Systematic review

Give the working title of the review, for example the one used for obtaining funding. Ideally the title should state succinctly the interventions or exposures being reviewed and the associated health or social problems. Where appropriate, the title should use the PI(E)OS structure to contain information on the Participants, Intervention (or Exposure) and Comparison groups, the Outcomes to be measured and Study designs to be included.

Disparities in receiving a provider recommendation for HPV vaccination among US adolescents: a systematic review

2. Original language title.
For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.

3. *Anticipated or actual start date.*
Give the date when the systematic review commenced, or is expected to commence.
27/01/2020

4. *Anticipated completion date.*
Give the date by which the review is expected to be completed.
31/07/2020

5. *Stage of review at time of this submission.*
Indicate the stage of progress of the review by ticking the relevant Started and Completed boxes. Additional information may be added in the free text box provided.
Please note: Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. Should evidence of incorrect status and/or completion date being supplied at the time of submission come to light, the content of the PROSPERO record will be removed leaving only the title and named contact details and a statement that inaccuracies in the stage of the review date had been identified.
This field should be updated when any amendments are made to a published record and on completion and publication of the review. If this field was pre-populated from the initial screening questions then you are not able to edit it until the record is published.

The review has not yet started: No
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<table>
<thead>
<tr>
<th>Review stage</th>
<th>Started</th>
<th>Completed</th>
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<tbody>
<tr>
<td>Preliminary searches</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Piloting of the study selection process</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Formal screening of search results against eligibility criteria</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Data extraction</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Risk of bias (quality) assessment</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Data analysis</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Provide any other relevant information about the stage of the review here (e.g. Funded proposal, protocol not yet finalised).

6. *Named contact.*

The named contact acts as the guarantor for the accuracy of the information presented in the register record.

Melissa Gilkey

**Email salutation (e.g. "Dr Smith" or "Joanne") for correspondence:**

Dr. Gilkey

7. *Named contact email.*

Give the electronic mail address of the named contact.

gilkey@email.unc.edu

8. **Named contact address**

Give the full postal address for the named contact.

317 Rosenau Hall, CB #7440, Chapel Hill, NC 27599, USA

9. **Named contact phone number.**

Give the telephone number for the named contact, including international dialling code.

+1-(919)-966-8650

10. *Organisational affiliation of the review.*

Full title of the organisational affiliations for this review and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

University of Minnesota and University of North Carolina

Organisation web address:

11. *Review team members and their organisational affiliations.*

Give the title, first name, last name and the organisational affiliations of each member of the review team.
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International prospective register of systematic reviews

Affiliation refers to groups or organisations to which review team members belong.

Dr Melissa Gilkey, University of North Carolina
Dr Annie-Lauri McRee, University of Minnesota
Dr Gabriela Bustamante, University of Minnesota
Ms Shirley Kong, University of North Carolina
Ms Isabella Palloto, University of North Carolina
Mr Gray Rogers, University of North Carolina
Ms Rebecca Carlson, University of North Carolina

12. *Funding sources/sponsors.*

Give details of the individuals, organizations, groups or other legal entities who take responsibility for initiating, managing, sponsoring and/or financing the review. Include any unique identification numbers assigned to the review by the individuals or bodies listed.

R21 CA241518
2T32 CA163184

13. *Conflicts of interest.*

List any conditions that could lead to actual or perceived undue influence on judgements concerning the main topic investigated in the review.

None


Give the name and affiliation of any individuals or organisations who are working on the review but who are not listed as review team members.


State the question(s) to be addressed by the review, clearly and precisely. Review questions may be specific or broad. It may be appropriate to break very broad questions down into a series of related more specific questions. Questions may be framed or refined using PI(E)COS where relevant.

What are disparities in the receipt of a provider recommendation for HPV vaccination among US adolescents?


State the sources that will be searched. Give the search dates, and any restrictions (e.g. language or publication period). Do NOT enter the full search strategy (it may be provided as a link or attachment.)

