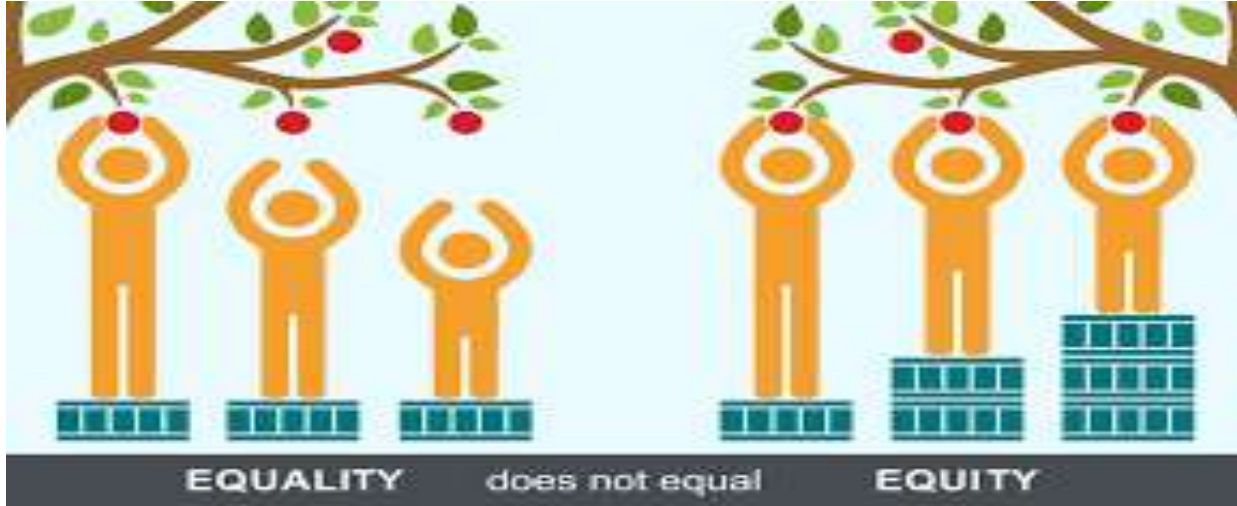
- Health inequity refers to unfair, systematic and avoidable differences in health.
- Why unfair? They can be resolved by reasonable action.

Related terminology:

- Inequalities in health
- Disparities in health



But equity ≠ equality



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Inequity ≠ inequality

Some differences are unfair while others are inevitable!

1. Natural, biological variation.
2. Health-damaging behaviour if freely chosen, such as participation in certain sports and pastimes.

1. Lifestyle restrictions.
2. Exposure to unhealthy, stressful living and working conditions.
3. Inadequate access to essential health and other public services.



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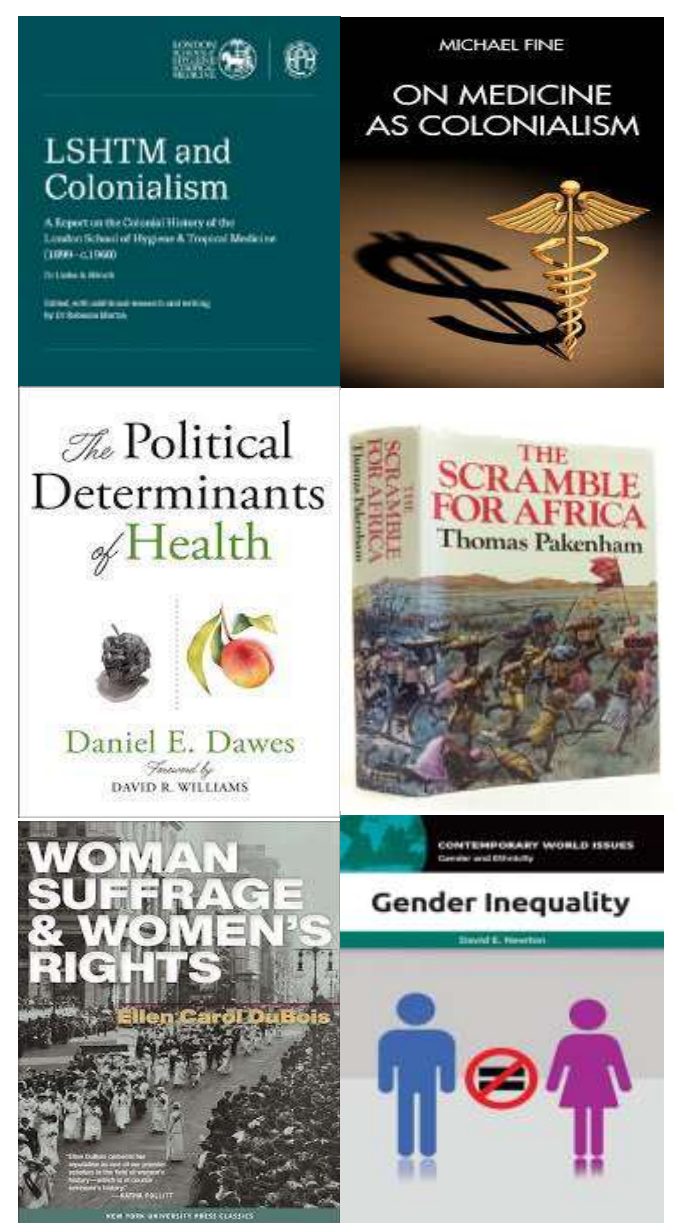
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Historical background

