

Literature Search & Other Data Sources

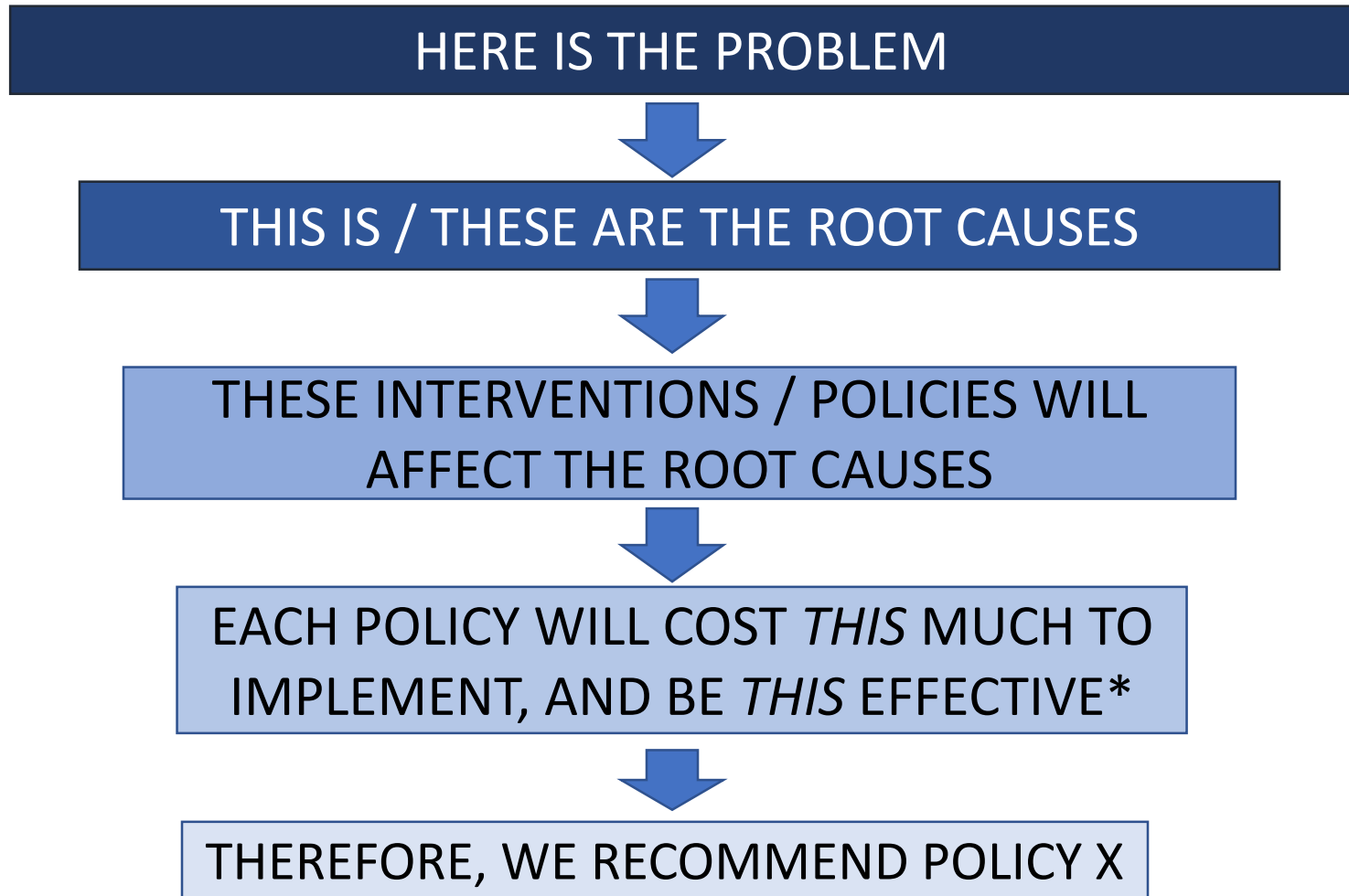
Learning Objectives

At the end of this module, you will be able to:

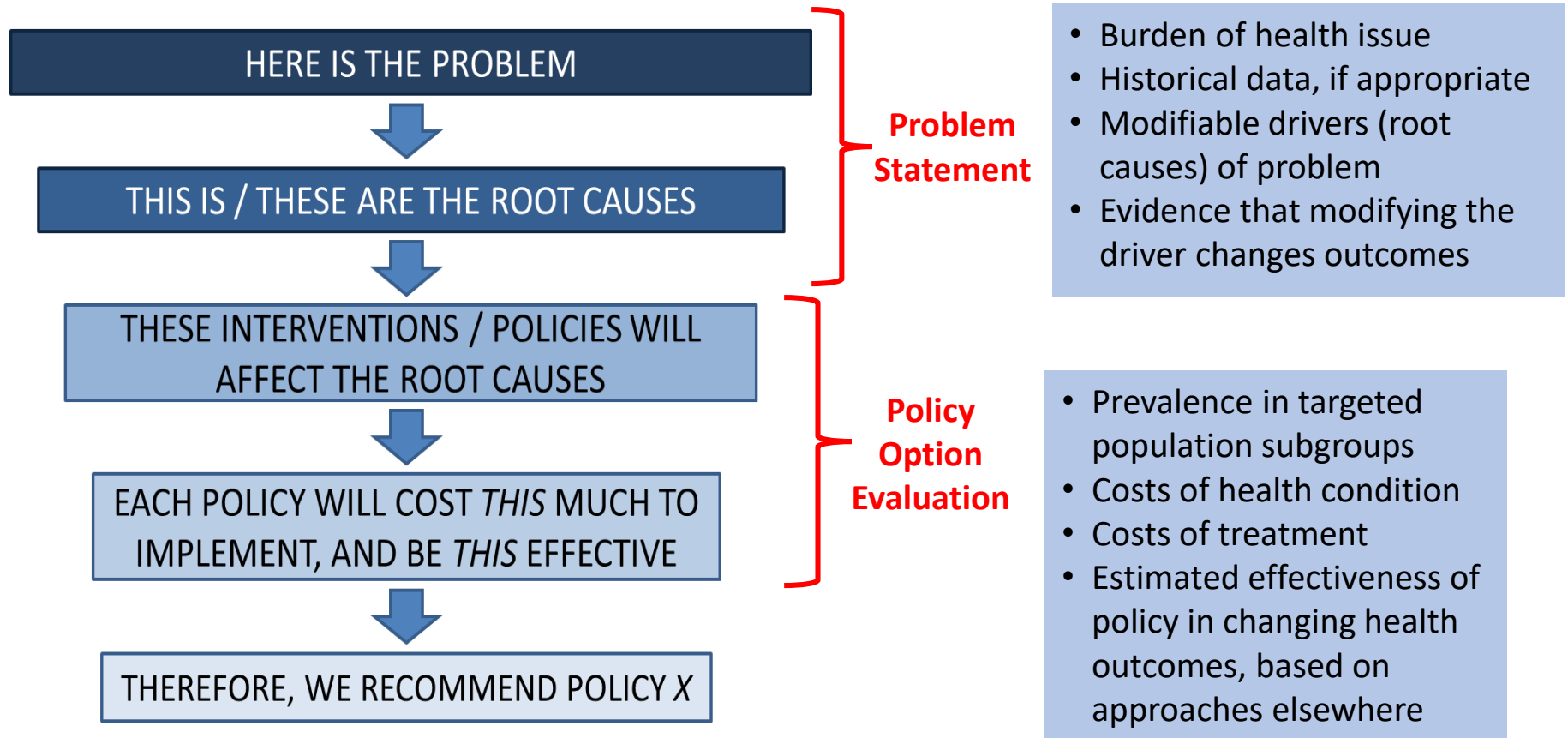
- **Identify various sources of data for your policy brief**
- **Use PubMed to access scientific literature**
- **Use GoogleScholar and other sources to access literature and reports**
- **Use specific terms to refine your searches**



Narrative / Storyline of a Policy Brief



Where Will I Need Data?



Where Can I Find These Data?

- **Published data (peer-reviewed journal articles)**
 - Single studies
 - Systematic reviews/meta-analyses (article summarizing many studies)
- **Unpublished data**
 - Authoritative Reports
 - Government public health institutions (MMWR, Ministry annual reports of vital statistics, routinely-collected health data)
 - International organizations (WHO, UNAIDS, UNICEF), NGOs
 - Medical associations
 - Other local data
 - Outbreak data
 - Survey data
 - Studies of consumers' views regarding a health issue
 - Cost-effectiveness evaluations

Single Study vs Systematic Reviews



American Journal of Epidemiology
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Vol. 156, No. 5
Printed in U.S.A.
DOI: 10.1093/aje/kw0081

Association of Helmet Use with Death in Motorcycle Crashes: A Matched-Pair Cohort Study

Daniel C. Norvell and Peter Cummings

From the Harborview Injury Prevention and Research Center, Seattle, WA, and the Department of Epidemiology, University of Washington School of Public Health and Community Medicine, Seattle, WA.

