TuftsMedicine

Cost-Effectiveness Analysis (CEA) Registry Demo

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May 2025

Agenda

1. Introduction to the GH Registry
2. Navigating the Registry Data File
3. Use Cases
4. Resources

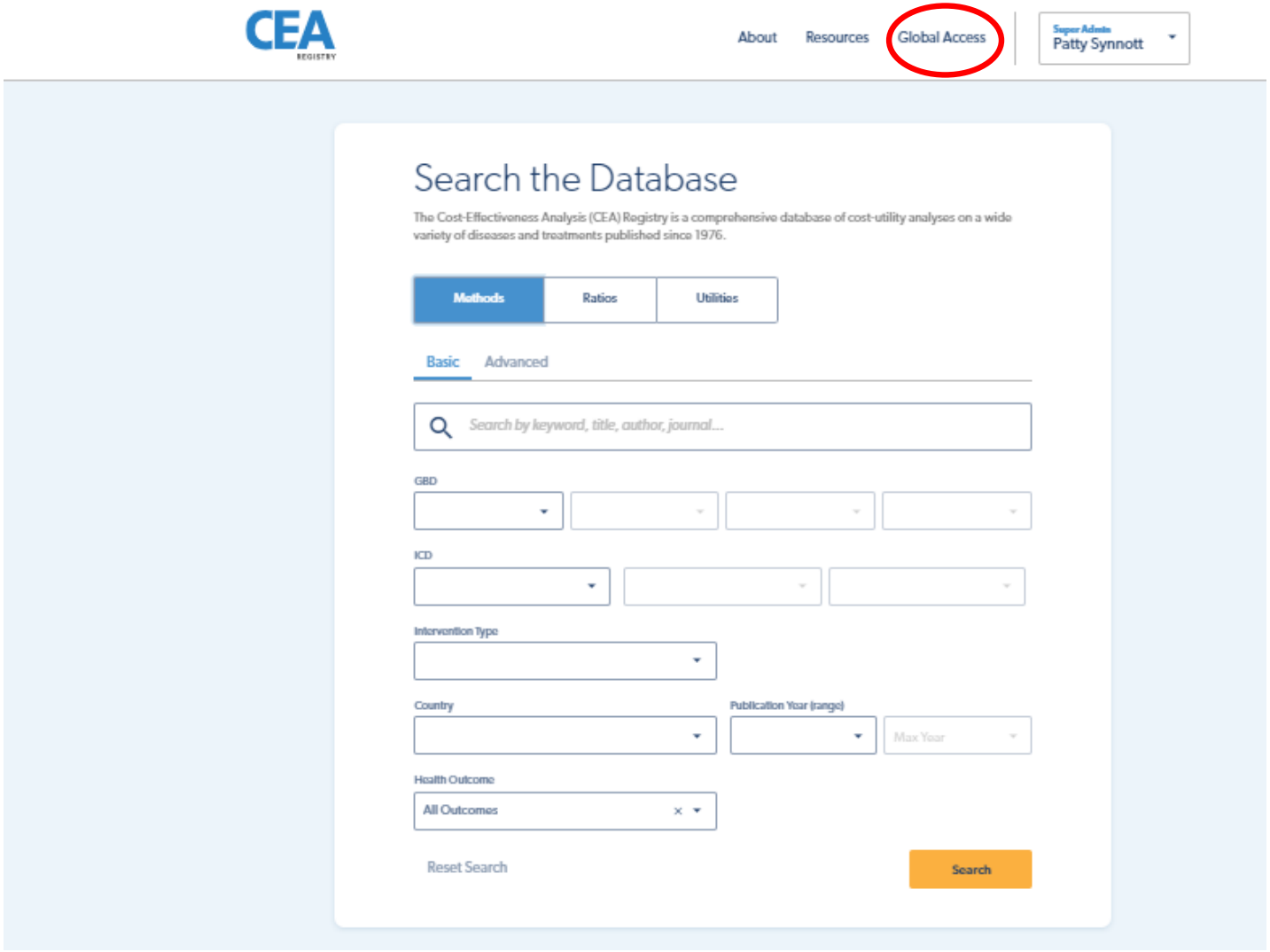
Introduction to The Global Health Registry:

The GH Registry

The world's largest collection of studies that apply a DALY averted metric since 1995

CEA REGISTRY

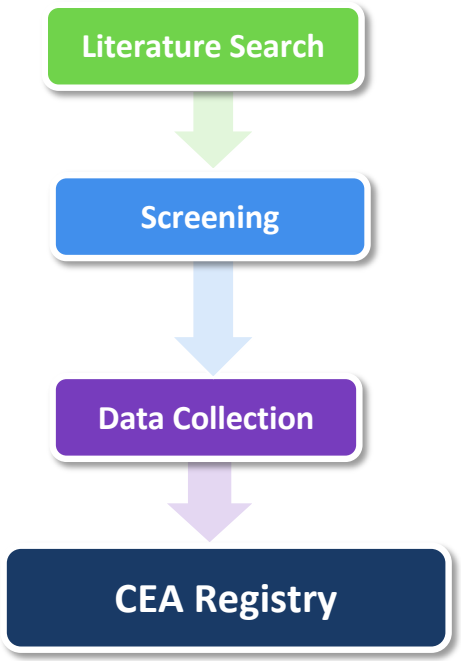
https://cear.tuftsmedicalcenter.org/registry/download


CEA
REGISTRY
About
Resources
Global Access
Super Admin
Patty Synnott
Search the Database
The Cost-Effectiveness Analysis (CEA) Registry is a comprehensive database of cost-utility analyses on a wide variety of diseases and treatments published since 1976.
Methods
Ratios
Utilities
Basic
Advanced
Search by keyword, title, author, journal...
GBD
ICD
Intervention Type
Country
Publication Year (range)
Max Year
Health Outcome
All Outcomes
Reset Search
Search

Maintaining the Registry

Eligibility

Original cost-effectiveness analysis using QALY or DALY as measure of health benefit



Information We Collect

METHODS

- Targeted Diseases
- Funding Source
- Time horizon
- Study Perspective

RATIOS

- Intervention
- Comparator
- Costs
- QALYs / DALYs
- Incremental Cost-Effectiveness Ratio (ICER)

$$CE\ Ratio = \frac{Cost_{Intervention} - Cost_{Comparator}}{DALY\ Averted_{Intervention} - DALY\ Averted_{Comparator}}$$

UTILITIES

- Health state
- Utility value (disability weights)
- Elicitation method

Navigating the GH Registry Data

The GH Registry

https://cear.tuftsmedicalcenter.org/registry/download

Contact cea.registry@tuftsmedicine.org for any questions or concerns.