Legacy issues:

- Western colonialism and imperialism.
- Racism, tribalism or ethnicity.
- Gender disparities in health.
- Political upheavals and misgovernance.
- Bias in health care delivery and research.
- Preference for biomedical approaches on single diseases.

These issues determine access to power, privilege and place in society!



Inequities in health

Towards a common definition of global health



*Jeffrey P Koplan, T Christopher Bond, Michael H Merson, K Srinath Reddy, Mario Henry Rodriguez, Nelson K Sewankambo, Judith N Wasserheit,
for the Consortium of Universities for Global Health Executive Board**

“...global health is an area for study, research, and practice that places a priority on improving health and **achieving equity in health** for all people worldwide.”



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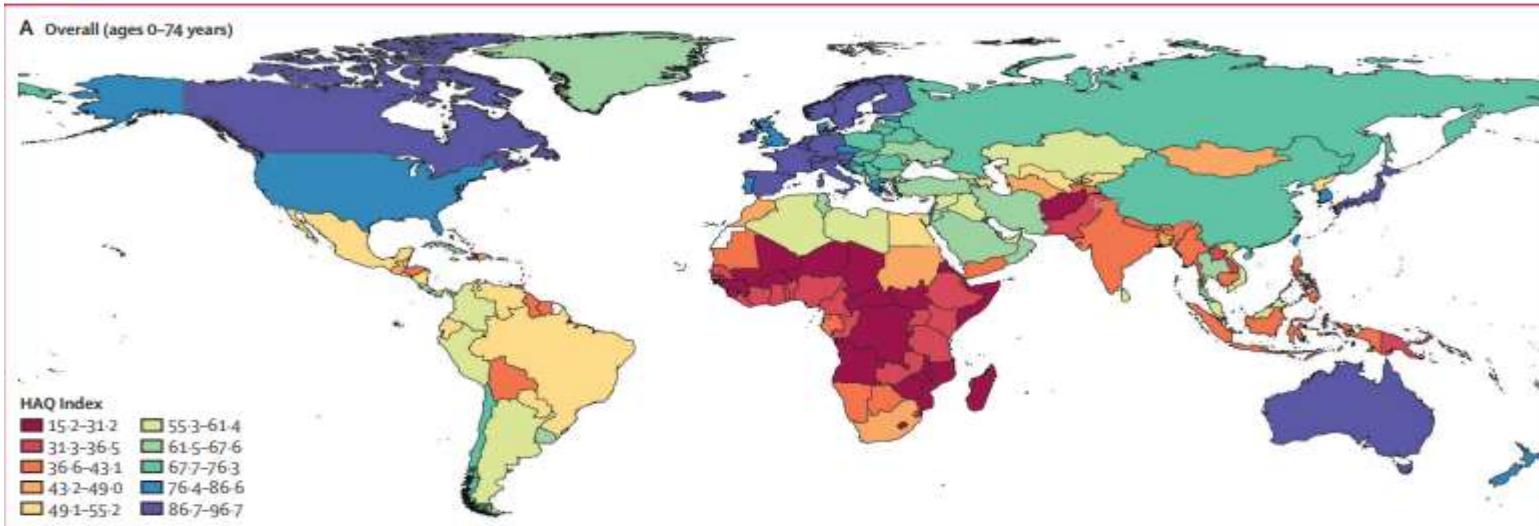
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But.....