Received February 27, 2002; accepted April 25, 2002.

The association of helmet use with death in a motorcycle crash can be estimated using matched-pair cohort methods. By estimating effects among naturally matched pairs on the same motorcycle, one can account for potential confounding by motorcycle characteristics, crash characteristics, and other factors that may influence the outcome. The authors used Fatality Analysis Reporting System data, from 1980 through 1998, for motorcycles that crashed with two riders and either the driver or the passenger, or both, died. For their main analysis, the authors estimated the relative risk of death using conditional Poisson regression. The relative risk of death, accounting for the matching on motorcycle and adjusted for age, sex, and seat position, for a helmeted rider compared with an unhelmeted rider was 0.61 (95% confidence interval: 0.54, 0.70). The authors suggest that conditional Poisson regression is useful for the analysis of traffic crash data, where occupants are naturally matched in a vehicle and where crash-related confounders may be difficult or impossible to measure. *Am J Epidemiol* 2002;156:483–7.

accidents; cohort studies; epidemiologic methods; head protective devices; matched-pair analysis; motorcycles; Poisson distribution; traffic

Abbreviation: CI, confidence interval.

About half of all fatalities to motorcyclists from 1979 through 1986 were attributed to head injury (1). In 1998, 2,284 motorcyclists were killed, and an additional 49,000 were injured in traffic crashes in the United States (2). Per mile traveled in 1997, motorcyclists were about 14 times more likely to die compared with car occupants (2).

A few studies have estimated the relative risk of death among those helmeted compared with those not helmeted; estimates range from 0.54 to 0.72 (3–5). The risk ratio for death, for those wearing a helmet compared with those not wearing one, can be estimated using matched-pair cohort methods (5–10). The study population is motorcycle driver-passenger pairs who crashed on the same motorcycle. By estimating effects among these naturally matched pairs, we can account for potential confounding by motorcycle make and model and by crash characteristics such as speed, type of crash, response time of ambulance personnel, and other factors that may influence the outcome. Within these pairs there may still be differences between drivers and passengers

with regard to individual-level factors, such as age, sex, and seat position. Assuming that we can measure the potential confounding factors not accounted for by matching, we can usually control for them by using stratified or regression methods (10). We undertook to estimate the association between helmet use and death using several analytic methods for matched-pair cohort data.

MATERIALS AND METHODS

Study sample

The National Highway Traffic Safety Administration operates the Fatality Analysis Reporting System, which collects information regarding all US crashes on public roads that result in a fatality within 30 days (2). Each case has more than 100 coded data elements that characterize the crash, the vehicles, and the people involved. Although the data are detailed in terms of crash-related factors such as speed, most

“We used Fatality Analysis Reporting System data from 1980-1998...to estimate the association between helmet use and death using... matched-pair cohort data.”

Single Study vs Systematic Reviews



Helmets for preventing injury in motorcycle riders (Review)

Liu BC, Ivers R, Norton R, Boufous S, Blows S, Lo SK

Liu BC, Ivers R, Norton R, Boufous S, Blows S, Lo SK.
Helmets for preventing injury in motorcycle riders.
Cochrane Database of Systematic Reviews 2008, Issue 1. Art. No.: CD004333.
DOI: 10.1002/14651858.CD004333.pub3.

www.cochranelibrary.com

Helmets for preventing injury in motorcycle riders (Review)
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“We searched the Cochrane Injuries Group Specialised Register, Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, Transportation Research Information Services (TRIS) International Transport Research Documentation (ITRD), ATRI (Australian Transport Index), and Science Citation Index for relevant articles.

Websites of traffic and road safety research bodies including government agencies were also searched.

Reference lists from topic reviews, identified studies and bibliographies were examined for relevant articles.”

Comparing Sources

Source	Strengths	Weaknesses
Published data	<ul style="list-style-type: none">• Original sources for studies on different diseases & systematic reviews• Peer review means that papers must meet some standard of quality (quality of peer review depends on journal)	<ul style="list-style-type: none">• Can be difficult to find the most important articles• Articles are of varying quality• Single studies can contradict each other

Where to Search

Data source	Where to search
Published data (journal articles)	<ul style="list-style-type: none">• PubMed and other bibliographic databases• Google & Google Scholar
Unpublished data	<ul style="list-style-type: none">• Google (authoritative reports)• Weekly, quarterly, or annual data reports from MoH• Regional / district health office data or databases• Websites of local NGOs or health organizations

Review Question: Data Sources

Q: What are the two main types of data for your policy briefs?

Review Question: Data Sources

Q: What are the two main types of data for your policy briefs?

- 1. Published data (single studies & systematic reviews)*
- 2. Unpublished data (authoritative reports and local data)*

How to Search PubMed

What is PubMed?

- Searchable database of ~27 million scientific journal articles
- <https://www.ncbi.nlm.nih.gov/pubmed/>

The screenshot shows the PubMed website interface. At the top, there's a navigation bar with 'NCBI', 'Resources', and 'How To' links. The main header features the 'PubMed.gov' logo, 'US National Library of Medicine', and 'National Institutes of Health'. A search bar is prominently displayed with a dropdown menu set to 'PubMed' and a 'Search' button. Below the search bar, a large banner for 'PubMed' states: 'PubMed comprises more than 26 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.' To the right of the banner is a 'PubMed Commons' section with a 'Featured comment - May 3' about assessing the risk of chronic kidney disease with proton pump inhibitor use. Below the banner, there are three main sections: 'Using PubMed' (with links to Quick Start Guide, Full Text Articles, FAQs, Tutorials, and New and Noteworthy), 'PubMed Tools' (with links to Mobile, Single Citation Matcher, Batch Citation Matcher, Clinical Queries, and Topic-Specific Queries), and 'More Resources' (with links to MeSH Database, Journals in NCBI Databases, Clinical Trials, E-Utilities (API), and LinkOut). The footer contains a 'You are here' breadcrumb trail, a 'Write to the Help Desk' link, and several columns of links under headings: 'GETTING STARTED', 'RESOURCES', 'POPULAR', 'FEATURED', and 'NCBI INFORMATION'. At the very bottom, there's contact information for the National Center for Biotechnology Information and various logos including the USA.gov logo.

How Does PubMed Work?

“search terms” typed into the search box return scientific articles related to the terms

The screenshot displays the PubMed website interface. At the top, there is a navigation bar with links for "NCBI", "Resources", "How To", and "Sign in to NCBI". Below this, the "PubMed" logo is visible, along with the text "US National Library of Medicine" and "National Institutes of Health". A search bar is prominently displayed with the word "PubMed" inside it, and a "Search" button to its right. A blue arrow points from the text box above to the search bar. Below the search bar, there is a section titled "PubMed" with a description: "PubMed comprises more than 26 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites." To the right of this section is a "PubMed COMMONS" section with a "Featured comment - May 3" about assessing the risk of chronic kidney disease. Below these sections, there are three columns of links: "Using PubMed" (including Quick Start Guide, Full Text Articles, FAQs, Tutorials, and New and Noteworthy), "PubMed Tools" (including Mobile, Single Citation Matcher, Batch Citation Matcher, Clinical Queries, and Topic-Specific Queries), and "More Resources" (including MeSH Database, Journals in NCBI Databases, Clinical Trials, E-Utilities (API), and LinkOut). At the bottom, there is a footer section with "You are here: NCBI > Literature > PubMed" and a "Write to the Help Desk" link. The footer also contains several columns of links: "GETTING STARTED" (NCBI Education, NCBI Help Manual, NCBI Handbook, Training & Tutorials, Submit Data), "RESOURCES" (Chemicals & Bioassays, Data & Software, DNA & RNA, Domains & Structures, Genes & Expression, Genetics & Medicine, Genomes & Maps, Homology, Literature, Proteins, Sequence Analysis, Taxonomy, Variation), "POPULAR" (PubMed, Bookshelf, PubMed Central, PubMed Health, BLAST, Nucleotide, Genome, SNP, Gene, Protein, PubChem), "FEATURED" (Genetic Testing Registry, PubMed Health, GenBank, Reference Sequences, Gene Expression Omnibus, Map Viewer, Human Genome, Mouse Genome, Influenza Virus, Primer-BLAST, Sequence Read Archive), and "NCBI INFORMATION" (About NCBI, Research at NCBI, NCBI News, NCBI FTP Site, NCBI on Facebook, NCBI on Twitter, NCBI on YouTube). The footer also includes the text "National Center for Biotechnology Information, U.S. National Library of Medicine" and "8600 Rockville Pike, Bethesda MD, 20894 USA".