First Name

Last Name

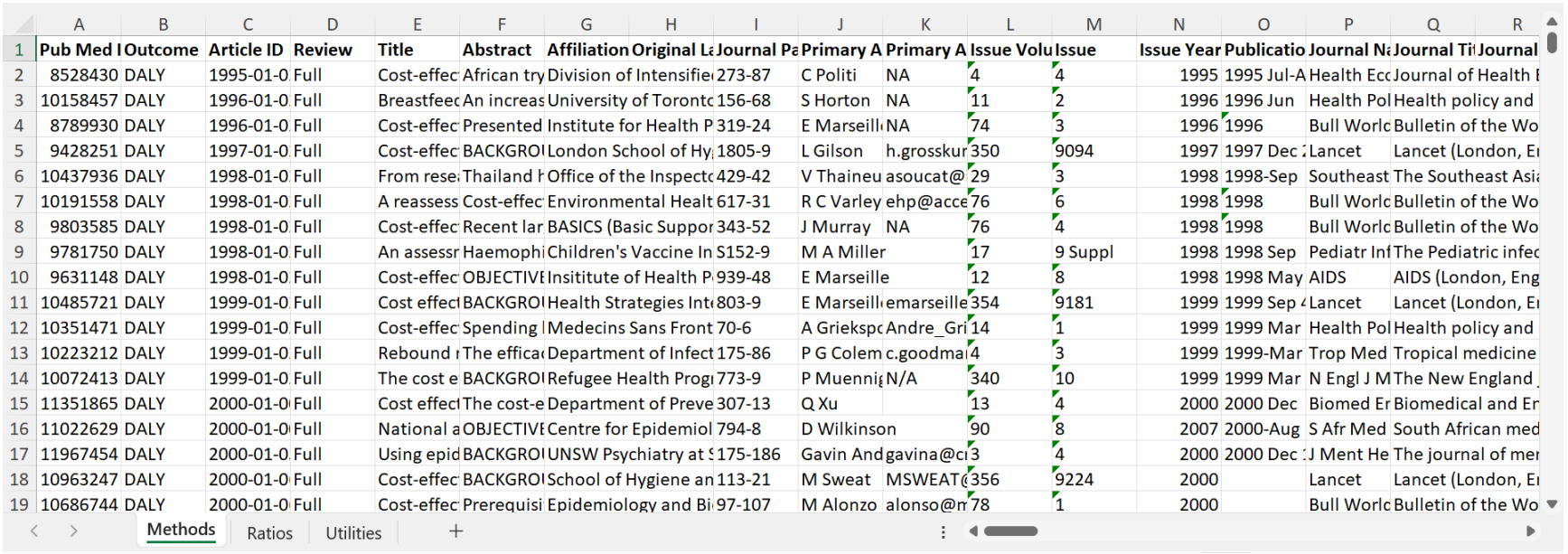
Email

Organization

Industry

Download

The GH Registry Data File



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1	Pub Med I	Outcome	Article ID	Review	Title	Abstract	Affiliation	Original La	Journal Pa	Primary A	Primary A	Issue Volu	Issue	Issue Year	Publicatio	Journal Na	Journal Ti	Journal
2	8528430	DALY	1995-01-0	Full	Cost-effec	African try	Division of Intensifie		273-87	C Politi	NA	4	4	1995	1995 Jul-A	Health Ecc	Journal of Health E	
3	10158457	DALY	1996-01-0	Full	Breastfeec	An increas	University of Toronto		156-68	S Horton	NA	11	2	1996	1996 Jun	Health Pol	Health policy and	
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10	9631148	DALY	1998-01-0	Full	Cost-effec	OBJECTIVE	Insititute of Health P		939-48	E Marseille		12	8	1998	1998 May	AIDS	AIDS (London, Eng	
11	10485721	DALY	1999-01-0	Full	Cost effect	BACKGRO	Health Strategies Int		803-9	E Marseill	emarseille	354	9181	1999	1999 Sep 4	Lancet	Lancet (London, E	
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14	10072413	DALY	1999-01-0	Full	The cost e	BACKGRO	Refugee Health Progr		773-9	P Muenni	N/A	340	10	1999	1999 Mar	N Engl J M	The New England J	
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18	10963247	DALY	2000-01-0	Full	Cost-effec	BACKGRO	School of Hygiene an		113-21	M Sweat	MSWEAT@	356	9224	2000		Lancet	Lancet (London, E	
19	10686744	DALY	2000-01-0	Full	Cost-effec	Prerequisi	Epidemiology and Bi		97-107	M Alonzo	alonso@m	78	1	2000		Bull Worlc	Bulletin of the Wo	

Methods | Ratios | Utilities

The GH Registry Data File:
Methods

- Citation information
- Country of study
- Discounting rate and currency
- Sensitivity analysis
- Ethical considerations
- Novel elements of value
- Prevention stage
- **Cost-effectiveness threshold**
- Intervention

- Time horizon
- Disease classification
- Costs included (e.g., healthcare costs, other costs…)
- Data sources
- Model source code
- Overall quality of analysis

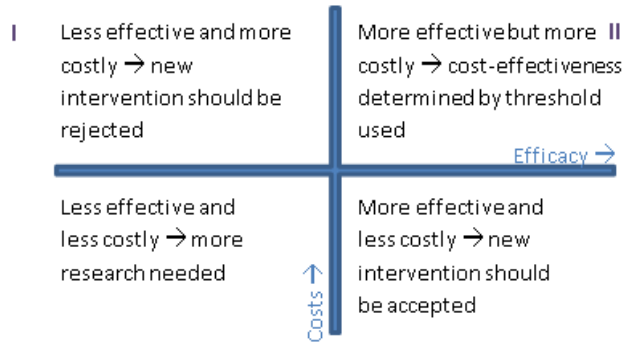
The amount of money a health system is willing to pay to avert one DALY

The GH Registry Data File:
Ratio

- Citation Information
- Target Population
- Intervention
- Comparator
- **Ratio Results**
- **Per Patient Cost and DALY**
- **Population Cost and DALY**
- Quadrants
- Other Analyses
- Budget Impact
- Perspective

$$CE\ Ratio = \frac{Cost_{Intervention} - Cost_{Comparator}}{DALY\ Averted_{Intervention} - DALY\ Averted_{Comparator}}$$

Cost Effectiveness Ratios can be understood best as falling into one of four quadrants:



The GH Registry Data File:
Utility (Disability Weight)

- Citation Information
- Base Case:
  - **Disability Weight**
  - Disutility
  - Incremental Gain
- Health State
- Weight range for sensitivity analysis
- Data source of the weight
- Elicitation Methods

A disability weight is a measure of the decline in health due to a disease.