Global Healthcare Access and Quality (HAQ) Index overall and for select age groups in 204 locations from 1990 to 2019

[https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(22\)00429-6/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(22)00429-6/fulltext)

Saint-Jacques *et al. International Journal for Equity in Health* 2014, **13**:94
<http://www.equityhealthj.com/content/13/1/94>



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doi:10.1007/s11524-016-0075-4
© 2016 The New York Academy of Medicine



RESEARCH

Open Access

Premature mortality due to social and material deprivation in Nova Scotia, Canada

Nathalie Saint-Jacques^{1,2,3*}, Ron Dewar¹, Yunsong Cui³, Louise Parker³ and Trevor JB Dummer⁴

Accelerated Health Declines among African Americans in the USA

Roland J. Thorpe, Ruth G. Fesahazion, Lauren Parker, Tanganiyka Wilder, Ronica N. Rooks, Janice V. Bowie, Caryn N. Bell, Sarah L. Szanton, and Thomas A. LaVeist



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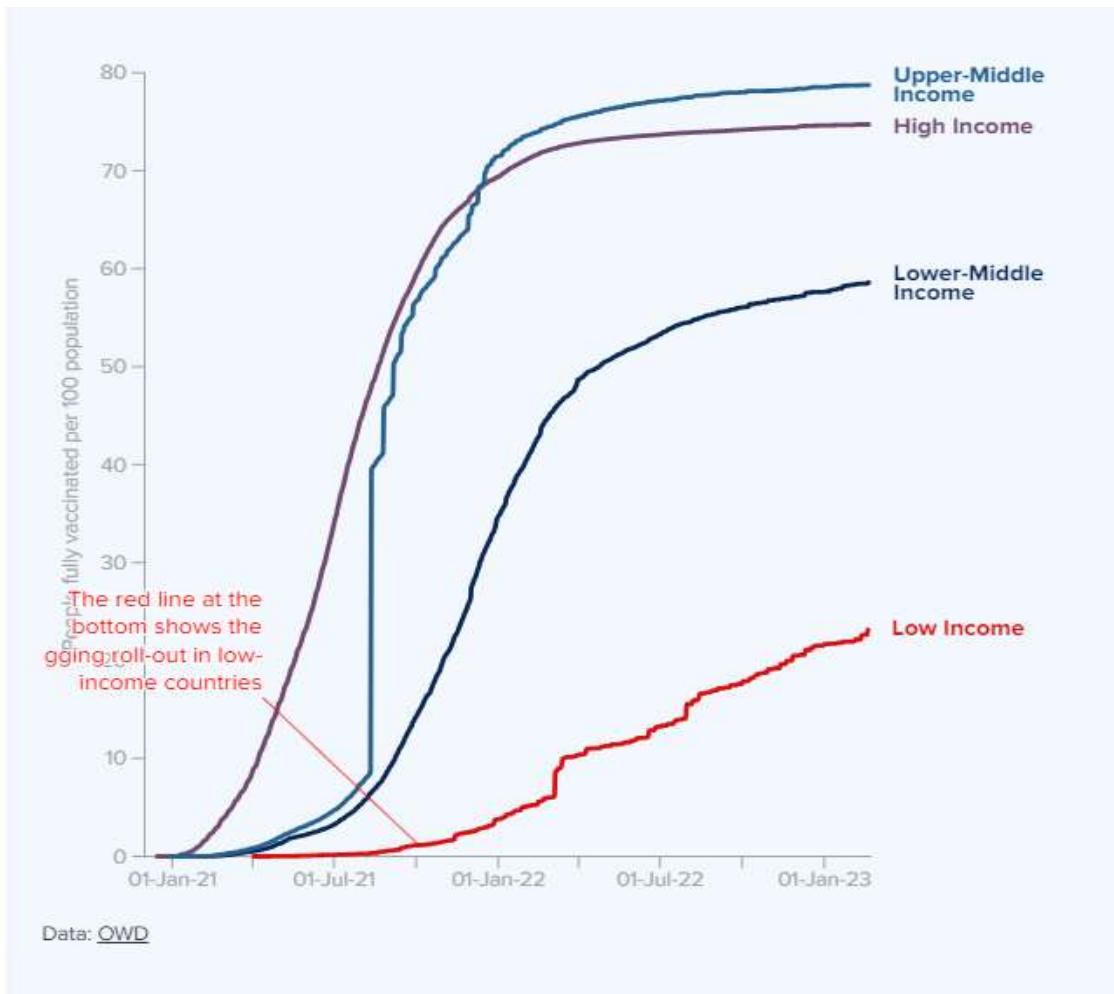
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But...COVID-19 inequities