We will search PubMed, EMBASE, Scopus, and PsycINFO as sources of publications. We will include English-language quantitative and qualitative studies conducted in the United States (excluding commentaries, reviews and conference abstracts) and published between 2012 and 2019.

17. *URL to search strategy.*

Give a link to a published pdf/word document detailing either the search strategy or an example of a search strategy for a specific database if available (including the keywords that will be used in the search strategies), or upload your search strategy. Do NOT provide links to your search results.

Alternatively, upload your search strategy to CRD in pdf format. Please note that by doing so you are consenting to the file being made publicly accessible.
18. *Condition or domain being studied.*

Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.

Vaccination against the human papillomavirus (HPV) is a highly effective protection measure against genital warts, cervical cancer and other cancer types including oral, anal, vaginal and vulvar. Increasing HPV vaccination coverage in the United States means that future interventions to improve provider communication should target populations/geographic regions with low levels of recommendations. Recent research continues to suggest that populations at higher risk for HPV cancers less often get recommendations. Although differences by sex have narrowed, NIS-Teen data suggest substantial disparities in recommendations by state and other demographic characteristics of the adolescent.

19. *Participants/population.*

Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.

Inclusion: adolescents, ages 9-17, and their parents/guardians, seen in clinical settings in the United States
Exclusion: adolescents seen by dental health professionals or community health workers.

20. *Intervention(s), exposure(s).*

Give full and clear descriptions or definitions of the nature of the interventions or the exposures to be reviewed.

We will assess variation in receipt of a provider recommendation for HPV vaccination by adolescent characteristics including race/ethnicity, age, sex, rurality, and state.

21. *Comparator(s)/control.*

Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group). The preferred format includes details of both inclusion and exclusion criteria.

Not applicable.

22. *Types of study to be included.*
Give details of the types of study (study designs) eligible for inclusion in the review. If there are no restrictions on the types of study design eligible for inclusion, or certain study types are excluded, this should be stated. The preferred format includes details of both inclusion and exclusion criteria.

We will include any study design using quantitative and qualitative. We will exclude non-peer-reviewed articles, commentaries, reviews and conference abstracts.

Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.
Clinical settings in the U.S. in which HPV vaccine is administered, including private practices, health departments, school-based health centers, pharmacies, and mass vaccination clinics in schools. Studies about dentists and community health workers will be excluded.

24. * Main outcome(s).
Give the pre-specified main (most important) outcomes of the review, including details of how the outcome is defined and measured and when these measurement are made, if these are part of the review inclusion criteria.
Provider recommendation for HPV vaccination, defined as communication by a provider that an adolescent should receive HPV vaccine.

Timing and effect measures
N/A

25. * Additional outcome(s).
List the pre-specified additional outcomes of the review, with a similar level of detail to that required for main outcomes. Where there are no additional outcomes please state ‘None’ or ‘Not applicable’ as appropriate to the review
None

Timing and effect measures
N/A

26. * Data extraction (selection and coding).
Describe how studies will be selected for inclusion. State what data will be extracted or obtained. State how this will be done and recorded.
We will export studies from our searches into Covidence for screening and de-duplication. Two investigators will independently screen the titles and abstracts for potentially eligible studies. Two investigators will then independently review the full text of all potentially eligible studies to assess eligibility. Disagreements will be resolved by discussion and consensus. A third investigator will arbitrate unresolved disagreements as needed.
Two investigators will independently extract data from each selected study using a standardized data extraction form. We will resolve differences between the two investigators by discussion and consensus with
third investigator arbitrating if needed. We will contact the study authors and request more information if needed.

27. *Risk of bias (quality) assessment.*
Describe the method of assessing risk of bias or quality assessment. State which characteristics of the studies will be assessed and any formal risk of bias tools that will be used.
Two investigators will independently assess the risk of bias in each included study using the ROBINS-I (Risk Of Bias In Non-randomised Studies- of Interventions) tool for Non-RCTs. Disagreement between the two investigators was resolved by discussion and consensus.