What Are 'Search Terms'?

- **Key words or terms related to the question you want to ask**
- **For example, imagine you want to find data to answer the below question:**
 - *Do motorcycle helmets lead to a reduction in crash-related deaths?*
- **What are key words in this question?**

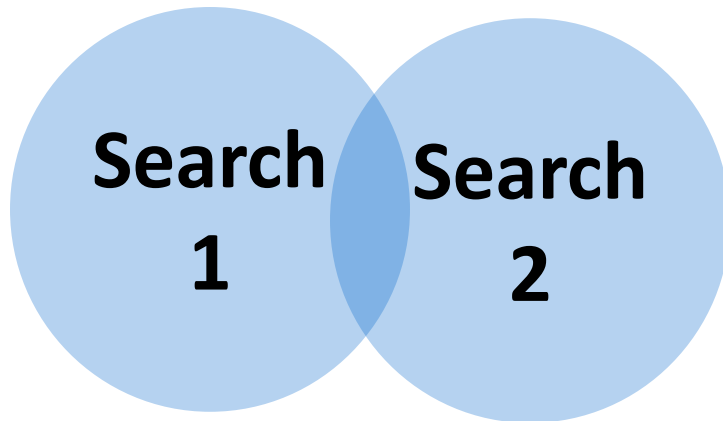
What Are 'Search Terms'?

- **Key words or terms related to the question you want to ask**
- **For example, imagine you want to find data to answer the below question:**
 - *Do motorcycle helmets lead to a reduction in crash-related deaths?*
- **Combination of terms selected matters**
 - Strike a balance between casting a wide net, and having your search terms be too 'loose'

Boolean Logic for Search Terms

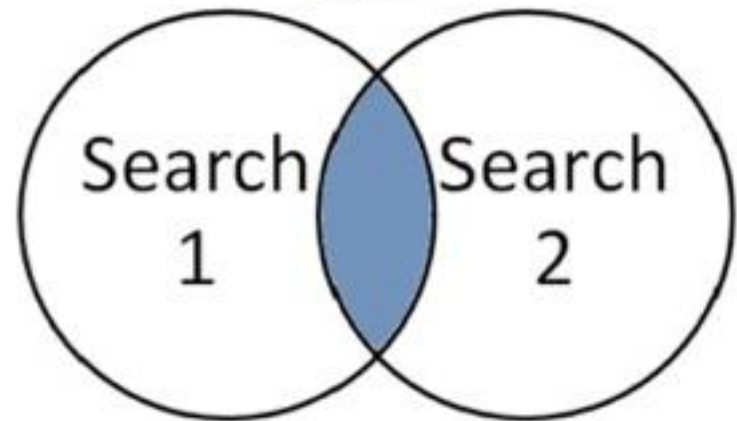
PubMed default

OR



(_____ OR _____)

AND



(_____ AND _____)

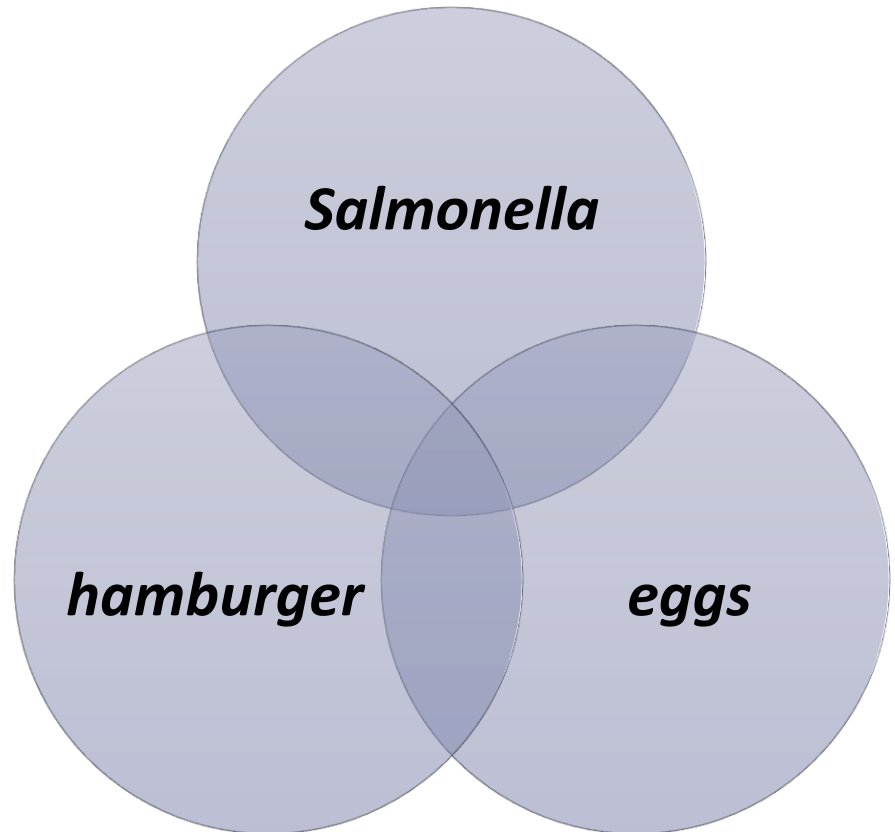
Boolean Logic for Search Terms

Boolean operators are processed left to right

Example: Salmonella AND hamburger OR eggs

Enclosing term in parentheses allows them to be read as a unit

Example: salmonella AND (hamburger OR eggs)



PubMed ▾

motorcycle helmets reduction crash deaths |

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Filter your results:

All (8)

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Search results

Items: 8

- ☐
- [Cost benefits of reduction in motor vehicle injuries with a nationwide speed limit of 65 miles per hour](#)

1. [\(mph\).](#)

Shafi S, Parks J, Gentilello L.

J Trauma. 2008 Nov;65(5):1122-5. doi: 10.1097/TA.0b013e318189a821.

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2. Liu BC, Ivers R, Norton R, Boufous S, Blows S, Lo SK.

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4. Liu B, Ivers R, Norton R, Blows S, Lo SK.

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Filter your results:

All (509)

[Free Full Text \(98\)](#)[Review \(17\)](#)[Manage Filters](#)

Search results

Items: 1 to 20 of 509

<< First < Prev Page 1 of 26 Next > Last >>

- ☐ 1. [Are automatic systems the future of motorcycle safety? A novel methodology to prioritize potential safety solutions based on their projected effectiveness.](#)

Gil G, Savino G, Piantini S, Baldanzini N, Happee R, Pierini M.
Traffic Inj Prev. 2017 May 11:0. doi: 10.1080/15389588.2017.1326594. [Epub ahead of print]
PMID: 28494162
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- ☐ 2. [Predictors of seeking financial compensation following motor vehicle trauma: inception cohort with moderate to severe musculoskeletal injuries.](#)

Murgatroyd D, Harris IA, Chen JS, Adie S, Mittal R, Cameron ID.
BMC Musculoskelet Disord. 2017 May 2;18(1):177. doi: 10.1186/s12891-017-1535-z.
PMID: 28464812 [Free PMC Article](#)
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- ☐ 3. [Intraoperative rescue extracorporeal membrane oxygenation and damage control during repair of a traumatic aortic injury.](#)

Lee SK, Gongora E, O'Donnell S, Carrillo EH, Sanchez R, Kiffin C, Davare DL, Rosenthal AA.
J Surg Case Rep. 2017 Feb 17;2017(2):rjx022. doi: 10.1093/jscr/rjx022. eCollection 2017 Feb.
PMID: 28458831 [Free PMC Article](#)
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- ☐ 4. [Validation of the abrasion resistance test protocols and performance criteria of EN13595: The probability of soft tissue injury to motorcycle riders by abrasion resistance of their clothing.](#)

Meredith L, Hurren C, Clarke E, Fitzharris M, Baldock M, de Rome L, Olivier J, Brown J.
J Safety Res. 2017 Jun;61:1-7. doi: 10.1016/j.jsr.2017.02.001. Epub 2017 Feb 20.
PMID: 28454855
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- ☐ 5. [Risk and safety perception on urban and rural roads: Effects of environmental features, driver age and risk sensitivity.](#)