High income countries: 3 in 4 people, or

72.91%

have been vaccinated with at least one dose as of Oct 18, 2023.

[WHO](#)

Low income countries: 1 in 3 people, or

35.66%

have been vaccinated with at least one dose as of Oct 18, 2023.

[WHO](#)

<https://data.undp.org/vaccine-equity/>



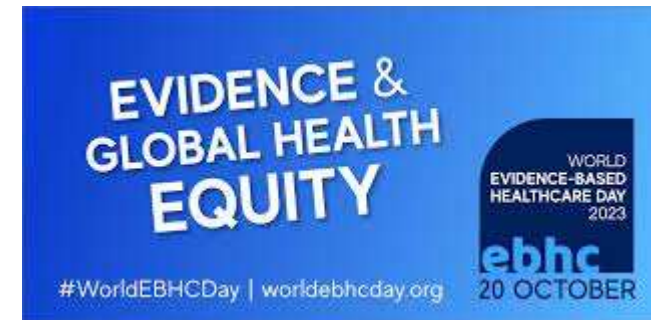
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What is the role of EBHC in tackling health inequity?



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Evidence-based Medicine and Equity: The Exclusion of Disadvantaged Groups

Wendy A. Rogers

“Evidence-based medicine is an approach to health care that seems to offer multi-level assistance in creating and **delivering fairer health care**”

1. Use of standardized methods or frameworks- eliminates discrimination
2. Findings used to ensure fair or equitable distribution of interventions
3. **Equity considerations in Evidence synthesis and Evidence to Decision frameworks**



EBHC & health inequity



JBI Wheel of Evidence

Rigorous evidence generation, evidence synthesis and facilitating evidence-informed decisions in disadvantaged groups, in LMICs and by diverse researchers, are foundational to impacting sustainable development outcomes and improving health inequities.



EBHC & health inequity

SYMPOSIUM ON EVIDENCE BASED MEDICINE

Evidence based medicine and justice: a framework for looking at the impact of EBM upon vulnerable or disadvantaged groups

W A Rogers

“This analysis suggests that EBM turns our attention away from social and cultural factors that influence health and focuses on a narrow biomedical and individualistic model of health”.

J Med Ethics 2004;**30**:141–145. doi: 10.1136/jme.2003.007062

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27 November 2003

This article examines the implicit promises of fairness in evidence based medicine (EBM), namely to avoid discrimination through objective processes, and to distribute effective treatments fairly. The relationship between EBM and vulnerable groups (such as those disadvantaged by virtue of poverty, ethnicity, age, gender, mental health problems or similar) is examined. Several aspects of EBM are explored: the way evidence is created (commissioning and design of, and participation in research), and the way evidence is applied in clinical care and health policy. This analysis suggests that EBM turns our attention away from social and cultural factors that influence health and focuses on a narrow biomedical and individualistic model of health. Those with the greatest burden of ill health are left disenfranchised, as there is little research that is relevant to them, there is poor access to treatments, and attention is diverted away from activities that might have a much greater impact on their health.



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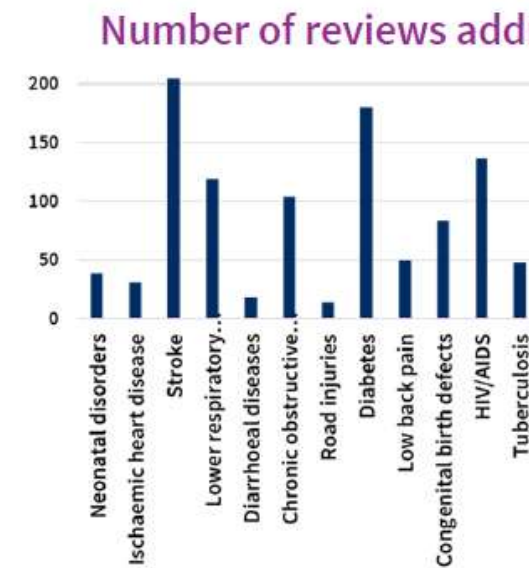
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Equity Gaps in EBHC

Are Cochrane reviews addressing greatest burden of disease and social determinants of health?