- measured on a scale of 0 (healthy) to 1 (dead)
- used to calculate YLD (Years Lost due to Disability) and hence to quantify a disability impact

DALY Glossary:

http://ghcearegistry.org/orchard/resources

Use Cases

Analyses Using CEA Data

Meta-Analysis > Lancet Glob Health. 2024 Jul;12(7):e1159-e1173.
doi: 10.1016/S2214-109X(24)00181-5.

Cost-effectiveness of interventions for HIV/AIDS, malaria, syphilis, and tuberculosis in 128 countries: a meta-regression analysis

Fiona Silke [1], Lauren Earl [1], Johnathan Hsu [1], Mark M Janko [2], Jonah Joffe [3], Aishe Memetova [1], Danielle Michael [4], Peng Zheng [5], Aleksandr Aravkin [6], Christopher J L Murray [1], Marcia R Weaver [7]

Affiliations + expand

PMID: 38876762 PMCID: PMC11194165 DOI: 10.1016/S2214-109X(24)00181-5

Objective:

- To synthesize published CEAs and predict country-specific DALY ICERs for 14 recommended interventions targeting HIV/AIDS, malaria, syphilis, and tuberculosis, in order to support national health policy decisions.

Data Source :

- Using the registry data files, selecting ratios for interventions with a minimum of two published articles and three published ICERs that mapped to one of five GBD causes

Data Analysis:

- Implemented a **Bayesian mixed-effects meta-regression model** in five stages

Key Findings:

- Predicted country-specific ICERs in **2019 US dollars** for **14 interventions**
- Allows countries without local CEAs to make informed decisions to prioritize the highest-value interventions for funding

Systematic Reviews of Economic Evaluations

Eur J Health Econ. 2022 May 20. doi: 10.1007/s10198-022-01471-9. Online ahead of print.

Does the inclusion of societal costs change the economic evaluations recommendations? A systematic review for multiple sclerosis disease

B Rodríguez-Sánchez [1], S Daugbjerg [2], L M Peña-Longobardo [3], J Oliva-Moreno [3], I Aranda-Reneo [4], A Cicchetti [2], J López-Bastida [5]

Review. Int J Nurs Stud. 2022 May;129:104216. doi: 10.1016/j.ijnurstu.2022.104216. Epub 2022 Mar 2.

The costs, health outcomes and cost-effectiveness of interventions for the prevention and treatment of incontinence-associated dermatitis: A systematic review

Michelle Cunich [1], Michelle Barakat-Johnson [2], Michelle Lai [3], Sheena Arora [4], Jody Church [5], Shifa Basjarahil [6], Jayne L Campbell [7], Gary Disher [8], Samara Geering [9], Natalie Ko [10], Catherine Leahy [11], Thomas Leong [12], Eve McClure [13], Melissa O'Grady [14], Joan Walsh [15], Kate White [16], Fiona Coyer [17]

Identify Health Utility Values

Value Health. 2022 Feb;25(2):276-287. doi: 10.1016/j.jval.2021.08.002. Epub 2021 Sep 4.

Health State Utilities for Sickle Cell Disease: A Catalog Prepared From a Systematic Review

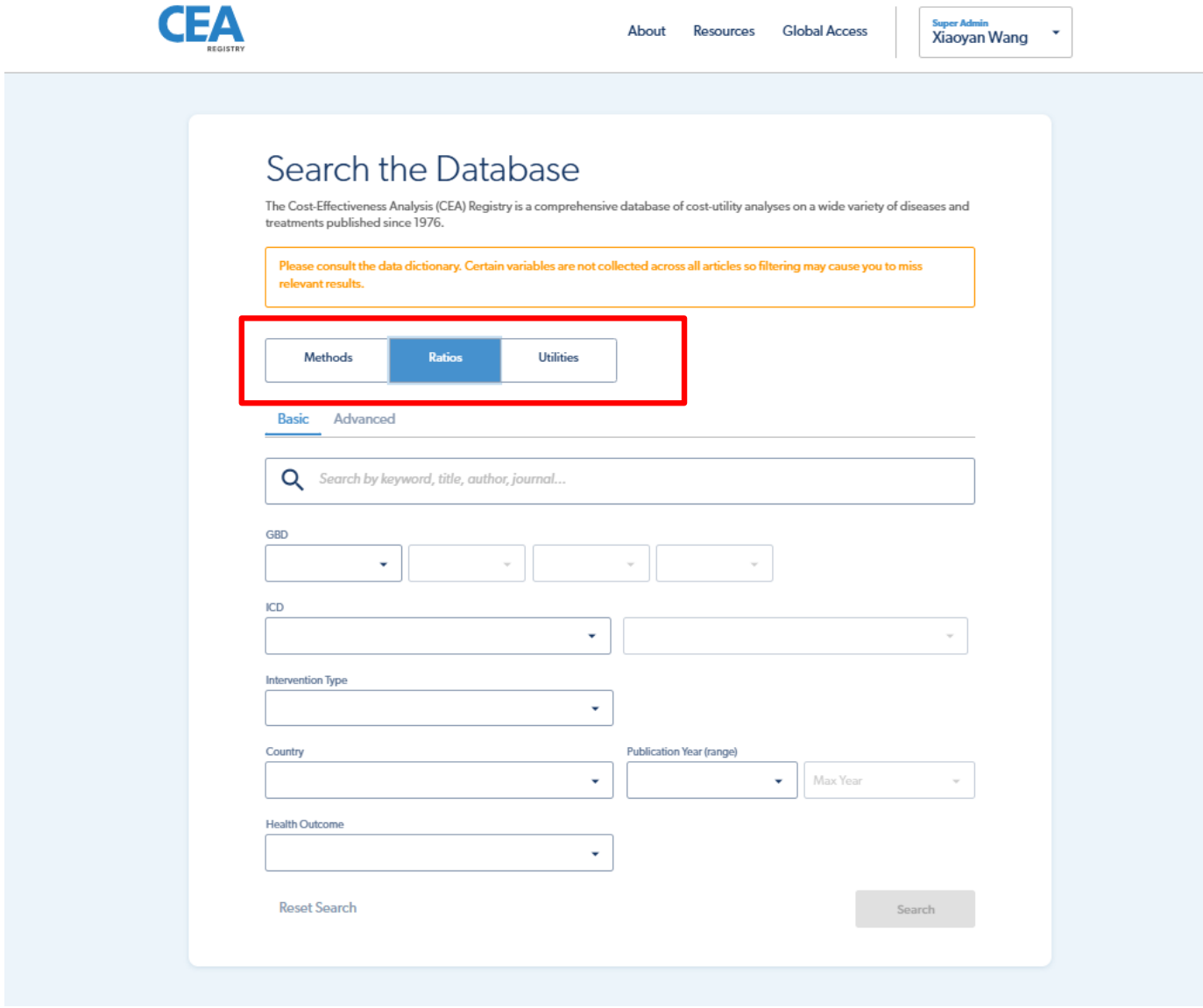
Boshen Jiao [1], Anirban Basu [2], Scott Ramsey [3], Joshua Roth [4], M A Bender [5], Dalyna Quach [6], Beth Devine [7]

