Masters in Public Health

Johns Hopkins Bloomberg school of Public Health and IIHMR University

Practicum Report

By

Dr Pranay Vats

Cohort - 8

2020-2022

Under the guidance of

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Education and Training Coordinator,

The Johns Hopkins Maternal & Child Health Center in India

Bloomberg School of Public Health and International Vaccine Access Center (IVAC)

TITLE OF THE PRACTICUM

SEGREGATION OF THE POOL OF CASE STUDIES WHICH WILL FORM PART OF THE COURE MATERIAL FOR JOHNS HOPKIN MATERNAL AND CHILD HEALTH CENTER IN INDIA, USING THE RINGSTED'S TAXONOMICAL CLASSIFICATION

BY

DR PRANAY VATS

COHORT -8

Enrolment Number: IIHMR- U/07/2020 -2022/0046

CERTIFICATE BY THE FACULTY ADVISOR

To Whomsoever It Concerns

This certificate certifies that Dr Pranay Vats, student of the Maters of Public Health Program offered by the Indian Institute of Health Management Research (IIHMR) University, India in collaboration with the Bloomberg School of Public Health, Baltimore has undergone Practicum Training at **The Johns Hopkins Maternal and Child Health Center (MCHI) from February 18th, 2022 – April 26th 2022**

The student, to the best of his abilities has carried out the tasks assigned to him as part of his practicum opportunity, he approached his work sincerely, scientifically, analytically and ethically.

His Practicum Training fulfills the final course requirements

As he begins his career in the Public Health space I wish him success in his future endeavors.

Dr. Seema Mehta
Associate Professor, IIHMR University

CERTIFICATE BY SCHOLAR

This certifies that this practicum report submitted by me, *Dr Pranay Vats,* under the supervision of Emily Miller and Dr Seema Mehta for the fulfilment of my Master of Public Health degree program undertaken from the date 18th February, 2022 to 26th April, 2022 encompasses original work and has not formed the basis of any other academic course for this or any other institute of higher education.

Dr Pranay Vats

Cohort - 8

2020-2022

CERTIFICATE BY ORGANIZATION

Johns Hopkins Maternal and Child Health Center India

CERTIFICATE FROM THE ORGANIZATION

Johns Hopkins Maternal and Child Health Center India (MCHI)
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Baltimore, MD 21231
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To Whom it May Concern:

This is to certify that **Pranay Vats,** student in the Master of Public Health (MPH) program offered by the Johns Hopkins School of Public Health in cooperation with iIHMR University, Jaipur has successfully completed his practicum training with the MCHI from February 18th, 2022, through April 26th.

During his time with us, Pranay deployed a systematic approach to identify previously published case studies within the domains relevant to the MCHI training priority areas. These studies will be compiled and catalogued so that the MCHI Education/Training team can easily identify case studies to deploy in future coursework.

Please feel free to contact me (emill114@jhu.edu) for further information or clarification.

Kind regards,

Emily Miller, MGH
Education and Training Coordinator
Johns Hopkins Maternal and Child Health Center India (MCHI)
Bloomberg School of Public Health • International Vaccine Access Center (IVAC)

TABLE OF CONTENT

1.ABOUT THE ORGANIZATION

The Johns Hopkins Maternal and Child Health Center in India (MCHI), works towards strengthening public health education, accelerating research in maternal and child health, and supports implementation of program launched in the public health space that will help in reducing incongruity and in turn improving the quality of life of young women and children of the country, and will further help us get closer to achieving our Sustainable Development Goals (SDGs).

2.KEY PRIORITY AREAS

1) MCHI Education - As part of its strategic framework, the MCHI collaborates with local and international institutions to facilitate public health trainings to strengthen capacity for Indian leaders and implementers within the MCH space. The courses offered by the center include -

   - The COVID - 19 Response in India: Impact on Women and Children's Health and Wellbeing
   - Cost of Diseases in LMICs
   - Vaccine Economics for COVID- 19: Teaching Vaccine Economics Everywhere (TVEE)
   - Evidence to Policy Seminar Series

2) **MCHI Research Areas -** The International Vaccine Access Center expedites equitable and sustainable access to vaccines in LMICs by developing, synthesizing, and utilizing credible evidence to make informed decisions about their activities. Their methods combines

meticulous science, fruitful partnership and clear conveying of thoughts with capacity building and training.