Cox JA, Beanland V, Filtiness AJ.
Traffic Inj Prev. 2017 Feb 21:0. doi: 10.1080/15389588.2017.1296956. [Epub ahead of print]
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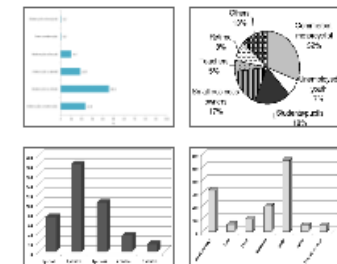
- ☐ 6. [Social and hospital costs of patients admitted to a university hospital in Brazil due to motorcycle crashes.](#)

Dos Anjos KC, de Rezende MR, Mattar R Júnior.
Traffic Inj Prev. 2017 Feb 13:1-8. doi: 10.1080/15389588.2017.1293823. [Epub ahead of print]
PMID: 28436733

Results by year

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PMC Images search for motorcycle crash

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Titles with your search terms

Elite Motorcycle Racing: Crash Types and Injury Patterns in the MotoGP [Am J Emerg Med. 2016]

The prevalence of crash risk factors in a population-based study of motorcycle [Injury. 2016]

Alcohol and drug involvement in motorcycle driver injuries in the [Drug Alcohol Depend. 2016]

[See more...](#)

Find related data

Database: Select ▾

NOT
RELEVANT

Try searching!

- Pick some key words and search in PubMed
<https://www.ncbi.nlm.nih.gov/pubmed/>
- Explore different word combinations and read the titles in your results: Do the articles look useful to you?

What if My Search Doesn't Return Enough / Relevant Results?

- **May be few articles on your topic!**
- **Consider alternate search terms**
 - Try different word endings, including plurals
 - Account for US and UK spelling or terminology
 - Include full name for abbreviations

Examples

- 1) Motorcycles: motorbikes
- 2) Helmets: protection
- 3) Deaths: morbidity, mortality, injuries, road safety
- 4) Reduction: reduce, reducing, decrease, eliminate, prevent

What Do I Do with Search Results?

- PubMed shows you article titles
- Clicking on the title reveals the abstract (usually)
- You can save articles for later perusal!

PubMed ▾

motorcycle helmets reduction crash deaths

Search

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1. [\(mph\).](#)

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PMID: 19001985

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Cochrane Database Syst Rev. 2008 Jan 23;(1):CD004333. doi: 10.1002/14651858.CD004333.pub3. Review.

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Search with PubMed: Abstract

The screenshot shows the PubMed interface for the abstract 'Helmet use and motorcycle fatalities in Taiwan' by Keng SH¹. The page layout includes a top navigation bar with 'NCBI', 'Resources', and 'How To' links, and a search bar with 'PubMed' selected. The abstract title is prominently displayed, followed by the author 'Keng SH¹' and a red arrow pointing to the 'Author information' link. The abstract text describes a study on motorcycle deaths in Taiwan from 1999 to 2001, highlighting the effectiveness of helmets. A red arrow points to the 'Full text links' section, which includes an 'Online Full-text' button. Another red arrow points to the 'Save items' section, specifically the 'Add to Favorites' button. The 'Similar articles' section is circled in red, listing several related articles, including reviews on motorcycle helmets and the impact of helmet laws. The page also features 'MeSH terms', 'LinkOut - more resources', and 'PubMed Commons' sections at the bottom.

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The negative impact of the repeal of the Arkansas motorcycle helmet law [J Trauma. 2002]
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Helmet use and motorcycle fatalities in Taiwan.
Keng SH¹.
Author information

Abstract
Motorcycle deaths accounted for more than half of total traffic fatalities in Taiwan in 2002. This study uses the police-reported crash data from Taiwan between 1999 and 2001 to estimate the effectiveness of helmets, simultaneously taking into account of sample selection bias. Sample selection arises because helmet usage will affect the probability of death or injury, which in turn influences whether a crash is included in the data. The results show that sample selection does not seriously bias the estimate of helmet effectiveness and helmets reduce the probability of death in a crash by 40%, which is higher than what was previously found. Without helmets, the number of motorcyclists killed in 2001 would have jumped by 51%. The estimated proportion of helmeted motorcyclists has increased from 71 to 78% between 1999 and 2001, suggesting that helmet use is rising after the implementation of mandatory helmet law in 1997. Also, helmets significantly reduce the likelihood of head and neck injuries in a crash by 53%, and lead to a 71% reduction in the probability of death caused by head and neck injuries.

PMID: 15667822 DOI: 10.1016/j.asep.2004.09.006
[Indexed for MEDLINE]
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 **Accident Analysis & Prevention**
Volume 37, Issue 2, March 2005, Pages 349–355



Helmet use and motorcycle fatalities in Taiwan

Shao-Hsun Keng  
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<https://doi.org/10.1016/j.aap.2004.09.006> [Get rights and content](#)

Abstract

Motorcycle deaths accounted for more than half of total traffic fatalities in Taiwan in 2002. This study uses the police-reported crash data from Taiwan between 1999 and 2001 to estimate the effectiveness of helmets, simultaneously taking into account of sample selection bias. Sample selection arises because helmet usage will affect the probability of death or injury, which in turn influences whether a crash is included in the data. The results show that sample selection does not seriously bias the estimate of helmet effectiveness and helmets reduce the probability of death in a crash by 40%, which is higher than what was previously found. Without helmets, the number of motorcyclists killed in 2001 would have jumped by 51%. The estimated proportion of helmeted motorcyclists has increased from 71 to 78% between 1999 and 2001, suggesting that helmet use is rising after the implementation of mandatory helmet law in 1997. Also

If article is available & free, it will appear when you click on 'Full text' button on previous page

Search with PubMed: Sort Function

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Publication dates
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Format: Summary **Sort by: Most Recent** Per page: 20

Search results
Items: 7

Sort by

- ☒ Most Recent
- ☐ Best Match
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- ☐ First Author
- ☐ Last Author
- ☐ Journal
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Cochrane Database Syst Rev. 2008 Jan 23;(1):CD004333. doi: 10.1002/14651858.CD004333.pub3. Review.
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5. [Impact of a helmet law on two wheel motor vehicle crash mortality in a southern European urban area](#)
Ferrando J, Plasència A, Orós M, Borrell C, Kraus JF.
Inj Prev. 2000 Sep;6(3):184-8.
PMID: 11003182 **Free PMC Article**
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6. [Motorcyclist death prevention in Cali, Colombia: 1993-2001](#)
Gómez-Martínez MI, Espinosa-Vallín R, Concha-Eastman A.
h.

Send to

Filter your results:
All (7)
[Free Full Text \(4\)](#)
[Review \(2\)](#)
[Manage Filters](#)