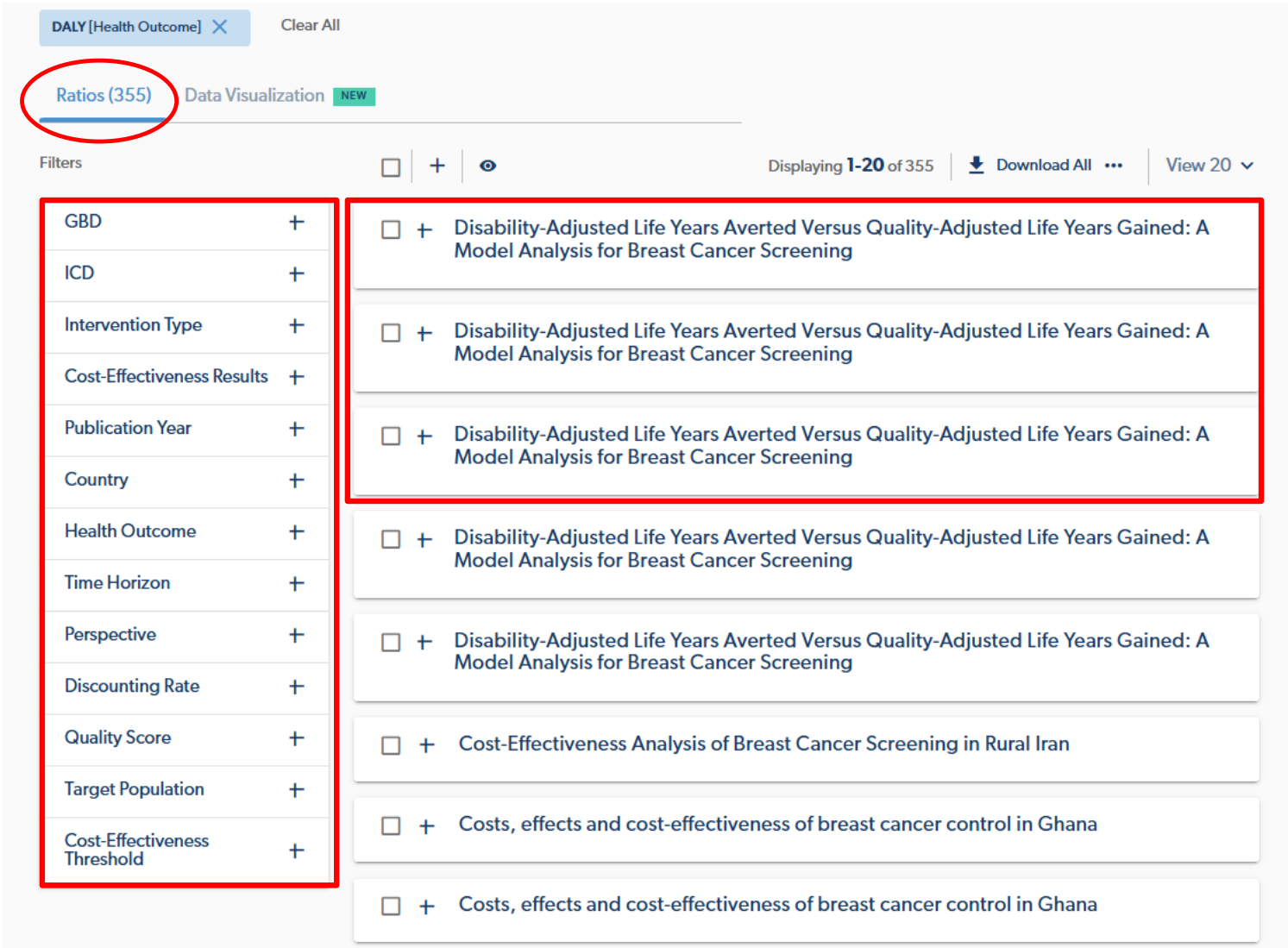
Case Reports Clin Orthop Relat Res. 2022 Jun 1;480(6):1129-1139.
doi: 10.1097/CORR.0000000000002110. Epub 2022 Jan 11.