1 Neonatal disorders
2 Ischaemic heart disease
3 Stroke
4 Lower respiratory infections
5 Diarrhoeal diseases
6 COPD
7 Road injuries
8 Diabetes
9 Low back pain
10 Congenital birth defects
11 HIV/AIDS
12 Tuberculosis
13 Depressive disorders
14 Malaria
15 Headache disorders
16 Cirrhosis
17 Lung cancer
18 Chronic kidney disease
19 Other musculoskeletal
20 Age-related hearing loss
21 Falls
22 Self-harm
23 Gynaecological diseases
24 Anxiety disorders
25 Dietary iron deficiency

The burden of disease is ca for a disease or health con mortality (YLLs) and years cases of the disease or hea



Social determinants of health (SDoH) that influence health equity

SDoH category	No. relevant reviews
Housing and living environment	10
Work environment	11
Transport	4
Employment and income	18
Water and sanitation	11
Food security	15
Early childhood development	26
Access to care	18

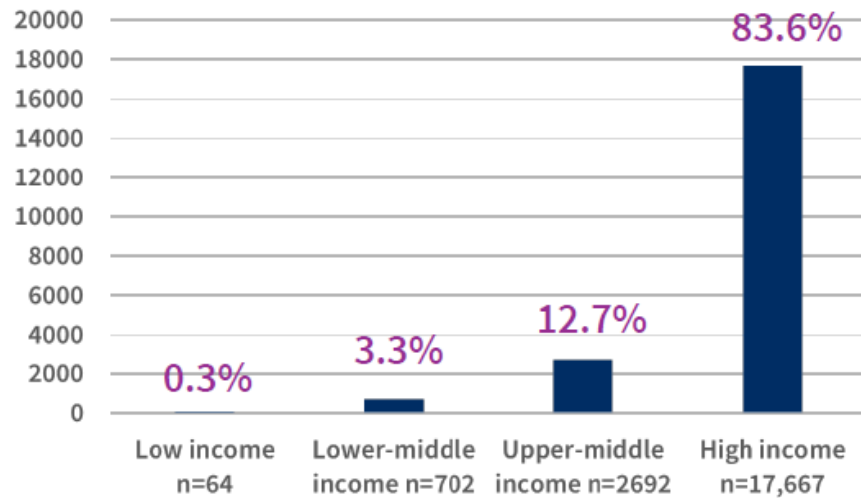
Only 113 (1.3%) Cochrane reviews directly address SDoH topics

Issues such as health inequity, poverty, racism, sexism, etc. are almost never the central focus of Cochrane reviews.

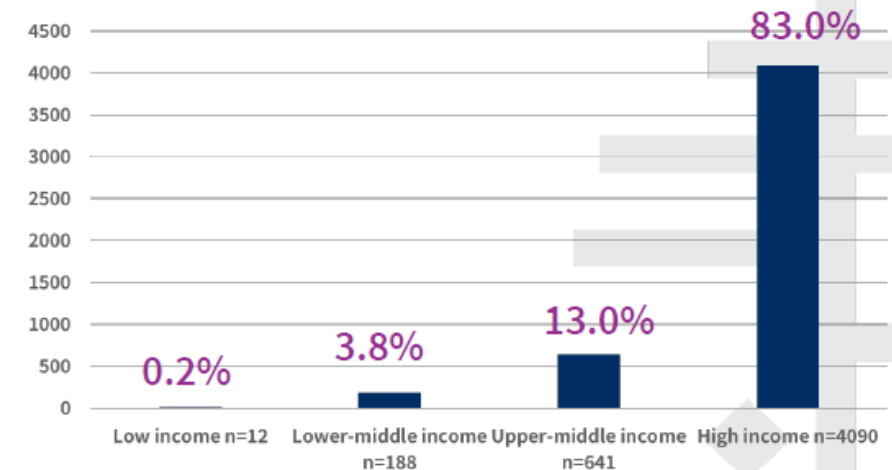
Equity Gaps in EBHC

Distribution of Cochrane review authors

All authors (n=21,125)



Contact authors only (n=4930)



Gaps_ Cochrane example



Listening and Learning report 2021

To better understand diversity and inclusion in Cochrane and particularly to better understand how people experience engaging with Cochrane from the perspective of diversity and inclusivity.