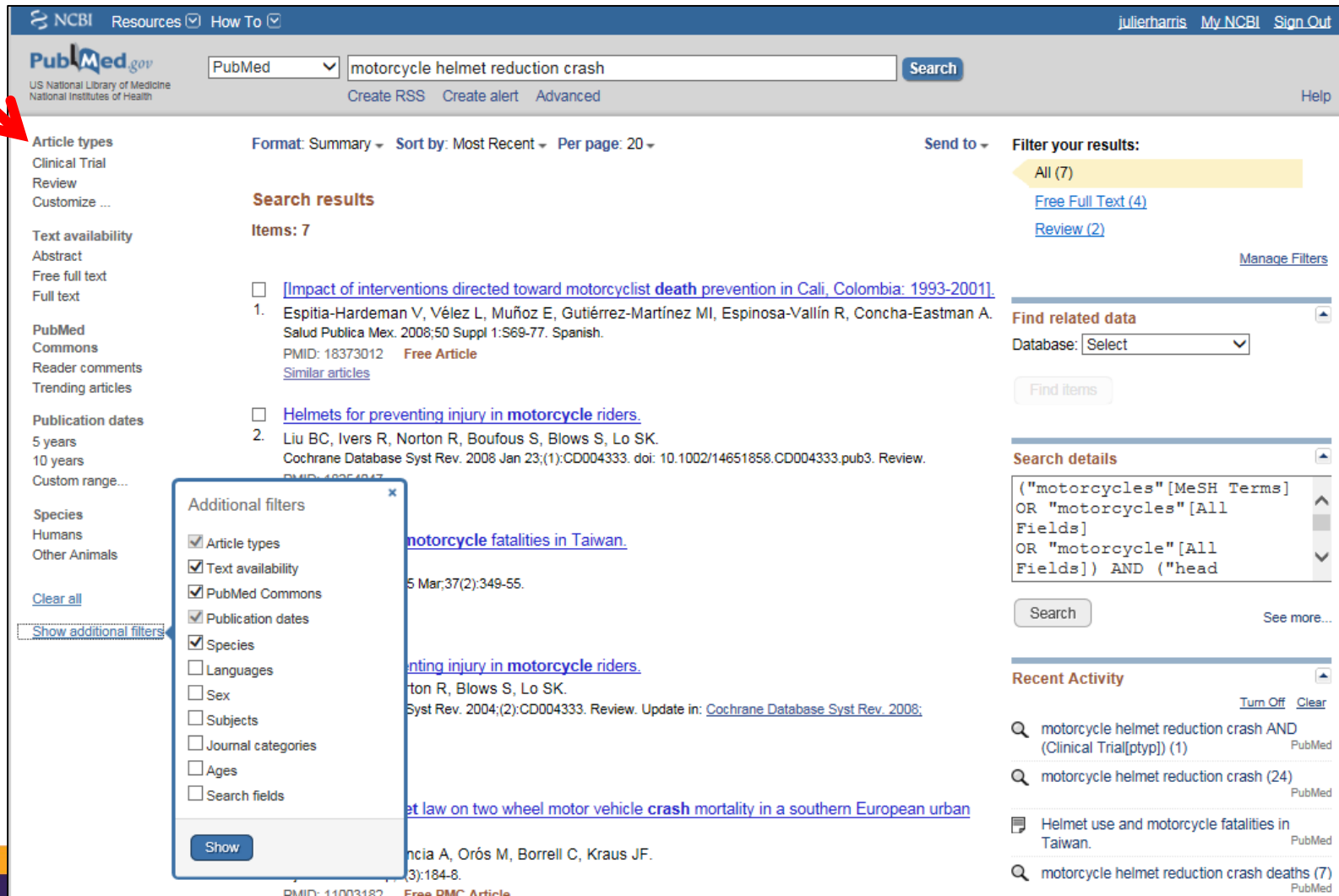
Find related data
Database:
[Find items](#)

Search details
("motorcycles"[MeSH Terms]
OR "motorcycles"[All
Fields]
OR "motorcycle"[All
Fields]) AND ("head
[Search](#) [See more...](#)

Recent Activity
[Turn Off](#) [Clear](#)

- [motorcycle helmet reduction crash](#) (24) PubMed
- [Helmet use and motorcycle fatalities in Taiwan](#) PubMed
- [motorcycle helmet reduction crash deaths](#) (7) PubMed
- [motorcycle helmets reduction crash death](#) (178) PMC
- [Association of helmet use with death in](#)

Search with PubMed: Limiting with Filters



The screenshot displays the PubMed search interface. At the top, the NCBI logo and navigation links are visible. The search bar contains the query "motorcycle helmet reduction crash". Below the search bar, the "Filter your results:" section shows "All (7)" results. The "Additional filters" dialog box is open, showing a list of filters with checkboxes. The "Show additional filters" link is highlighted with a red arrow. The search results list includes two items: "Impact of interventions directed toward motorcyclist death prevention in Cali, Colombia: 1993-2001" and "Helmets for preventing injury in motorcycle riders".

NCBI Resources How To PubMed.gov US National Library of Medicine National Institutes of Health

Search Results: motorcycle helmet reduction crash

Format: Summary Sort by: Most Recent Per page: 20

Search results Items: 7

Article types: Clinical Trial, Review, Customize ...

Text availability: Abstract, Free full text, Full text

PubMed Commons: Reader comments, Trending articles

Publication dates: 5 years, 10 years, Custom range...

Species: Humans, Other Animals

Additional filters:

- ☒ Article types
- ☒ Text availability
- ☒ PubMed Commons
- ☒ Publication dates
- ☒ Species
- ☐ Languages
- ☐ Sex
- ☐ Subjects
- ☐ Journal categories
- ☐ Ages
- ☐ Search fields

Show

1. [Impact of interventions directed toward motorcyclist death prevention in Cali, Colombia: 1993-2001](#). Espitia-Hardeman V, Vélez L, Muñoz E, Gutiérrez-Martínez MI, Espinosa-Vallín R, Concha-Eastman A. Salud Publica Mex. 2008;50 Suppl 1:S69-77. Spanish. PMID: 18373012 [Free Article](#) [Similar articles](#)

2. [Helmets for preventing injury in motorcycle riders](#). Liu BC, Ivers R, Norton R, Boufous S, Blows S, Lo SK. Cochrane Database Syst Rev. 2008 Jan 23;(1):CD004333. doi: 10.1002/14651858.CD004333.pub3. Review. PMID: 18373012 [Free Article](#)

3. [motorcycle fatalities in Taiwan](#). Liu BC, Ivers R, Blows S, Lo SK. Cochrane Database Syst Rev. 2004;(2):CD004333. Review. Update in: [Cochrane Database Syst Rev. 2006](#); (3):184-8. PMID: 14903182 [Free Article](#)

4. [Helmet use and motorcycle fatalities in Taiwan](#). Liu BC, Ivers R, Blows S, Lo SK. Cochrane Database Syst Rev. 2004;(2):CD004333. Review. Update in: [Cochrane Database Syst Rev. 2006](#); (3):184-8. PMID: 14903182 [Free Article](#)

5. [Helmet use and motorcycle fatalities in Taiwan](#). Liu BC, Ivers R, Blows S, Lo SK. Cochrane Database Syst Rev. 2004;(2):CD004333. Review. Update in: [Cochrane Database Syst Rev. 2006](#); (3):184-8. PMID: 14903182 [Free Article](#)

6. [Helmet use and motorcycle fatalities in Taiwan](#). Liu BC, Ivers R, Blows S, Lo SK. Cochrane Database Syst Rev. 2004;(2):CD004333. Review. Update in: [Cochrane Database Syst Rev. 2006](#); (3):184-8. PMID: 14903182 [Free Article](#)

7. [Helmet use and motorcycle fatalities in Taiwan](#). Liu BC, Ivers R, Blows S, Lo SK. Cochrane Database Syst Rev. 2004;(2):CD004333. Review. Update in: [Cochrane Database Syst Rev. 2006](#); (3):184-8. PMID: 14903182 [Free Article](#)

Filter your results: All (7) [Free Full Text \(4\)](#) [Review \(2\)](#) [Manage Filters](#)

Find related data Database: Select Find items

Search details ("motorcycles"[MeSH Terms] OR "motorcycles"[All Fields] OR "motorcycle"[All Fields]) AND ("head" OR "helmet") Search See more...

Recent Activity Turn Off Clear

- motorcycle helmet reduction crash AND (Clinical Trial[ptyp]) (1) PubMed
- motorcycle helmet reduction crash (24) PubMed
- Helmet use and motorcycle fatalities in Taiwan. PubMed
- motorcycle helmet reduction crash deaths (7) PubMed

When to Stop Searching: “Build an Argument, Not a Library”

- You can get lost in the available data and articles!
- Stay focused on the policy brief needs:
 - Clarifying the problem
 - Estimating size of problem
 - Root cause(s) assessment
 - Evidence that modifying root cause(s) changes outcomes
 - Assessing Policy Options
 - Costs of condition and policy
 - Evidence of the effects of different options on health outcomes



Review Question: PubMed

Q: How can I expand the number of articles I get from PubMed after an initial search?

- ☐ Modify search terms
- ☐ Use 'OR' instead of 'AND' during searches
- ☐ Both of the above

Review Question: PubMed

Q: How can I expand the number of articles I get from PubMed after an initial search?