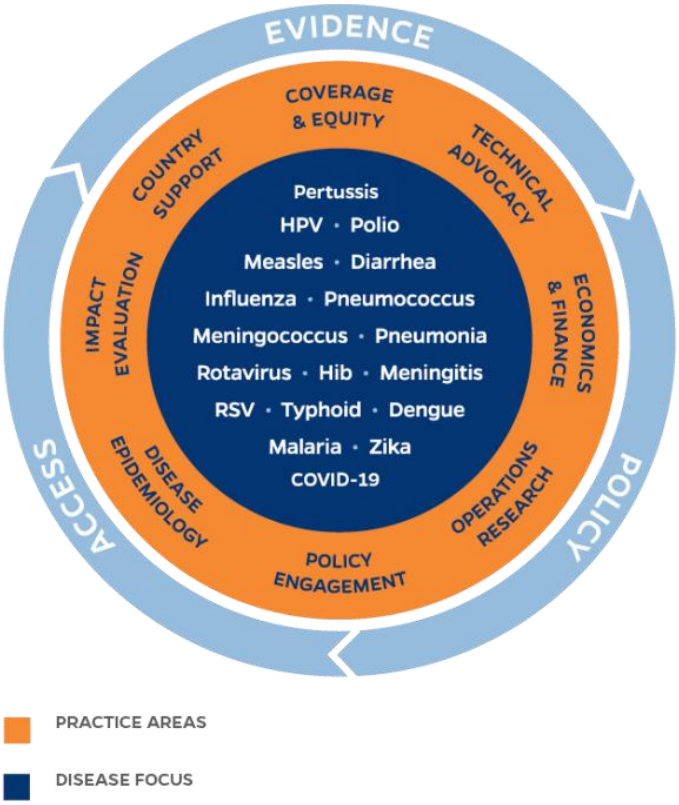

Figure1. Taken from the official website of the MCHI organization

3) **COVID Response and Relief Activities -** The current pandemic has had catastrophic consequences on many families and communities in the country. The organization worked came together with the Johns Hopkins India Institute, to form a COVID-19 Task Force which raised awareness, responded to needs, and coordinated activities, provided services, and opportunities to tackle the COVID-19 pandemic in the country. Some of their programs include -

- Along with the BUDS™ foundation the center provided community relief and ran a mobile medicine outreach program.
- It build COVID assistance centers and provided nutritional support

- Strengthened routine childhood immunization programs at the time of the pandemic
- Provided oxygen, emergency care and referrals.

3.PRACTICUM OBJECTIVES

As part of the practicum opportunity with the Hopkins MCHI in India I was asked to deploy a systematic approach in identifying previously published case studies within the domains relevant to the MCHI training priority areas. These studies then needed to be compiled and catalogued so that the MCHI Education/Training team can easily identify case studies to deploy as part of the running courses.

These studies will add to the robust portfolio of available global health case studies that can be used to enrich its courses and trainings and to identify opportunities for future development of learning tools. Final deliverable also included developing a case study handbook for learner application and summary document of the findings.

The practicum was undertaken to put into practice the learning objectives of the module titled- “Tools of Public Health” -300.615.81, the objectives were -

1. To build Analytics/Assessment Skills

- By understanding the importance of data in shaping public health issues

2. To build upon and enhance communication skills

- Utilizing learned skills to communicate public health research effectively with a variety of stakeholders