Is Advanced Imaging to Assess Rotator Cuff Integrity Before Shoulder Arthroplasty Cost-effective? A Decision Modeling Study

Jay M Levin [1], John Wickman, Alexander L Lazarides, Daniel J Cunningham, Daniel E Goltz, Richard C Mather, Oke Anakwenze, Tally E Lassiter, Christopher S Klifto

Searching through CEA Registry


CEA
REGISTRY
About
Resources
Global Access
Super Admin
Xiaoyan Wang
Search the Database
The Cost-Effectiveness Analysis (CEA) Registry is a comprehensive database of cost-utility analyses on a wide variety of diseases and treatments published since 1976.
Please consult the data dictionary. Certain variables are not collected across all articles so filtering may cause you to miss relevant results.
Methods
Ratios
Utilities
Basic
Advanced
Search by keyword, title, author, journal...
GBD
ICD
Intervention Type
Country
Publication Year (range)
Max Year
Health Outcome
Reset Search
Search


DALY [Health Outcome]
Clear All
Ratios (355)
Data Visualization
NEW
Filters
Displaying 1-20 of 355
Download All
View 20
GBD
ICD
Intervention Type
Cost-Effectiveness Results
Publication Year
Country
Health Outcome
Time Horizon
Perspective
Discounting Rate
Quality Score
Target Population
Cost-Effectiveness Threshold
Disability-Adjusted Life Years Averted Versus Quality-Adjusted Life Years Gained: A Model Analysis for Breast Cancer Screening
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Costs, effects and cost-effectiveness of breast cancer control in Ghana

Disability-Adjusted Life Years Averted Versus Quality-Adjusted Life Years Gained: A Model Analysis for Breast Cancer Screening

Master Ref#	PubMed ID	Journal	Primary Author	Publication Year
2021-01-34272	33641769	Value Health	Maša Davidovic	2021

Volume / Issue	Pages	Priority Journal	Original Language
24 / 3	353-360	Yes	en

OBJECTIVES: To quantify the impact of mammography-based screening on the quality of life, disability-adjusted life years (DALYs) averted or quality-adjusted life years (QALYs) gained can be used. We aimed to assess whether the use of DALYs averted or QALYs gained will lead to different cost-effective screening strategies. METHODS: Using the microsimulation model MISCAN, we simulated different breast cancer screening strategies varying in starting age (starting at 45, 47, and 50 years), stopping age (stopping at 69, 72, and 74 years), and frequency (annual [A], biennial [B], combination of both [A + B], and triennial [T]). In total, we defined 24 different breast cancer screening strategies, including no screening as a reference strategy. We calculated incremental cost-effectiveness ratios (ICERs) and compared which strategies were on the efficiency frontiers for DALYs and QALYs. RESULTS: Breast cancer screening averted between 46.00 and 105.58 DALYs and gained between 28.69 and 64.50 QALYs per 1000 women. For DALYs there were 5 strategies on the efficiency frontier (T50-69, T50-74, T45-74, B45-74, and A45-74). The same strategies plus one (B45-72) were on the efficiency frontier for QALYs. CONCLUSIONS: Using DALYs averted instead of QALYs gained to assess the effects on quality of life from breast cancer screening in the Dutch population yields differences in ICERs, but almost the same strategies were on the efficiency frontiers. Whether the choice in outcome measure leads to a difference in optimal policy depends on the cost-effectiveness threshold.

PubMed ID: 33641769

Full Reference: Maša Davidovic; Nadine Zielonke; Iris Lansdorp-Vogelaar; Nereo Segnan; Harry J de Koning; Eveline Am Heijnsdijk; Disability-Adjusted Life Years Averted Versus Quality-Adjusted Life Years Gained: A Model Analysis for Breast Cancer Screening, Value Health, 2021 Mar; 24(3):1098-3015; 353-360

Study Outcome ($/QALY, $/DALY, Both): DALY

Study Country: Netherlands

Disease Classification: Malignant neoplasms, breast and female genital organs

Intervention Type(s): Screening

Intervention Phrase vs. Comparator Phrase: annual breast cancer screening ages 45 to 74 vs. no breast cancer screening