Provide details of the planned synthesis including a rationale for the methods selected. This must not be generic text but should be specific to your review and describe how the proposed analysis will be applied to your data.
Findings will be summarized qualitatively by each demographic characteristics considered.

29. *Analysis of subgroups or subsets.*
State any planned investigation of ‘subgroups’. Be clear and specific about which type of study or participant will be included in each group or covariate investigated. State the planned analytic approach.
Non-applicable

30. *Type and method of review.*
Select the type of review and the review method from the lists below. Select the health area(s) of interest for your review.

**Type of review**
- Cost effectiveness
- No
- Diagnostic
- No
- Epidemiologic
- No
- Individual patient data (IPD) meta-analysis
- No
- Intervention
- No
- Meta-analysis
- No
- Methodology
- No
- Narrative synthesis
- No
- Network meta-analysis
- No
- Pre-clinical
- No
- Prevention
No
Prognostic
No
Prospective meta-analysis (PMA)
No
Review of reviews
No
Service delivery
Yes
Synthesis of qualitative studies
No
Systematic review
Yes
Other
No

Health area of the review
Alcohol/substance misuse/abuse
No
Blood and immune system
No
Cancer
Yes
Cardiovascular
No
Care of the elderly
No
Child health
Yes
Complementary therapies
No
Crime and justice
No
Dental
No
Digestive system
No
Ear, nose and throat
No
Education
No
Endocrine and metabolic disorders
No
Eye disorders
No
General interest
No
Genetics
No
Health inequalities/health equity
Yes
Infections and infestations
Yes
International development
No
Mental health and behavioural conditions
No
Musculoskeletal
No
Neurological
No
Nursing
No
Obstetrics and gynaecology
No
Oral health
No
Palliative care
No
Perioperative care
No
Physiotherapy
No
Pregnancy and childbirth
No
Public health (including social determinants of health)
Yes
Rehabilitation
No
Respiratory disorders
No
Service delivery
Yes
Skin disorders
No
Social care
No
Surgery
No
Tropical Medicine
No
Urological
No
Wounds, injuries and accidents
No
Violence and abuse
No

31. Language.
Select each language individually to add it to the list below, use the bin icon to remove any added in error.
English

There is not an English language summary

Select the country in which the review is being carried out from the drop down list. For multi-national collaborations select all the countries involved.
United States of America

33. Other registration details.
Give the name of any organisation where the systematic review title or protocol is registered (such as with The Campbell Collaboration, or The Joanna Briggs Institute) together with any unique identification number assigned. (N.B. Registration details for Cochrane protocols will be automatically entered). If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here. If none, leave blank.

34. Reference and/or URL for published protocol.
Give the citation and link for the published protocol, if there is one
Give the link to the published protocol.
Alternatively, upload your published protocol to CRD in pdf format. Please note that by doing so you are consenting to the file being made publicly accessible.

No I do not make this file publicly available until the review is complete
Please note that the information required in the PROSPERO registration form must be completed in full even if access to a protocol is given.

35. Dissemination plans.
Give brief details of plans for communicating essential messages from the review to the appropriate audiences.

Our findings will be summarized in a manuscript and prepared for peer-reviewed publication.

Do you intend to publish the review on completion?
Yes

36. Keywords.
Give words or phrases that best describe the review. Separate keywords with a semicolon or new line. Keywords will help users find the review in the Register (the words do not appear in the public record but are included in searches). Be as specific and precise as possible. Avoid acronyms and abbreviations unless these are in wide use.

37. Details of any existing review of the same topic by the same authors.
Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.

38. * Current review status.
Review status should be updated when the review is completed and when it is published. For new registrations the review must be Ongoing.
39. Any additional information.

Provide any other information the review team feel is relevant to the registration of the review.

40. Details of final report/publication(s).

This field should be left empty until details of the completed review are available.

Give the link to the published review.