1,312 people participated

How could Cochrane be even more inclusive?

Feedback from over 1300 people

January 2022

Coproduced by members of the Cochrane community and an independent team

Trusted evidence.
Informed decisions.
Better health.



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Equity Gaps in EBHC

Table 1: Spread of Cochrane Groups as of July 2021

Type of Cochrane Group	Total number of Groups	Number In low and middle income countries	Number in countries other than Australia, Canada, UK and USA
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Table 2: Characteristics of people on Cochrane's Governing Board

Table 3: Characteristics of people in Cochrane's Central Executive Team

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Field
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Tot

	Dec 2018	Dec 2019	Dec 2020	Jul 2021
Total number in Central Executive Team	92	93	114	115
Number from low and middle income countries	2 (2%)	2 (2%)	1 (1%)	2 (2%)
Number from countries other than Australia, Canada, UK and USA	29 (32%)	26 (28%)	31 (27%)	33 (29%)
Number who are female or non-binary	67 (73%)	67 (72%)	84 (74%)	89 (77%)
Number with a main language other than English	Unknown	Unknown	Unknown	Unknown



Equity Gaps in EBHC

Table 4: Characteristics of Cochrane members, authors and contributors

	December 2018	December 2019	December 2020	July 2021
Total Cochrane members	10,700	10,700	10,700	12,700
Proportion of members from low and middle income countries	7%	10%	10%	12%
Proportion of members from countries other than Australia, Canada, UK, USA	56%	59%	64%	67%
Proportion of members using web browsers in a language other than English	41%	40%	44%	47%

Table 5: Characteristics of people using the Cochrane Library website

	Dec 2018	Dec 2019	Dec 2020	Sep 2021
Total number of unique visitors in past 12 months	2,312,647	8,703,683	9,135,619	7,419,499
Proportion from low and middle income countries	7%	10%	10%	12%
Proportion from countries other than Australia, Canada, UK, USA	56%	59%	64%	67%
Proportion using web browsers in a language other than English	41%	40%	44%	47%

“There are about 9 million visitors to the Cochrane Library website each year. Of these, about 12% of visitors access the site from low and middle income countries and 47% use web browsers in a language other than English”



Equity Gaps in EBHC

When primary research doesn't report equity factors

Evidence to recommendations: Methods used for assessing health equity and human rights considerations in COVID-19 and aviation

Interim guidance
23 December 2020



Template 2b for assessing reporting and data stratification by health equity and human rights considerations in studies of public health measures related to COVID-19 and aviation

Instructions: complete Template 2b for the included primary sources of data *as a study line list*.

Sample graphical representation of reported factors across individual studies.

HE/HR reporting in primary data sources	Any* mention	P	R	O	G	R	E	S	S	C	AND	A	L	S
Study 1	Present	Present	Absent	Present	Present	Absent	Absent	Absent	Unknown	Present	Absent	Present	Absent	Absent
Study 2	Present	Present	Absent	Absent	Absent	Present	Absent	Absent	Unknown	Absent	Absent	Absent	Present	Absent
Study 3	Present	Absent	Absent	Absent	Absent	Present	Absent	Present	Unknown	Absent	Present	Absent	Absent	Absent
Study 4	Present	Present	Present	Absent	Present	Absent	Absent	Absent	Unknown	Absent	Absent	Present	Absent	Present
Study 5	Present	Absent	Absent	Present	Absent	Present	Absent	Absent	Unknown	Present	Absent	Present	Present	Absent
Study 6	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Unknown	Absent	Absent	Absent	Absent	Absent
Study 7	Present	Present	Absent	Absent	Present	Present	Present	Absent	Unknown	Absent	Absent	Present	Absent	Absent

Abbreviations: HE = health equity; HR = human rights.