3. Public Health Sciences

4.PROJECT ENGAGEMENTS

4.1BACKGROUND

Each day close to 67,385 babies are born in India, and every minute at least one of these babies die. In the year 2020, the infant mortality rate of the country was 29.07 deaths per thousand live births. The trends show an average rate of decline of 2 deaths per one thousand live births per year. Although things are steadily improving a major significant decline has not been seen since the 1970s. Therefore continuous efforts are still needed in reducing infant deaths and improving maternal health. The activities carried out by the Hopkins MCHI centre's are focused around maternal health, decreasing new-born fatality, warranting top-notch care, reducing the occurrence of diseases that can be prevented using vaccines, fulfilling the requirements of kids living in the urban and rural setting who feel neglected, along ith strengthening public health capacity in India. Leaders and implementers in the MCH space are provided with regular training to strengthen capacity through courses which are free to join and open for everyone. These courses follow the Harvard case study method, named after the prestigious business school where it was institutionalized in the 1920s. This approach has been a renowned pedagogical tool used in business schools and major corporations across the United States. Recently this approach ha found a place in Public Health, both the Mailman School of Public Health at Columbia and the Harvard T.H. Chan School of Public health utilize case-study learning to enhance their students' critical thinking capacities and active learning abilities. Case studies allow for a particular issue of focus or analysis in-depth, making them ideally suited for exploring the complex real-life situations. This method allows the reader to participate in active learning, to investigate a problem and examine alternative solutions, then propose the best solution using the evidence available.

Previous literature and emerging evidence conducted by the MCHI team had identified real-world applications in training for public health professionals in India as a major gap. As such, the MCHI Education and Training team was interested in developing a robust portfolio of available global health case studies which could be used to enrich its courses and trainings and to identify opportunities for future development of learning tools.

Collection of these previously published case studies has to be done using a systematic approach. The entire process should be transparent and one which leaves the review stakeholders clear about the process involved in identifying the case studies.

4.2 METHOD

The search carried out is a comprehensive lit search using multiple databases including MEDLINE, PUBMED and Embase and Popline. Although grey literature can also be used to source case studies, we prioritized electronic databases, since grey literature does not generally go through a process of meticulous peer-reviewing, which raises huge doubts over its standard and reliability. Studies were included if -

(1) the year of publication was after 2000;

(2) Had the geographical focus to LMICs;

(3) reported peer-reviewed cases with original quantitative and qualitative data.

Studies were limited to the English language; they were excluded if they had a geographical focus outside of India and neighbouring LMICs. They were also excluded if the comprising data was not original.

Boolean search was undertaken using keywords – "Policy continuum"; "COVID19"; "TVEE"; "Vaccine economics + COVID19"; "Disease costing + LMICs"; "EPMM"; "Survival convergence in maternal care"; "Financial analysis methods" "COVID19"; "Economic analysis methods"

PRIMARY KEYWORD	**BOOLEAN EXPRESSION**	**SECONDARY KEYWORD**	**DATABASE**
Policy continuum	AND (+)	COVID-19	EMBASE, PUBMED
TVEE	AND (+)	-	EMBASE, PUBMED, MEDLINE
Vaccine economics	AND (+)	COVID-19	
DISEASE COSTING	AND (+)	LMICs	EMBASE, PUBMED, MEDLINE
EPMM	AND (+)	-	Popline, PUBMED
Survival convergence	AND (+)	Maternal care	Popline, PUBMED, EMBASE
Financial Analysis method	AND (+)	COVID-19	EMBASE, PUBMED, MEDLINE
Economic Analysis method	AND (+)	COVID-19	EMBASE, PUBMED, MEDLINE

Table1: Keywords used to source for case studies on different databases

Based on the above-mentioned inclusion-exclusion criteria an initial selection was made based on the titles and abstracts. We then performed a full-text screening. Studies were only included after agreement as reached with both reviewers.

4.3 FINDINGS OF DEPLOYED SEARCH STRATEGY

Our systematic literature search for case studies resulted in 273 findings, upon omission of 13 duplicate studies, 260 records then went through an initial screening of abstracts and titles, after which 235 were ruled out because they were not relevant to the health sector or medicine and hence could not be included a part of the course material. While some of the studies that were excluded were not cantered around the geographical locations of interest, some focused around the activities and coursework of the MCHI and IVAC centers, and hence would not benefit our learners.