Target Characteristics: Not Stated

Max Target Age: 74 Years

Min Target Age: 45 Years

Target Genders: Female

Review: Full

Time Horizon: Lifetime

Discounting Rate (Costs): 3.00

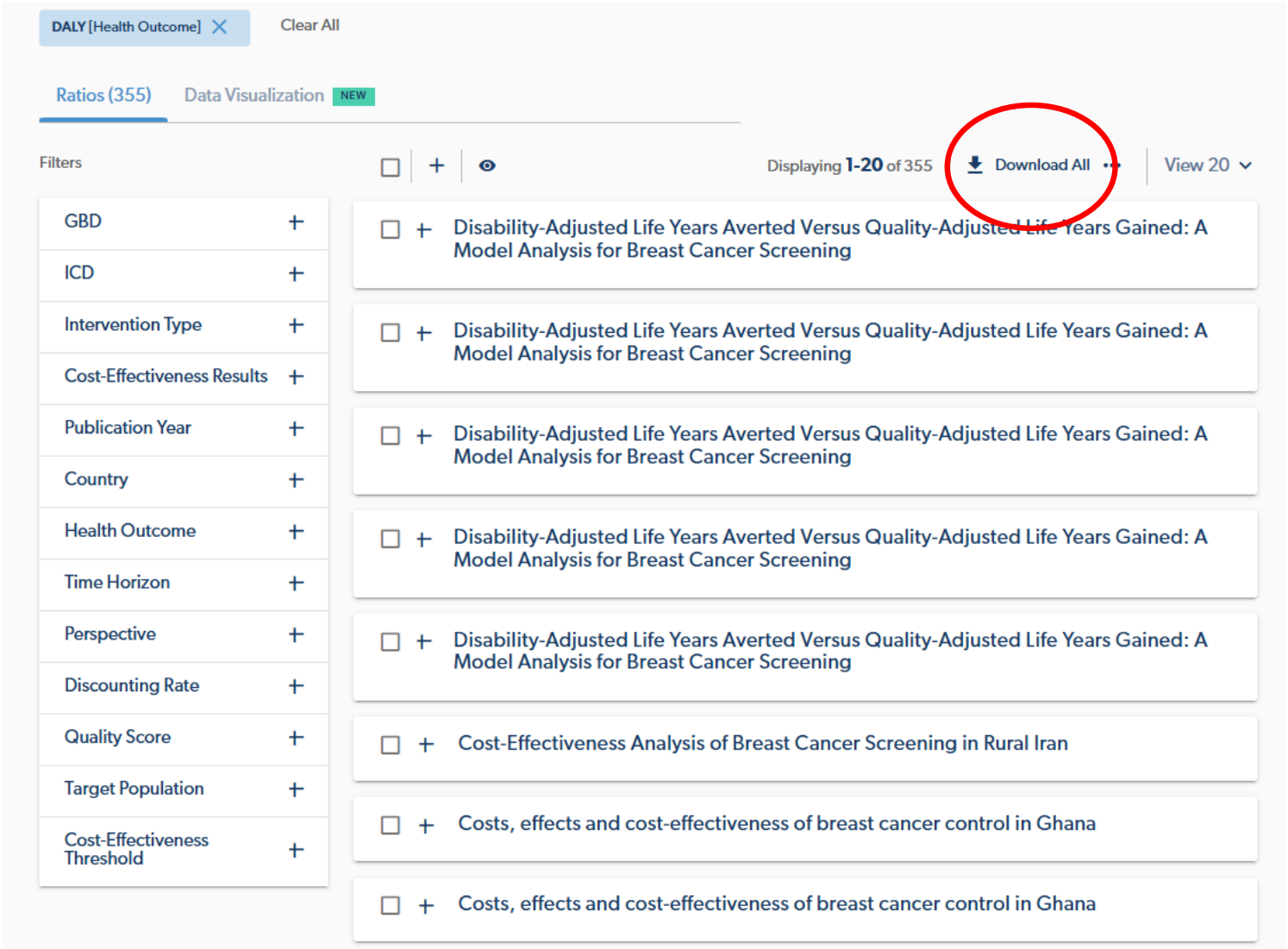
Discounting Rate (QALYs): 3.00

Incremental Cost-Effectiveness Ratio (Original currency and year): 9883

Currency Country: Euro

Currency Year: 2019

Incremental Cost-Effectiveness Ratio (Converted to current $USD)*: 13583.09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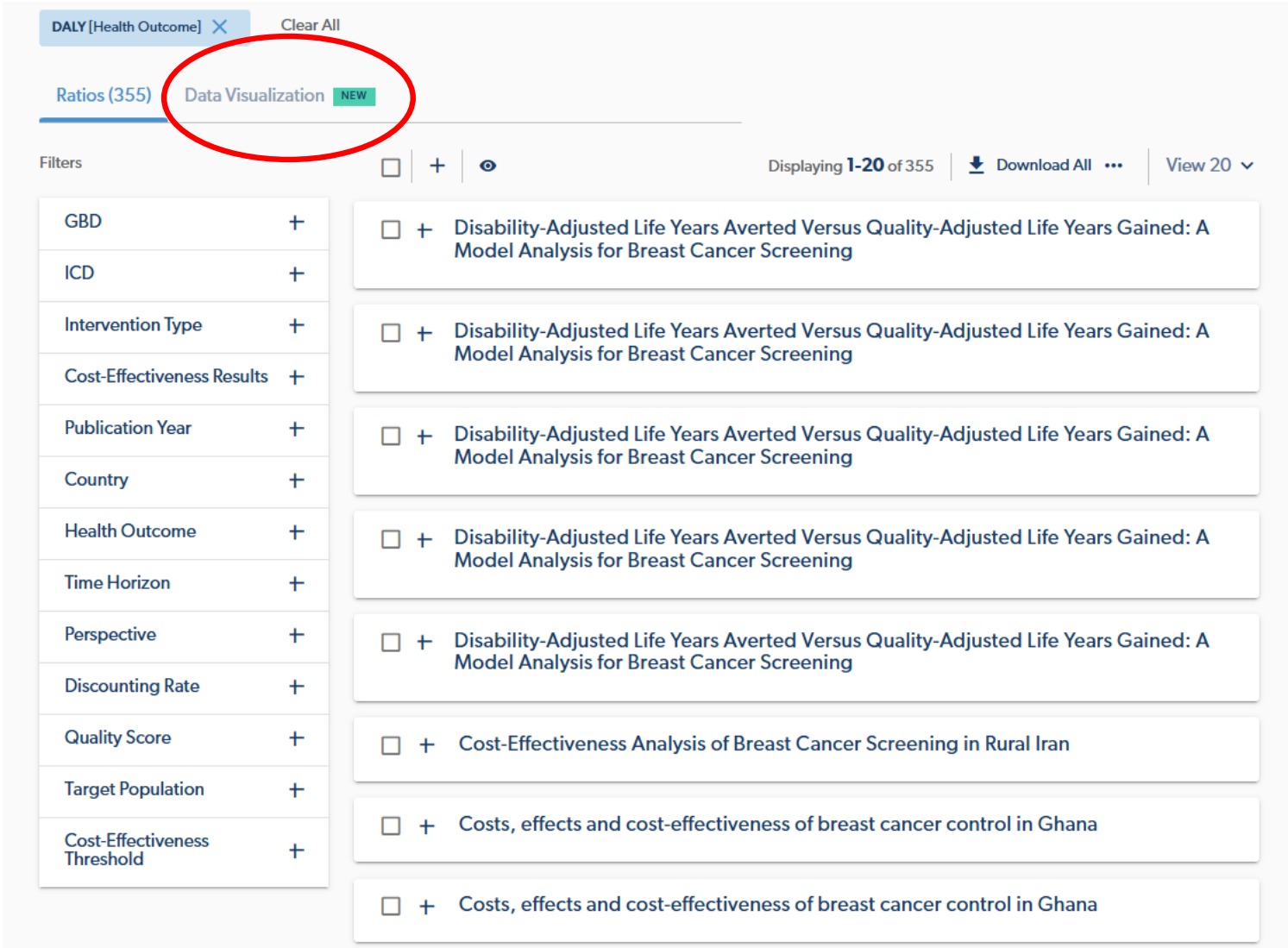
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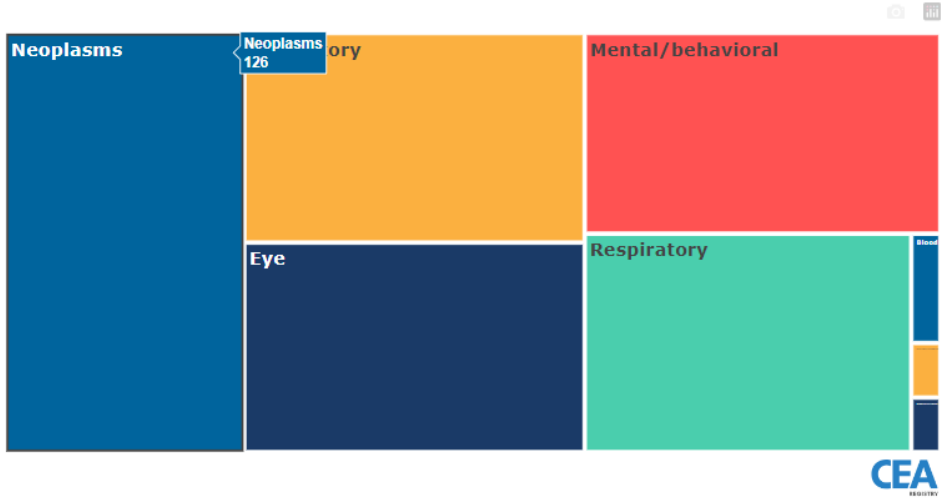
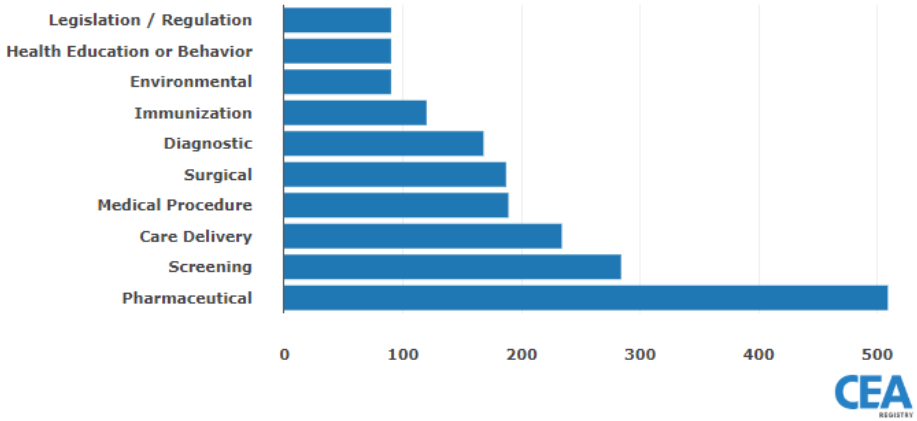
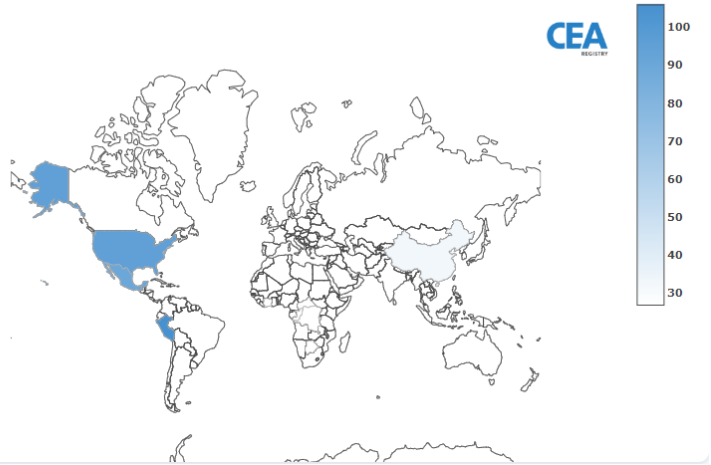
Disease Areas