* of any PROGRESS-Plus factor. PROGRESS-CANDALS: place of residence; race/ethnicity; occupation; gender/sex; religion; education; socioeconomic status; social capital; citizenship; ability, neurotypicality or neurodiversity, disability; age; literacy/fluency in universal language; size/BMI/body habitus.

Legend for reporting of PROGRESS-CANDALS:

Present	Absent	Unknown
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International Travel and Health (ITH) guideline development group (GDG) for COVID-19



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Equity Gaps in EBHC

When primary research doesn't report equity factors

PLOS DIGITAL HEALTH

RESEARCH ARTICLE

Sources of bias in artificial intelligence that perpetuate healthcare disparities—A global review

Leo Anthony Celli^{1,2,3}, Jacqueline Cellini⁴, Marie-Laure Charpignon⁵, Edward Christopher Dee⁶, Franck Dernoncourt⁷, Rene Eber⁸, William Greig Mitchell^{9*}, Lama Moukheiber¹⁰, Julian Schirmer⁸, Julia Situ¹¹, Joseph Paguio¹², Joel Park¹³, Judy Gichoya Wawira¹⁴, Seth Yao¹², for MIT Critical Data

“U.S. and Chinese datasets and authors were disproportionately overrepresented in clinical AI, and almost all of the top 10 databases and author nationalities were from high income countries (HICs)”.

Original Investigation

ONLINE ONLY FREE

August 15, 2019

Disparity of Race Reporting and Representation in Clinical Trials Leading to Cancer Drug Approvals From 2008 to 2018

Jonathan M. Loree, MD¹; Seerat Anand, MBBS²; Arvind Dasari, MD²; [et al](#)

[» Author Affiliations](#) | [Article Information](#)

JAMA Oncol. 2019;5(10):e191870. doi:10.1001/jamaoncol.2019.1870



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Equity Progress in EBHC

1. Equity frameworks.

- PROGRESS PLUS
- GRADE equity guidelines

10 Equity
What would be the impact on health equity?

JUDGEMENT

Reduced
 Probably reduced
 Probably no impact
 Probably increased
 Increased
 Varies
 Don't know

Detailed judgements

RESEARCH EVIDENCE

GRADE

- **PROGRESS** refers to:

- Place of residence
- Race/ethnicity/culture/language
- Occupation
- Gender/sex
- Religion
- Education
- Socioeconomic status
- Social capital

- Equity-Focused Knowledge translation (EqKT) Framework
- NIHR-INCLUDE Ethnicity Framework
- Health Equity Measurement Framework
- SAGER (Sex and Gender Equity in Research)
- ETRs Health Equity Framework

- **Plus** refers to:

- 1) personal characteristics associated with discrimination (e.g. age, disability)
- 2) features of relationships (e.g. smoking parents, excluded from school)
- 3) time-dependent relationships (e.g. leaving the hospital, respite care, other instances where a person may be temporarily at a disadvantage)

Equity Progress in EBHC

2. Reporting guidelines.

- CONSORT-Equity 2017 (*trials*)
- PRISMA -Equity 2012 (*systematic reviews*)
- Reporting Guidance for observational studies

3. Research groups.

4. Evidence 4 Equity (Evidence summaries).

5. Advocacy for health equity.

6. Leadership programs, partnerships.



**Cochrane Methods
Equity**

Trusted evidence.
Informed decisions.
Better health.

The Campbell and Cochrane Equity
Methods Group is registered with
Cochrane and the Campbell
Collaboration.



Review > [Milbank Q. 2015 Jun;93\(2\):392-437. doi: 10.1111/1468-0009.12112.](#)

Advocacy for health equity: a synthesis review

Linden Farrer¹, Claudia Marinetti¹, Yoline Kuipers Cavaco¹, Caroline Costongs¹

Affiliations + expand

PMID: 26044634 PMCID: PMC4462882 DOI: 10.1111/1468-0009.12112



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Recommendations 4 EBHC

- There is some progress but much still to be done for EBHC impact on equity.
- Prioritize research & review questions that address health equity.
- Better inclusion, design, collection & analysis of equity relevant data.
- Commitment to justice in health care with accompanying funding.
- More patient, public and community advisory board involvement in guideline development.
- More advocacy and interdisciplinary partnerships for equity in EBHC.



Acknowledgments

Taryn Young

Jimmy Volmink

Lawrence Mbuagbaw

The End!



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