Full-text was then reviewed and rest of the 25 case studies were selected to form part of the teaching courses offered by the faculty of the Hopkins MCHI center. Of the total (n=260) case studies reviewed, Refworks was used to review (n=33) the case studies sourced from EMBASE , out of these, n=7 were included. Rest of the case studies (n=227), sourced from other databases were reviewed using SysRev$^{TM.}$ .The reults of which are shown in the figure 2 below -

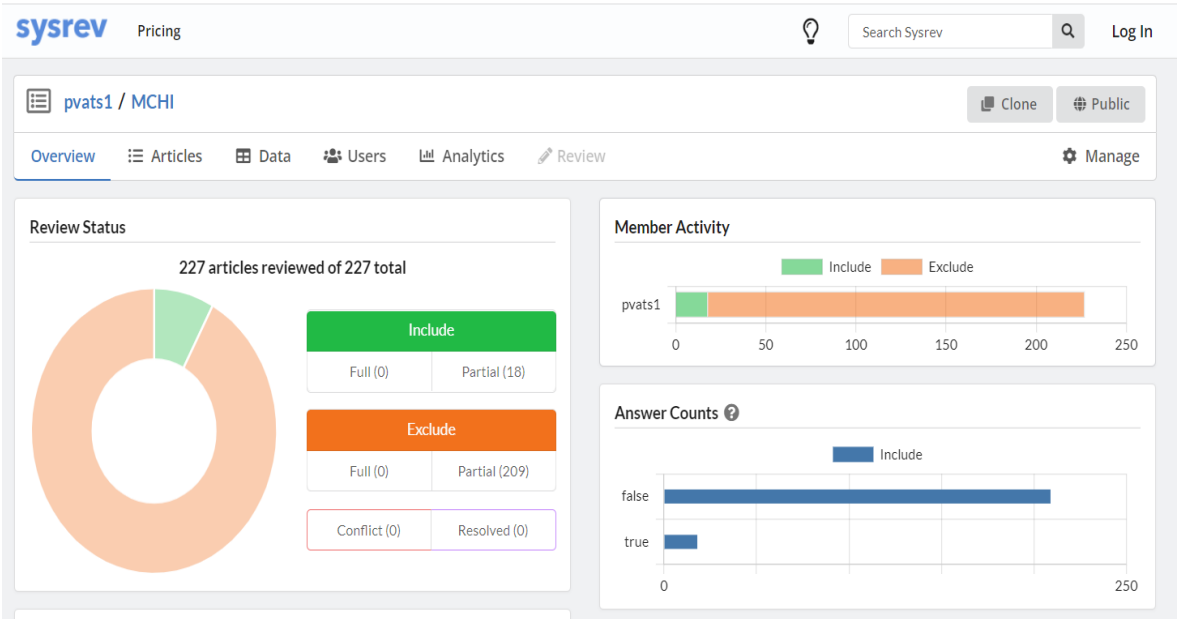

Figure 2: Review status of n=227 records on SysRev^{TM}

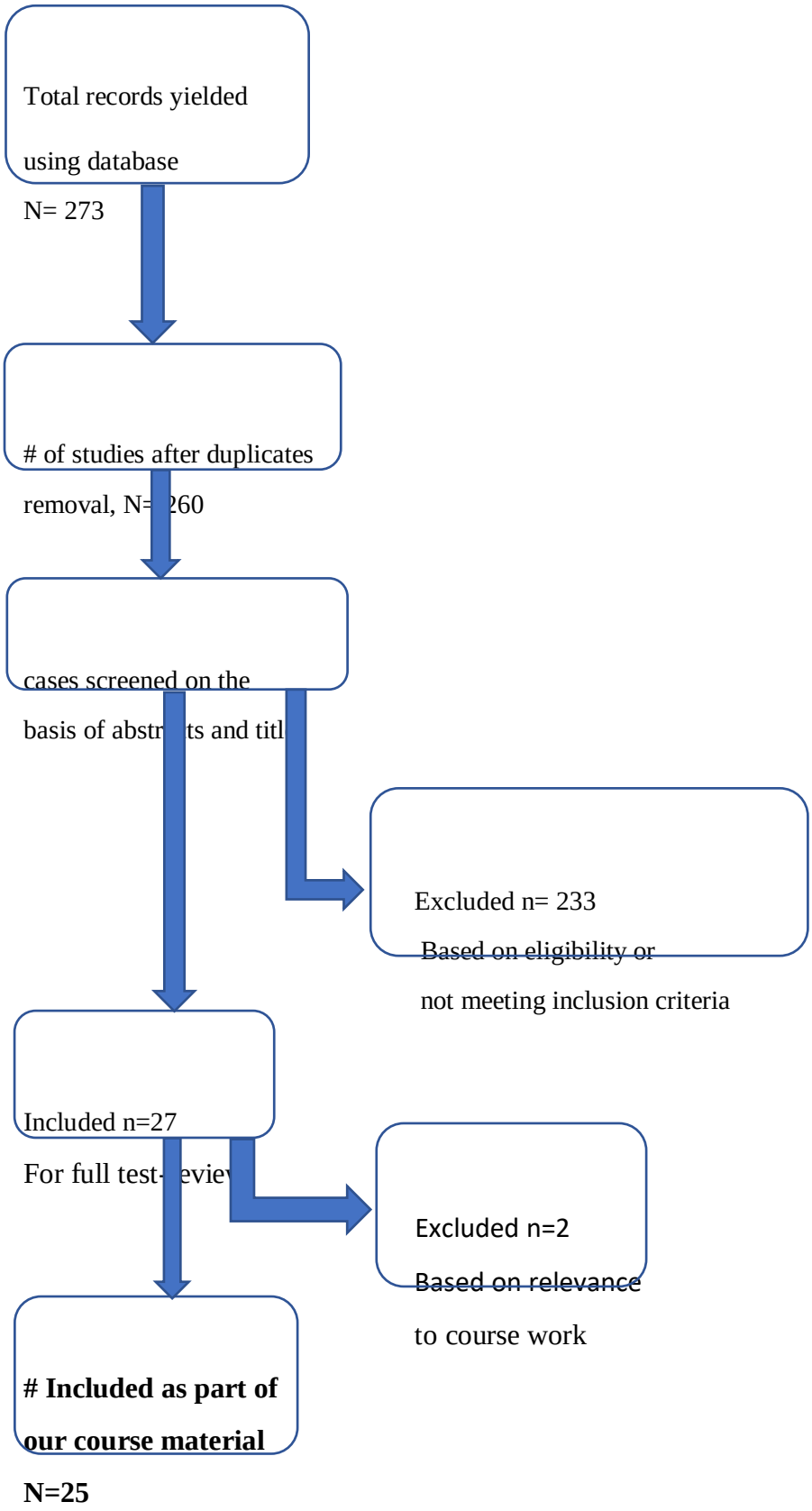

Figure 3: flow diagram of literature search strategy

4.4 SEGREGATION BASED ON TAXONOMY–

The collected case studies included varied in form of information and knowledge and hence were needed to be segregated using a scientific approach for easier access and understandability. Lambe (2007) defined Taxonomy as the "structured set of names and descriptions used to organize information and documents in an intelligible way". Public health professionals and trainers can devise their on way to utilize various taxonomies to look for explanations for their problem statement and study question. Taxonomies allow people in the public health space, scientists and educators to better determine the position of information and data The twenty-five studies included were set apart based on a taxonomy classification to differentiate between them on the basis of purpose.

Many taxonomical classifications were considered, the most common ones being based on the choice of methodology. The taxonomies given by *Jalil and Marcyzk* (Yazdani et.al,2021) , and the one given by *Gray et.al (2014)* are based on research design and will not help the trainers of our courses to source the case studies based on their relevance. Similarly, a classification based on the type of study like the one given by *Stern et.al* or by *Creswell et.al* (Yazdani et.al,2021) *w*ill also not prove to be beneficial since all our records are in the form of descriptive case studies. Hence, because of these reasons the *Ringsted taxonomy classification* proved to be ideal since it allowed for the case studies to be segregated on the basis of purpose.

Ringsted went through different publications from the space of medicine and health, she followed similar approaches to *Campbell and Cook* (Anna et.al, 2018) to design her own version of the model. The core of her model is formed by "the conceptual theoretical framework that is a mainstay of any study and forms the basis of many research methodologies."[i] (Yazdani et.al, 2021)

“The Ringsted classification comprises of four categories of research, -

1- *Exploratory Studies*: The aim of an exploratory study is to discover and identify the elements of a phenomenon and explaining the relationships between them. A collection/pool of research or models of inquisition are also placed under exploratory studies

2- *Experimental Studies*: Justifying has been cited as the main goal of experimental studies.

