**Appendix: Search Methods**

Search strategy for Prevention Research Synthesis (PRS) database

* Pre-exposure prophylaxis (PrEP) 2000 – present
1. MEDLINE (OVID)
2. CINAHL (EBSCOhost)
3. EMBASE (OVID)
4. PsycINFO (OVID)

Notes:

* Search update is implemented annually for the previous two years to cover publication/indexing lag.
* Each database and year are uploaded as a separate batch (e.g., PrEP review MEDLINE 2020, Risk Reduction review PsycINFO 2021).
* This **review search was restricted to PrEP upload batches ONLY**; therefore, only citations retrieved from MEDLINE, CINAHL, EMBASE and PsycINFO with the PrEP searches were queried.
* The manual search for citations includes a hand search of journals with a high yield of subject specific citations, contacts in the field, and reference list checks.
* More information on the search methods for the Prevention Research Synthesis (PRS) database are available at <https://www.cdc.gov/hiv/research/interventionresearch/prs/index.html>
* **Search dates:** August 29, 2023
* **Search of the PrEP batches of the PRS Database for this review:**

Published Year: 2012 – 2023

Fields: (title, abstract, keywords):

Keywords: ( artificial intelligence|machine learn\*|natural language|chatbot\*|automat\*) AND (prep|pre-exposure prophylaxis|preexposure prophylaxis )

**N = 56**

**MEDLINE (OVID) PrEP Search**

/ = MeSH term

ti = title, ab = abstract

$ = truncation, adj = adjacency

HIV or AIDS or STD MeSH and Keywords

1. HIV infections/
2. AIDS/
3. Sexually Transmitted Diseases/
4. HIV seropositivity/
5. HIV seronegativity/
6. AIDS serodiagnosis/
7. Hepatitis C/
8. HIV.ti,ab
9. (AIDS not hearing).ti,ab
10. Hepatitis C.ti,ab
11. HCV.ti,ab
12. Sexually transmitted disease$.ti,ab
13. Sexually transmitted infection$.ti,ab
14. (STD or STDs or STI or STIs).ti,ab
15. or/1-14

PrEP MeSH and Keywords

1. Pre-Exposure Prophylaxis/
2. Chemoprevention/
3. Pre exposure prophylaxis.ti,ab
4. Preexposure prophylaxis.ti,ab
5. PrEP.ti,ab
6. (Chemoprophylaxis or Chemo prophylaxis or chemoprevention).ti,ab
7. or/16-21
8. 15 and 22

Years = 2000 to present

**CINAHL (EBSCOhost) PrEP search**

MH = CINAHL Headings

TI = title, AB = abstract

\* = truncation

HIV or AIDS or STD Indexing and Keywords

1. (MH "HIV Infections")
2. (MH "Acquired Immunodeficiency Syndrome")
3. (MH "Sexually Transmitted Diseases")
4. (MH "HIV Seropositivity")
5. (MH "HIV Seronegativity")
6. (MH "AIDS Serodiagnosis")
7. (MH "Hepatitis C")
8. TI HIV OR AB HIV
9. TI ( (AIDS not hearing) ) OR AB ( (AIDS not hearing) )
10. TI Sexually transmitted disease\* OR AB Sexually transmitted disease\*
11. TI Sexually transmitted infection\* OR AB Sexually transmitted infection\*
12. TI ( STD or STDs or STI or STIs ) OR AB ( STD or STDs or STI or STIs )
13. TI Hepatitis C OR AB Hepatitis C
14. TI HCV OR AB HCV
15. or/1-14

PrEP Indexing AND Keywords

1. (MH "Pre-Exposure Prophylaxis")
2. TI Pre exposure prophylaxis OR AB Pre exposure prophylaxis
3. TI Preexposure prophylaxis OR AB Preexposure prophylaxis
4. TI PrEP OR AB PrEP
5. (MH "Chemoprevention")
6. TI Chemoprophylaxis OR AB Chemoprophylaxis
7. TI Chemo prophylaxis OR AB Chemo prophylaxis
8. TI Chemoprevention OR AB Chemoprevention
9. or/16-23
10. 15 AND 24