- ☐ Modify search terms
- ☐ Use 'OR' instead of 'AND' during searches
- ☒ Both of the above

Evaluating Search Results

Evaluating Search Results

A

**Review the titles
and abstracts**

- **Does the article address specific content?**
- **Does the article address the needs of the target audience (i.e. health, economic, or social evidence)?**

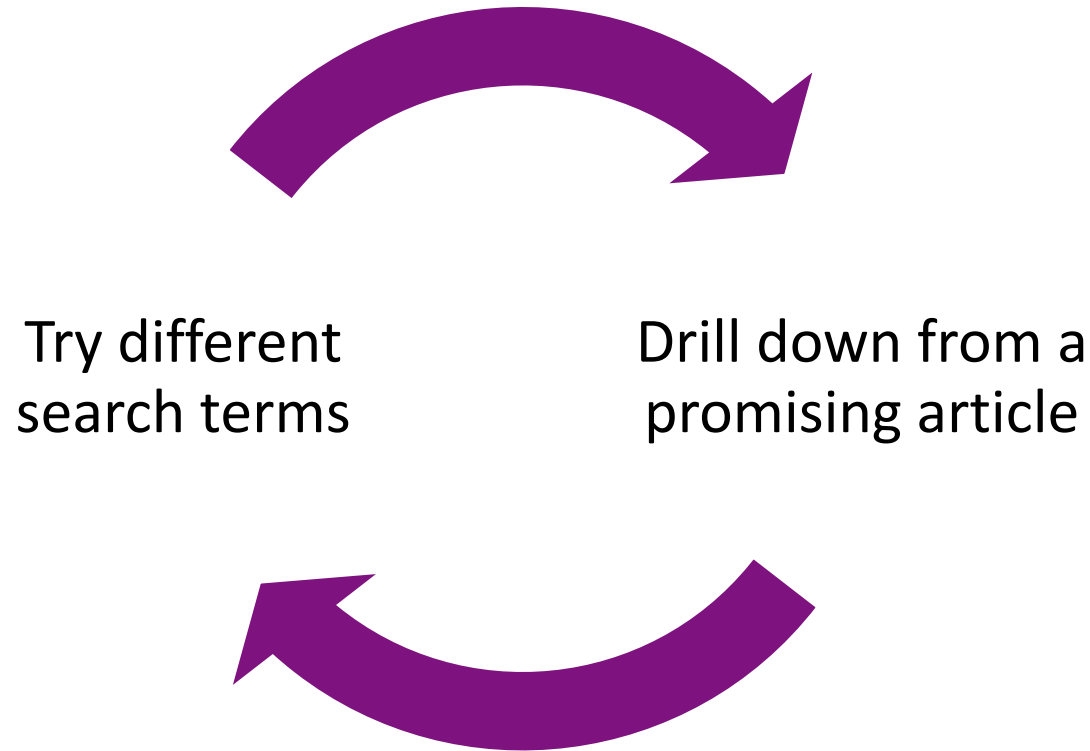
Evaluating Search Results



Evaluate the
quality of
evidence

- **Systematic review**
- **Randomized controlled trial**
- **Experimental study**
- **Cohort or case-control analytic study**
- **Multiple time series**
- **Reports of experts**
- **Descriptive studies**
- **Case reports**

Searching is an Iterative Process



How to Search Google Scholar and Google

Searching with Google Scholar



The screenshot shows the Google Scholar search interface. A red arrow points to the Google logo. The search bar contains the text "helmets AND motorcycle AND injuries". The search results page shows "About 17,500 results (0.07 sec)". The URL "http://scholar.google.com" is displayed in red. The left sidebar contains filters for "Articles", "Case law", "My library", "Any time", "Sort by relevance", "Sort by date", "include patents", "include citations", and "Create alert". The main content area displays three search results, each with a title, authors, and a brief description. The first result is "Motorcycle crash injuries and costs: effect of a reenacted comprehensive helmet use law" by RL Muelleman, EJ Mlinek, PE Collicott, published in Annals of emergency medicine, 1992. The second result is "The effect of the Taiwan motorcycle helmet use law on head injuries" by WT Chiu, CY Kuo, CC Hung, M Chen, published in American journal of public health, 2000. The third result is "The effect of the 1992 California motorcycle helmet use law on motorcycle crash fatalities and injuries" by JF Kraus, C Peek, DL McArthur, A Williams, published in Jama, 1994. The fourth result is "Pattern of motorcycle-related injuries in Tehran, 1999 to 2000: a study in 6 hospitals" by M Zargar, A Khaji, M Karbakhsh, published in apps.who.int, 2006.

Google

helmets AND motorcycle AND injuries

Scholar About 17,500 results (0.07 sec)

<http://scholar.google.com>

Articles

Case law

My library

Any time

Since 2017

Since 2016

Since 2013

Custom range...

Sort by relevance

Sort by date

☒ include patents

☒ include citations

☒ Create alert

Motorcycle crash injuries and costs: effect of a reenacted comprehensive helmet use law
RL Muelleman, EJ Mlinek, PE Collicott - Annals of emergency medicine, 1992 - Elsevier
... **motorcycle helmets**. Download full text in PDF. ORIGINAL CONTRIBUTION **motorcycle helmets**
Motorcycle Crash Injuries and Costs: Effect of a Reenacted Comprehensive Helmet Use Law
From the Department of Emergency Medical Services, University of Nebraska Medical Center,*
Cited by 74 Related articles All 10 versions Cite Save More

The effect of the Taiwan motorcycle helmet use law on head injuries.
WT Chiu, CY Kuo, CC Hung, M Chen - American journal of public ..., 2000 - ncbi.nlm.nih.gov
OBJECTIVES: This study evaluated the effect of the **motorcycle helmet** law implemented in Taiwan on June 1, 1997. METHODS: Collecting data on 8795 cases of **motorcycle**-related head **injuries** from 56 major Taiwanese hospitals, we compared the situation 1 year before
Cited by 168 Related articles All 17 versions Cite Save More [PDF] nih.gov

The effect of the 1992 California motorcycle helmet use law on motorcycle crash fatalities and injuries
JF Kraus, C Peek, DL McArthur, A Williams - Jama, 1994 - jama.jamanetwork.com
Objective.—To determine the effects of the California **motorcycle helmet** use law on statewide fatalities and a large sample of nonfatal **injuries** before and after law implementation. Design.—Police reports and death certificates were collected for **motorcycle**
Cited by 168 Related articles All 13 versions Cite Save More [PDF] jamanetwork.com

Pattern of motorcycle-related injuries in Tehran, 1999 to 2000: a study in 6 hospitals
M Zargar, A Khaji, M Karbakhsh - 2006 - apps.who.int
... Thus failure to wear a **helmet** resulted in a significantly higher incidence of cranial injury and death among our patients involved in **motorcycle** crashes. **Helmets** are the best evaluated way to reduce **motorcycle** deaths and **injuries** [14,15]. ...
Cited by 94 Related articles All 14 versions Cite Save [PDF] who.int

Searching with Google Scholar

The screenshot shows the Google Scholar interface. At the top, the Google logo is on the left, and the search bar contains the text "helmets AND motorcycle AND injuries" with a magnifying glass icon to its right. Below the search bar, the word "Scholar" is displayed in red, followed by "About 17,500 results (0.07 sec)".

On the left side, there is a sidebar with several sections:

- Articles**: A red arrow points to this section.
- Case law**
- My library**
- Any time**: A red arrow points to this section, which includes options for "Since 2017", "Since 2016", "Since 2013", and "Custom range...".
- Sort by relevance** and **Sort by date**
- ☒ **include patents**
- ☒ **include citations**
- ☒ **Create alert**

The main content area displays three search results:

- Motorcycle crash injuries and costs: effect of a reenacted comprehensive helmet use law**
RL Muelleman, EJ Mlinek, PE Collicott - Annals of emergency medicine, 1992 - Elsevier
... **motorcycle helmets**. Download full text in PDF. ORIGINAL CONTRIBUTION **motorcycle helmets Motorcycle Crash Injuries** and Costs: Effect of a Reenacted Comprehensive **Helmet Use Law** From the Department of Emergency Medical Services, University of Nebraska Medical Center,*
Cited by 74 Related articles All 10 versions Cite Save More
- The effect of the Taiwan motorcycle helmet use law on head injuries.**
WT Chiu, CY Kuo, CC Hung, M Chen - American journal of public ..., 2000 - ncbi.nlm.nih.gov
OBJECTIVES: This study evaluated the effect of the **motorcycle helmet** law implemented in Taiwan on June 1, 1997. METHODS: Collecting data on 8795 cases of **motorcycle**-related head **injuries** from 56 major Taiwanese hospitals, we compared the situation 1 year before
Cited by 168 Related articles All 17 versions Cite Save More
- The effect of the 1992 California motorcycle helmet use law on motorcycle crash fatalities and injuries**
JF Kraus, C Peek, DL McArthur, A Williams - Jama, 1994 - jama.jamanetwork.com
Objective.—To determine the effects of the California **motorcycle helmet** use law on statewide fatalities and a large sample of nonfatal **injuries** before and after law implementation. Design.—Police reports and death certificates were collected for **motorcycle**
Cited by 168 Related articles All 13 versions Cite Save More

On the right side of the results, there are links to PDF versions of the articles:

- [PDF] nih.gov (pointed to by a red arrow)
- [PDF] jamanetwork.com
- [PDF] who.int