3- *Observational Studies:* These studies aid in predicting the consequences.

4- Translational Studies: This type of study is focused around implementation of knowledge and basic science/clinical research to bring about a positive improvement in health outcomes” (Yazdani et.al, 2021)

4.5 BENEFITS OF USING RINGSTED TAXONOMY

This classification allows for complete transparency in the type of knowledge each case study would produce owing to its unique methodological classification. This taxonomical classification provides exclusiveness which prevents different type of case studies to be pooled under the same category and also prevents any record to slip through any gaps because of faulty/unclear definitions of these categories.

4.6 RESULT OF SEGREGATION

All the included twenty five case studies were hyperlinked onto an excel spreadsheet. The title of the study, author’s name and their classified category which mentioned the final type of study were assigned in separate columns. After full-text review and assigning of categories to each study, we collected a total of n=14 Exploratory studies; n=2 experimental studies; n=5 observational studies and the total number of n= 4 translational case studies. The result of the classification can be seen in the following snapshot of the spreadsheet -

TITLE OF STUDY	AUTHOR	TYPE OF STUDY
COVID-19 vaccine: Challenges in developing countries and India's initiatives	Chakraborty et. al	Observational
India's cost-effective COVID-19 vaccine development initiatives	Chakraborty et. al	Observational
The role of manufacturers in the implementation of global traceability standards in the supply chain to combat vaccine counterfeiting and enhance safety monitoring.	Jarrett et.al	Translational
Decentralization and health system performance - a focused review of dimensions, difficulties, and derivatives in India	Panda Et.Al	Exploratory
Recommendations for refining key maternal health policy and finance indicators to strengthen a framework for monitoring the Strategies toward Ending Preventable Maternal Mortality (EPMM).	Jolivet et. al	Translational
On willingness to pay for Covid-19 vaccines: a case study from India.	Das et.al	Exploratory
Universalisation versus targeting in maternal and child health care provisioning: Evidence from India.	Paul Et.al	Exploratory
Multisite, mixed methods study to validate 10 maternal health system and policy indicators in Argentina, Ghana and India: a research protocol.	Jolivet et. al	Experimental
Tracking development assistance for health and for COVID-19: a review of development assistance, government, out-of-pocket, and other private spending on health for 204 countries and territories, 1990-2050.	Not mentioned	Observational
Economics of healthcare access in low-income and middle-income countries: a protocol for a scoping review of the economic impacts of seeking healthcare on slum-dwellers compared with other city residents.	Teixeira de Siqueira-Filha et.al	Exploratory
Stark choices: exploring health sector costs of policy responses to COVID-19 in low-income and middle-income countries.	Torres-Rueda	Exploratory
How China controls the Covid-19 epidemic through public health expenditure and policy?	Jin et.al	Exploratory
Collaborative Commissioning: regional funding models to support value-based care in New South Wales.	Koff et.al	Translational
The cost of clinical management of SARS-COV-2 (COVID-19) infection by level of disease severity in Ghana: a protocol-based cost of illness analysis.	Ismaila et.al	Exploratory
Utilization cost of maternity services for childbirth among pregnant women with coronavirus disease 2019 in Nigeria's epicenter.	Banke-Thomas et.al	Exploratory
Financial Risk for COVID-19-like Respiratory Hospitalizations in Consumer-Directed Health Plans.	Eisenberg et.al	Observational
Mortality by COVID-19 in Spain. Approximation through public health expenditure by autonomous communities.	Ramón-Dangla	Exploratory
Impact of COVID-19 on Health Economics and Technology of Diabetes Care: Use Cases of Real-Time Continuous Glucose Monitoring to Transform Health Care During a Global Pandemic.	Garg et.al	Exploratory
Long-term trends in fetal mortality: Implications for developing countries	Woods et.al	Exploratory
Health decentralization, government health expenditure and health outcome in China	Chen et.al	Exploratory
Disparities in child mortality trends: What is the evidence from disadvantaged states in India? the case of Orissa and Madhya Pradesh	Nguyen et.al	Exploratory
Survival convergence: Bringing maternal and newborn health together for 2015 and beyond	Starrs et.al	Observational
One vaccine to counter many diseases? Modelling the economics of oral polio vaccine against child mortality and COVID-19	Chang et.al	Translational
Inpatient Care Costs of COVID-19 in South Africa's Public Healthcare System	Edoka et.al	Exploratory
Women, men and COVID-19	Aleksanyan et.al	Experimental