Years = 2000 to present

**EMBASE (OVID) PrEP search**

/ = MeSH term

ti = title, ab = abstract

$ = truncation

HIV or AIDS or STD Indexing and Keywords

1. Human Immunodeficiency Virus Infection/
2. Acquired Immune Deficiency Syndrome/
3. Sexually Transmitted Diseases/
4. Serodiagnosis/
5. Hepatitis C virus/
6. HIV.ti,ab
7. (AIDS not hearing).ti,ab
8. Hepatitis C.ti,ab
9. HCV.ti,ab
10. Sexually transmitted disease$.ti,ab
11. Sexually transmitted infection$.ti,ab
12. (STD or STDs or STI or STIs).ti,ab
13. or/1-12

PrEP Indexing and Keywords

1. Pre-Exposure Prophylaxis/
2. Pre exposure prophylaxis.ti,ab
3. Preexposure prophylaxis.ti,ab
4. PrEP.ti,ab
5. (Chemoprophylaxis or Chemo prophylaxis or chemoprevention).ti,ab
6. or/14-18
7. 13 and 19

Years: 2000 – present

**PsycINFO OVID PrEP search**

/ = MeSH term

ti = title, ab = abstract

$ = truncation

HIV or AIDS or STD Indexing and Keywords

1. HIV/
2. AIDS/
3. AIDS Prevention/
4. Sexually Transmitted Diseases/
5. Hepatitis/
6. HIV.ti,ab
7. (AIDS not hearing).ti,ab
8. Hepatitis C.ti,ab
9. HCV.ti,ab
10. Sexually transmitted disease$.ti,ab
11. Sexually transmitted infection$.ti,ab
12. (STD or STDs or STI or STIs).ti,ab
13. or/1-12

PrEP Indexing and Keywords

1. Pre exposure prophylaxis.ti,ab
2. Preexposure prophylaxis.ti,ab
3. PrEP.ti,ab
4. (Chemoprophylaxis or chemo prophylaxis or chemoprevention).ti,ab
5. or/14-17
6. 13 and 18

Years = 2000 to present

**SUPPLEMENTAL SEARCHES**

Searched 2022-2023 with a smaller, targeted search to find current, relevant information for the review that was not captured in the original searches due to publication/indexing lag/problems.

**Searched: August 29, 2023**

**Total citations found = 3**

**Google Scholar** [2022-2023] [no additional citations found]

“HIV” AND (“pre-exposure prophylaxis” OR “preexposure prophylaxis” OR “prep”) AND (“artificial intelligence” OR "machine learn\*" OR "natural language" OR “chatbot” OR “automat\*”)

**PubMed** [2022-2023] **n = 3**

( (HIV[Title]) AND ((pre-exposure prophylaxis[Title/Abstract]) OR (preexposure prophylaxis[Title/Abstract]) or (prep[Title/Abstract])) AND ((artificial intelligence [Title/Abstract]) OR (machine learn\*[Title/Abstract]) OR (natural language [Title/Abstract]) OR (chatbot [Title/Abstract]) OR (automat\* chat [Title/Abstract]))

**Scopus** [2022-2023] [no additional citations found]

( TITLE-ABS-KEY ( hiv ) AND TITLE-ABS-KEY ( pre-exposure prophylaxis OR PrEP OR preexposure prophylaxis ) AND TITLE-ABS-KEY ( artificial intelligence OR machine learning OR natural language OR chat\* OR automat\*) )

**UPDATE SEARCHES**

Searched 2023 with a smaller, targeted search to find newly published studies.

**Searched: November 2, 2023**

**Total citations found = 2**

**Google Scholar** [2023] [no additional citations found]

“HIV” AND (“pre-exposure prophylaxis” OR “preexposure prophylaxis” OR “prep”) AND (“artificial intelligence” OR "machine learn\*" OR "natural language" OR “chatbot” OR “automat\*”)

**PubMed** [2023] **n = 2**

( (HIV[Title]) AND ((pre-exposure prophylaxis[Title/Abstract]) OR (preexposure prophylaxis[Title/Abstract]) or (prep[Title/Abstract])) AND ((artificial intelligence [Title/Abstract]) OR (machine learn\*[Title/Abstract]) OR (natural language [Title/Abstract]) OR (chatbot [Title/Abstract]) OR (automat\* chat [Title/Abstract]))

**Scopus** [2023] [no additional citations found]

( TITLE-ABS-KEY ( hiv ) AND TITLE-ABS-KEY ( pre-exposure prophylaxis OR PrEP OR preexposure prophylaxis ) AND TITLE-ABS-KEY ( artificial intelligence OR machine learning OR natural language OR chat\* OR automat\*) )