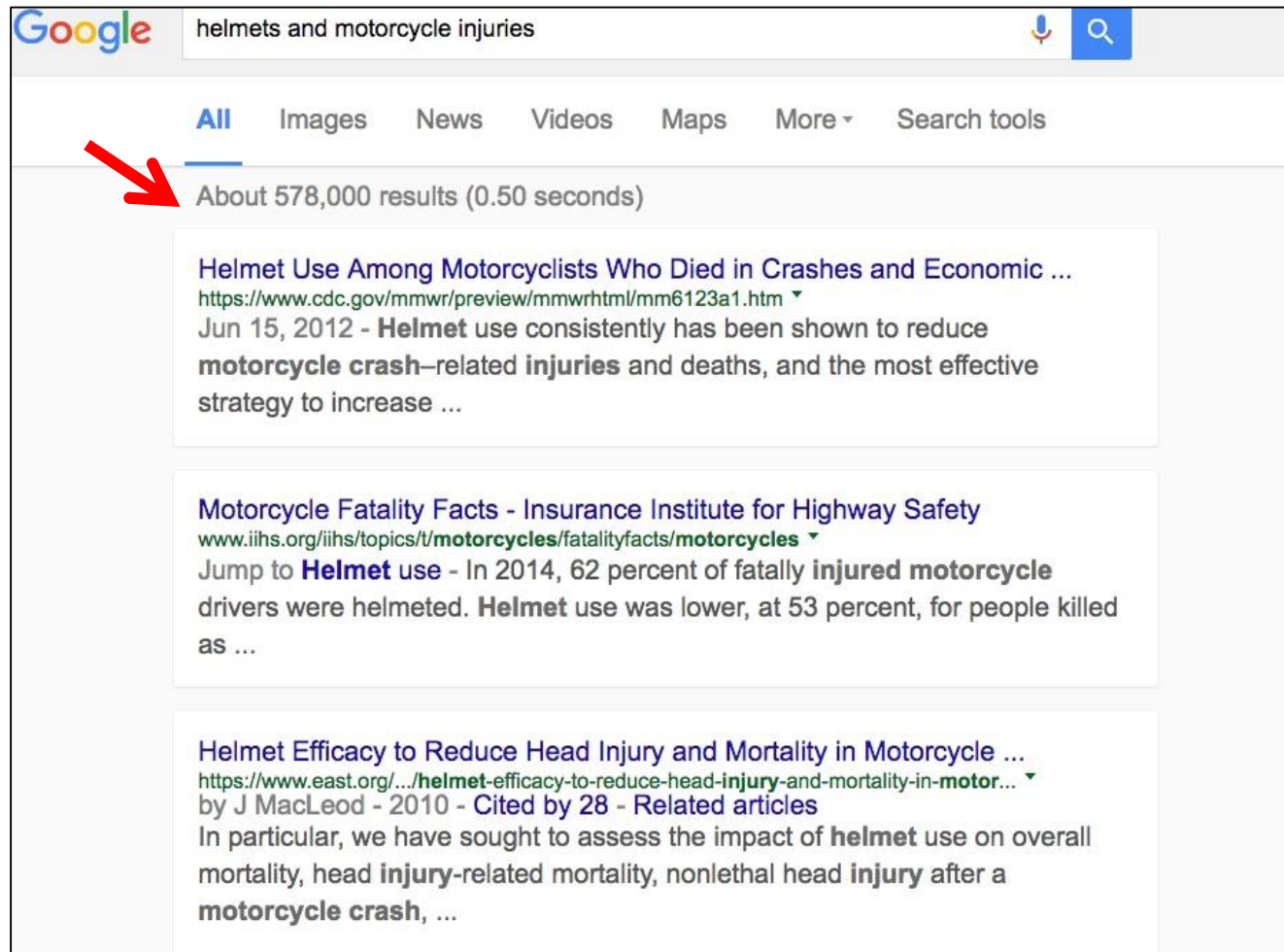
Google Scholar Search Tips

- **Use quote marks to search for all words of a phrase together (e.g. “Papua New Guinea”)**
- **Use UPPERCASE for Boolean terms (AND, OR)**
- **To find newer articles, try the following options in the left sidebar:**
 - click "Since Year" to show recently published papers;
 - click "Sort by date" to show just the new additions, sorted by date;
 - click the envelope icon to have new results periodically delivered by email

Try Searching Google Scholar!

- <http://scholar.google.com>
- For help and handy tips, check out:
<https://scholar.google.com/intl/en/scholar/help.html>

Searching with Google



Finding the Full Article Online

- **Google Scholar often has a pdf version**
- **WHO/ HINARI open access scheme:**
 - <http://www.who.int/hinari/en/>
- **Open repositories**
 - MSF: <http://fieldresearch.msf.org/msf/handle/10144/10833>
- **ResearchGate**
 - <http://www.researchgate.net/>
- **Email the corresponding author**
- **Work with your mentor**

Keep Track of Your Evidence Materials

- **Constantly and consistently organize your evidence materials**
 - At minimum, track the author, title, journal, and date
 - Bulleted list of key findings that are relevant for you!
 - Also helpful to keep the web address, if possible
- **Use a references management system**
 - Free systems are available online – e.g. Mendeley (<https://www.mendeley.com/>)
 - Subscription services offer high usability and portability – e.g. Refworks (<https://www.refworks.com/>)

Citing with Google Scholar

The screenshot displays the Google Scholar interface. At the top, the Google logo is on the left, and a search bar is in the center. Below the search bar, the word 'Scholar' is on the left, and '11 results (0.03 sec)' is in the center. On the right, there is a 'My Citations' button. The search results list several entries for the article 'Effect of the helmet act for motorcyclists in Thailand' by M Ichikawa, W Chadbunchachai, and E Marui. A red arrow points to the 'Cite' link of the first result. A 'Cite' dialog box is open, showing various citation formats. The MLA format is highlighted with a blue box. A red arrow points to the 'Cite' link of the second result.

Google Scholar

Scholar 11 results (0.03 sec) My Citations

All versions

Effect of the helmet act for motorcyclists in Thailand

M Ichikawa, W Chadbunchachai, E Marui - *Accident Analysis & Prevention*, 2003 - Elsevier

Objectives: This study investigated the effect of the helmet act for motorcyclists on increasing helmet use and reducing motorcycle-related deaths and severe injuries in Thailand.

Methods: Data were derived from a trauma registry at the Khon Kaen Regional Hospital in ...

Cited by 103 Related articles Cite Save

Effect of the helmet act for motorcyclists in Thailand

M ICHIKAWA, W CHADBUNCHACHAI, E MARUI - *Accident analysis and prevention*, 2003 - cat.inist.fr

Objectives: This study investigated the effect of the helmet act for motorcyclists on increasing helmet use and reducing motorcycle-related deaths and severe injuries in Thailand.

Methods: Data were derived from a trauma registry at the Khon Kaen Regional Hospital in ...

Cite

Effect of the helmet act for motorcyclists in Thailand

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M Ichikawa, W Chadbunchachai, E Marui - *Accident Analysis & Prevention*, 2003 - Elsevier

OBJECTIVES: This study investigated the effect of the helmet act for motorcyclists on increasing helmet use and reducing motorcycle-related deaths and severe injuries in Thailand. METHODS: Data were derived from a trauma registry at the Khon Kaen Regional Hospital in ...

Cite

[CITATION] EFFECT OF THE HELMET ACT FOR MOTORCYCLISTS IN THAILAND

M ICHIKAWA, W CHADBUNCHACHAI, E MARUI - *Accident Analysis & Prevention*, 2003 - Elsevier

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Cite

Effect of the helmet act for motorcyclists in Thailand

M Ichikawa, W Chadbunchachai, E Marui - *Accident Anal Prev*, 2003 - bases.bireme.br

Resumo: OBJECTIVES: This study investigated the effect of the helmet act for motorcyclists on increasing helmet use and reducing motorcycle-related deaths and severe injuries in Thailand. METHODS: Data were derived from a trauma registry at the Khon Kaen Regional Hospital in ...

Cite

EFFECT OF THE HELMET ACT FOR MOTORCYCLISTS IN THAILAND

M Ichikawa, W Chadbunchachai, E Marui - *Accident Analysis & Prevention*, 2003 - trid.trb.org

Abstract: This study investigated the effect of the helmet act for motorcyclists on increasing helmet use and reducing motorcycle-related deaths and severe injuries in Thailand. Data were derived from trauma registry in the northeast Thailand. Helmet use and outcome of ...

Cite

Cite

Copy and paste a formatted citation or use one of the links to import into a bibliography manager.