Table 2 : Snapshot of the excel sheet showing the segregation

5. DISCUSSION

The collection of case studies covers topics related to maternal and child health with cases ranging from different topics like disparities in child mortality trends, survival convergence, different maternal health system and policy indicators in LMICs, strategies designed towards Ending Preventable Maternal Mortality (EPMM) and Utilization cost of maternal health services.

The faculty that teaches the course on vaccine economics could draw upon the cases related to challenges in developing countries including India' initiatives towards vaccine rollout, the issue of vaccine counterfeiting and the role manufacturers can play to combat it. Additionally, there are cases that studied the willingness to pay for COVID-19 vaccines and a case that models the economics of polio vaccine against child mortality and COVID-19.

Cases that talk about the inpatient care cost of COVID-19 in South Africa and Ghana and Health economics and Technology of diabetes care, financial risk of COVID-19 like respiratory hospitalizations, can be used in the module on Cost of diseases in LMICs.

Additionally, a newly added course that covers the COVID-19 pandemic can include cases ranging from the one titled - "Man, woman and COVID-19" which covers the gender bias in providing of care services during the pandemic, case study on China and how the country controls the pandemic through public health expenditure and policy interventions, to assess the effect of COVID -19 on Health economics.

6. KEY LEARNINGS AND WAY AHEAD

After studying various taxonomies it can be said that there is no single strategy of classification that will satisfy all purposes of segregation of records. There are many fundamental and intricate differences between each one of them. It is important to understand the objective or the learning goal of the segregation, for both the trainers and the learners.

The other classification that separates the records based on purpose was the Bloom's taxonomy. Ringsted's classification was chosen because the Bloom's taxonomy because the latter creates a false sense of hierarchy with it's "higher order" and "lower order" outcomes.

Working on this project allowed me to hone my skills on sourcing of data using a systematic and scientific approach and gain insight how the results can in turn prove to be useful tools for enhancing the knowledge base of the learners. It gave me the opportunity to conduct a rapid review using software like Refworks and SysRev$^{TM.}$, tools which aided in hastening the review process considerably. Through the process, most importantly I recognized the vital role case studies can play in not only learning about the issue at hand but also a mean to provide solution to improve health outcomes.

As part of the project, a handbook will be designed based on Ringsted classification for the trainers as well as the learners who enrol for these courses, the handbook will assist in sourcing of these case studies based on their requirements or preference and stages of the course. By being part of the development stages of the course material I was able to appreciate the effort and thought that has gone behind deigning these course

7. LIMITATIONS

A key limitation while designing the search strategy was the decision to exclude case studies published in other languages like Chinese, German and Hindi. The case studies included were all published after the year 2000, this could have resulted in key information and findings published before that year. While studying about cost of diseases it could've proved to be important in comparing the difference between then and now. Additionally, grey literature was not accessed which could have yielded more results.

8. ACKNOWLEDGMENTS

I deeply acknowledge Dr Seema Mehta who has acted as a mentor in each step of the project. I also acknowledge Emily Miller for firstly, giving me the opportunity to work on this project with the Johns Hopkins Maternal and Child Health Center in India and during each stage of the project with constant guidance and clarity. Additionally I would also like to thank the faculty and members of the Dean Henderson library from providing me with their services and important resources and data that were needed to undertake this project.

9. CONFLICTS OF INTEREST

None declared

10. FUNDING

No outside funding was provided for the undertaking of this project with the MCHI center in India.

11.REFERENCES

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2. Lambe, (2007) : “Organising Knowledge: Taxonomies, Knowledge and Organisational Effectiveness”

3. Anna I Petursdottir, James Carr, (2018): “Applying the Taxonomy of Validity Threats from Mainstream Research Design to Single-Case Experiments in Applied Behavior Analysis”

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