Interventions



Country Level Heat Map



Summary

Number of Studies: **17**

Number of Ratios: **355**

Median ICER: **6882.02**

Interquartile Range: **2028.03-10496.63**

Number of Unique Interventions: **251**

Number of Countries Represented: **80**

Capstone Project Search

Keywords: Colorectal Cancer
Outcome: DALY

Summary

Number of Studies: **5**
Number of Ratios: **38**
Median ICER: **1037.63**
Interquartile Range: **531.4-3674.77**
Number of Unique Interventions: **30**
Number of Countries Represented: **31**

Keywords: Pertussis
Outcome: DALY
Intervention Type: Immunization

Summary

Number of Studies: **22**
Number of Ratios: **107**
Median ICER: **206.59**
Interquartile Range: **92.29-966.27**
Number of Unique Interventions: **44**
Number of Countries Represented: **202**

Keywords: Alcohol
Outcome: DALY

Summary

Number of Studies: **13**
Number of Ratios: **299**
Median ICER: **2668**
Interquartile Range: **615.43-6186.76**
Number of Unique Interventions: **196**
Number of Countries Represented: **35**

Keywords: diabetes tuberculosis
Outcome: DALY
Intervention Type: Screening

Summary

Number of Studies: **1**
Number of Ratios: **1**
Median ICER: **13085.85**
Interquartile Range: **13085.85-13085.85**
Number of Unique Interventions: **1**
Number of Countries Represented: **0**

Keywords: Chronic Kidney Disease
Outcome: All

Summary

Number of Studies: **101**
Number of Ratios: **350**
Median ICER: **36119.13**
Interquartile Range: **9601.09-104267.34**
Number of Unique Interventions: **207**
Number of Countries Represented: **29**

Keywords: Buprenorphine
Outcome: All

Summary

Number of Studies: **24**
Number of Ratios: **95**
Median ICER: **66310.8**
Interquartile Range: **24220.81-331044.48**
Number of Unique Interventions: **51**
Number of Countries Represented: **6**

Capstone Project Search

Keywords: Fluoride varnish

Outcome: All

Summary

Number of Studies: **2**

Number of Ratios: **3**

Median ICER:

Interquartile Range: **null-null**

Number of Unique Interventions: **4**

Number of Countries Represented: **2**

Keywords: tuberculosis

Outcome: DALY

Intervention Type: Screening

Summary

Number of Studies: **20**

Number of Ratios: **41**

Median ICER: **358.99**

Interquartile Range: **63.25-4435.09**

Number of Unique Interventions: **38**

Number of Countries Represented: **16**

Keywords: alcohol

Outcome: DALY

Intervention Type: Legislation/Regulation

Summary

Number of Studies: **11**

Number of Ratios: **285**

Median ICER: **2378.05**

Interquartile Range: **603.93-5122.14**

Number of Unique Interventions: **191**

Number of Countries Represented: **34**

Keywords: brain tumor

Outcome: All

Summary

Number of Studies: **9**

Number of Ratios: **26**

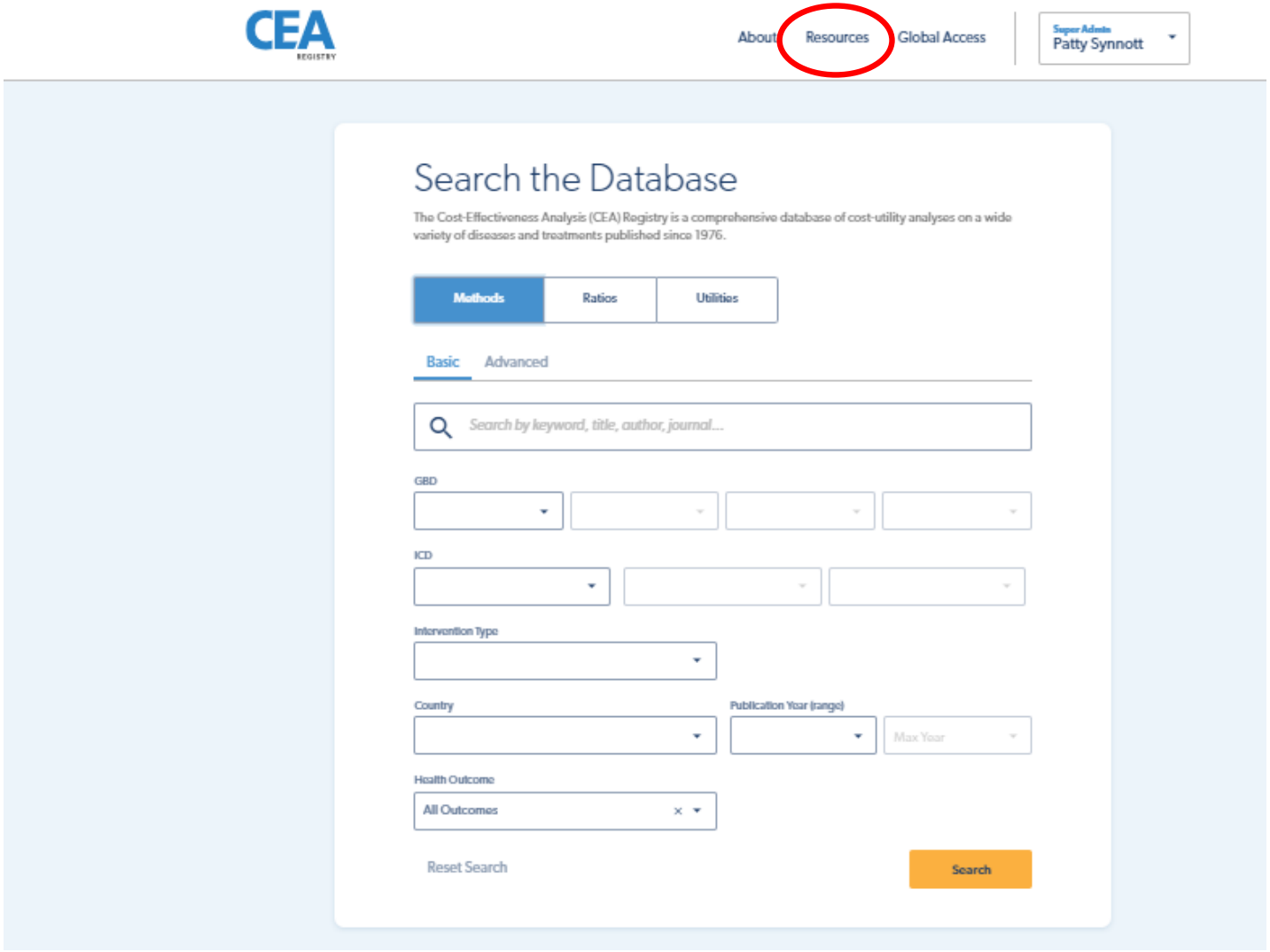
Median ICER: **103446.07**

Interquartile Range: **34381.69-200904.61**

Number of Unique Interventions: **20**

Number of Countries Represented: **5**

Resources


CEA
REGISTRY
About
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Global Access
Super Admin
Patty Synnott
Search the Database
The Cost-Effectiveness Analysis (CEA) Registry is a comprehensive database of cost-utility analyses on a wide variety of diseases and treatments published since 1976.
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Basic
Advanced
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Health Outcome
All Outcomes
Reset Search
Search

User Manual

Center for the Evaluation of Value and Risk in Health

DATABASE GLOSSARY

METHODS FORM

Article Information

1. Article Accepted:

Yes: At least one original $/QALY or $/DALY ratio is reported.

No: There are no original $/QALY or $/DALY ratios reported.

Other reasons for rejection:

- Systematic reviews
- Opinion/perspective/editorial/commentaries
- Methodological article
- Health Technology Assessments (HTAs)
- Study protocols
- Cost benefit analysis (CBA)
- $/LY only
- $/Cases
- Cost only
- QALY, DALY, or LY only
- Cases only
- Other non-ratio
- No intervention
- Other non-economic analysis

2. Health Outcomes:

$/QALY: Cost ($) per Quality-Adjusted Life Year (QALY). A comparative ratio that reports the cost associated with each additional QALY gained (i.e. 1 year in perfect health) when switching from a comparator to the intervention of interest.

Data Dictionary

Variable Name	Variable Description	Data type*	Coding	1976-2012	
				QALY	DALY
Citation Information					
Pub Med ID	Medline ID number	Num		Yes	Yes
Outcome Measures	Indicates the outcome measures of the study	Txt	$/QALY, $/DALY	Yes	Yes
Article ID	CEA Registry article ID number	Txt	11 digits, <<xxxx-xx-xxxxx>>	Yes	Yes
Review	Indicates if the article was fully read for data extraction (high impact) or only partial information was collected (low impact)	Txt	Full = All data extracted Partial = Limited data extracted	Yes	Yes
Title	Title of article	Txt		Yes	Yes
Abstract	Article Abstract	Txt		Yes	Yes
Affiliations	Organizational affiliations of the authors	Txt		Yes	Yes
Original Language	Language article was originally published in	Txt	Standard language codes (e.g. English=eng, Spanish=es, Chinese=zh)	No	No
Journal Pages	Journal pages	Txt		Yes	Yes
Primary Author	Primary author's first and last name	Txt		Yes	Yes
Primary Author Email	Corresponding author's email	Txt		Yes	Yes
Affiliation Types	Affiliation of all study authors	Txt	See user manual for full list of organization types	Yes	Yes
Affiliation Type Other Text	If affiliation other, describes organization	Txt		Yes	Yes
Funding Sources	Sponsorship/funding source of study	Txt	See user manual for full list of organization types	Yes	Yes
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Thank you

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