MLA Ichikawa, M., W. Chadbunchachai, and E. Marui. "Effect of the helmet act for motorcyclists in Thailand." *Accident; analysis and prevention* 35.2 (2003): 183-189.

APA Ichikawa, M., Chadbunchachai, W., & Marui, E. (2003). Effect of the helmet act for motorcyclists in Thailand. *Accident; analysis and prevention*, 35(2), 183-189.

Chicago Ichikawa, M., W. Chadbunchachai, and E. Marui. "Effect of the helmet act for motorcyclists in Thailand." *Accident; analysis and prevention* 35, no. 2 (2003): 183-189.

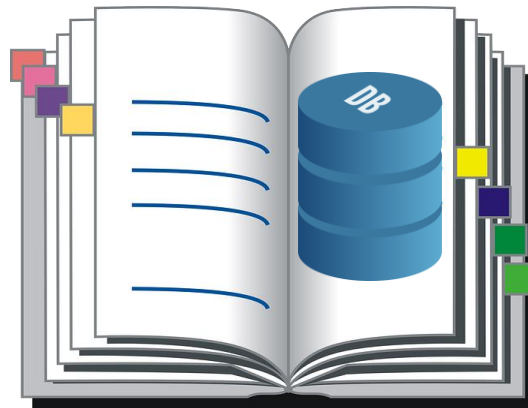
Harvard Ichikawa, M., Chadbunchachai, W. and Marui, E., 2003. Effect of the helmet act for motorcyclists in Thailand. *Accident; analysis and prevention*, 35(2), pp.183-189.

Vancouver Ichikawa M, Chadbunchachai W, Marui E. Effect of the helmet act for motorcyclists in Thailand. *Accident; analysis and prevention*. 2003 Mar;35(2):183-9.

BibTeX EndNote RefMan RefWorks

Helpful Free Databases

See your Participant workbook for a list of free databases.



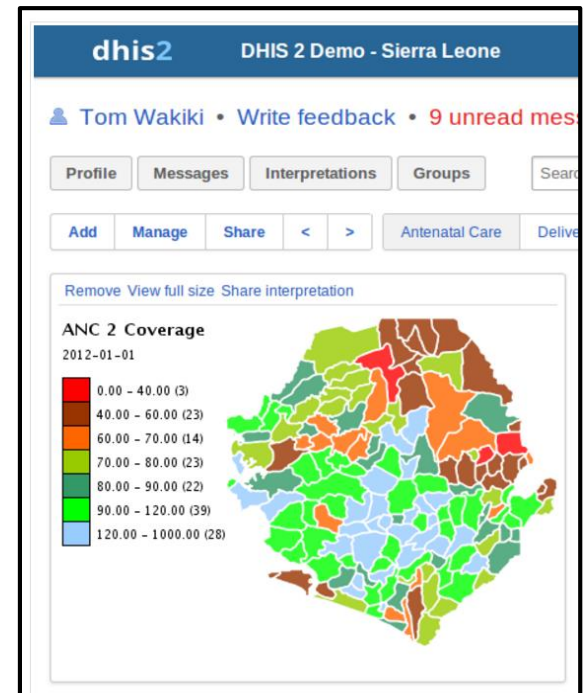
Other Data Sources

Available Data Sources

- **Health services utilization data**
 - **Clinic data**
 - **Hospital discharge data**
 - **Electronic medical records**
- **Population-based surveys**
- **Civil registration and vital statistics**
- **Surveillance data**
- **Census data**

Health Services Utilization Data

- Vaccination services (counts), antenatal clinic visits (coverage)
- Uses:
 - Assess service coverage
 - Compare trends over time / geographies
- Strengths:
 - Available at facility level
 - Available quickly, consistently
- Weaknesses:
 - Limited only to persons who seek care!
 - Potential for poor-quality / incomplete data
 - Private sector facilities rarely included
 - Individuals counted multiple times if seen >1 time, at different facilities



Population-Based Surveys

- Periodic population household surveys (DHS, STEPS, others)
- Uses:
 - Understand population-level health measures, risk factors
 - Provide data on health behaviors and trends
- Strengths:
 - Nationally-representative
 - Ideal for risk factors, morbidity data, especially if clinical data or blood samples collected
- Weaknesses:
 - Infrequent, due to cost
 - Rarely available at sub-national level
 - Self-reports → bias
 - Survival bias



Vital Statistics

- Birth and death certificates
- Uses:
 - Provide numbers of births
 - Provide numbers and causes of death
- Strengths:
 - Critical to understand burden/mortality of deadly diseases
- Weaknesses:
 - Frequently incomplete or poor quality
 - Less useful where civil registration system is not strong (infants rarely born in facilities, deaths go unrecorded)

Surveillance Data

- Uses

- Provide data on prevalence / incidence of specific diseases, injuries, and/or risk factors in a population or sample
- Active or passive surveillance
- IDSR (Integrated Disease Surveillance & Response)
- Police or insurance data

- Strengths

- Active surveillance may include private facilities
- Passive surveillance more often available

- Weaknesses

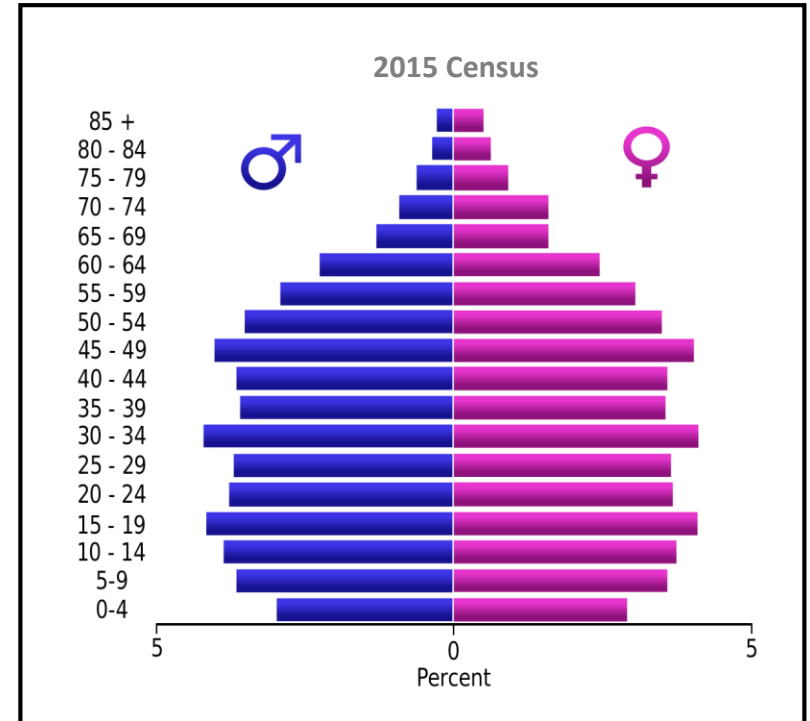
- Data from passive surveillance of variable quality; may not have the variables needed

Cancer Registries/Other Disease Registries

- Collect case data *only* on new cases (often cancer)
 - Population-based
 - Hospital-based
- Uses
 - Research into the natural history of a disease, survival
 - Determine patterns of disease incidence
- Strengths
 - Often contain high-quality data on incidence and survival
 - Have individual patient information over time
- Weaknesses
 - Dependent on case being captured
 - Often voluntary inclusion

Census Data

- May be a critical source of data for your policy brief
 - Denominator data
 - Mortality data (in some cases)



Economic/Cost Data

- How much a policy option costs / revenue it would earn
- Costs per case averted
- Sources
 - *Bureau of Census or Finance Department (salaries)*
 - *Payrolls or government /organization pay scales (salaries)*
 - *Medical bills & claims records (drugs, time, salaries)*
 - *Published reports (everything)*
 - *Going market prices for items (rent)*
 - *Observation (i.e., current price of gas)*
 - *WHO website (price list , drugs, supplies, vaccines)*
 - *Program data (births, deaths, on care, clinic visit)*
 - *Partners' databases (salary, supplies)*
 - *Clinic database (payroll, utilities, rent)*
 - *Capital cost (market value of a building)*
 - *Fees (current rate being charged, reimbursement from insurance)*



Summary

- Policy briefs need data in multiple areas to be convincing and accurate
- Scientific articles are a critical component of your data search; however, they are not the only sources of data!
- Don't be afraid to be creative when looking for data sources in your country!

Deliverable 1: Data search

- **You are going to return to this list throughout the rest of the online and in-class course**
- **These will serve as some of the references for your policy brief**
- **Include in this list data sources about your health problem, problem statement, and policy options!**

END
