

# PHESA NEWS LETTER

## PUBLIC HEALTH EVIDENCE SOUTH ASIA

AUGUST, 2014

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### PUBLIC HEALTH EVIDENCE SOUTH ASIA (PHESA)

Public Health Evidence South Asia (PHESA) is an initiative aiming to meet the public health evidence needs of the South Asian region. The initiative, which includes the South Asian satellite of the Cochrane Public Health Group (CPHG), is based at Manipal University. Networking with public health and development agencies across the region, PHESA is working towards building capacity to address Low and Middle Income Countries' (LMICs) public health priorities.

Capacity is built through mentoring systematic review authors from LMICs and conducting methodological training related to public health systematic reviews.

### VISION

To facilitate the synthesis, production and dissemination of high quality evidence on effect of Public Health interventions relevant to South Asian Region

### OBJECTIVES

#### 1. Capacity Building:

*Mentor systematic review authors from LMIC and support conduct of systematic reviews on the effectiveness of public health interventions relevant to LMIC*

#### 2. Evidence Building:

*Producing systematic reviews of public health interest relevant to South Asian Region*

#### 3. Networking:

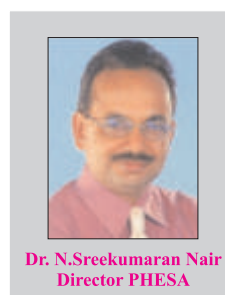
*With institutions and individuals across the region*

#### 4. Primary Research:

*Including methodological development ,Knowledge dissemination and advocacy*

#### 5. Knowledge Dissemination and Advocacy

### OUR NEW LOGO



Dr. N. Sreekumaran Nair  
Director PHESA

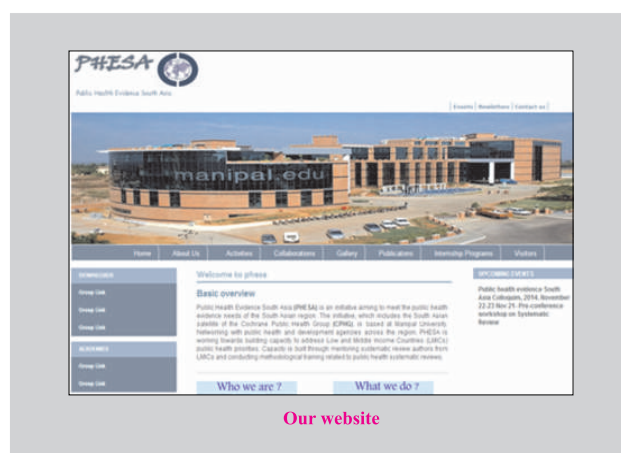
### Dear friends,

Time has moved along at rapid pace, PHESA has completed the first year of its existence. Last year has been an intense journey, we have no hesitation in mentioning that it has been a rewarding one. The journey has been very challenging, PHESA team has accepted these challenges and has the knowledge sharing culture that prevails in our organization is something which is exceptional, we pass on this culture and ensure that the culture is maintained and continue to be the same.

We get a mixed feeling when we look back at the last year's activities. On one side we have a satisfaction of achievement upto an extent but on the other side, there's still lot of opportunities waiting for us to seize. Happy to note that quality and quantity of team strength is increasing, PHESA is growing day by day with many crucial projects coming in, becoming more popular with regards to academic strength, exposure, knowledge, community development and funding opportunities. We look forward to take up more challenges and continue to deliver quality work in the field of public health.

This news letter summarizes our work for the last 6 months, we thank all the reviewers for their contribution and expect the same in the future. We acknowledge Manipal University for the financial support and all other collaborators for involving PHESA in their network.

Dr. N. Sreekumaran Nair



Our website

Creating and disseminating better evidence for Public Health in South Asia

## Systematic Review for Researching Health Systems; Will Conventional Approaches Work?



**Dr. Joe Varghese,**  
Senior Scientist, Health  
Governance Hub  
Public Health Foundation of  
India

Ever since the 2000 World Health Report 'Health Systems: Improving Performance' the health policy and systems research (HPSR) has evolved as a separate research discipline of public health. The current understanding of health system and health system changes focus on the hardware of health systems such as financing, human resources

and technology as well as the software factors such as power, values, trust that shape the interactions of various health system actors and institutions. While the HPSR is becoming better defined in recent times, it is important that the researchers pay greater attention to quality and use rigorous scientific approaches in their work. However, within HPSR paradigm, it is important to consider whether the conventional yardsticks of what constitute quality and knowledge applies to it or not. This is especially a problem when systematic reviews are used for answering various health system questions. This argument is nuanced by the nature HPSR and the current dominant approaches to systematic reviews. In order to understand this potential conflict, let's examine each of them;

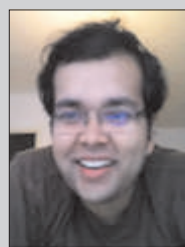
Health systems are complex and constantly changing. They are embedded in social and biological systems that involve multiple actors and entities which are interconnected by mutually influencing interactions. The importance of health system's software elements that drive the character of health system hardwires is particularly important in understanding health system changes. Therefore, the information generated from HPSR is often qualitative, context specific and sometime relevant only to a particular time period. For example, tackling obesity is complex because it has a number of possible health system interventions and the ideal way forward depends on local context and may change over time.

Systematic reviews are excellent tools for informing the scientific community and the policy actors on collective knowledge generated from various studies. The conventional approaches systematically attempt to find all the relevant evidence and draw that evidence together in such a way that the more robust studies are given greater weight. It is indeed welcome that systematic reviews in public health are no longer stuck to inclusion of only controlled studies. Nevertheless, the emphasis remains at providing aggregate quantitative information rather than understanding quantitative and qualitative changes in the backdrop of context specific information. A lot of HPSRs are qualitative in nature and even when quantitative methods are

used, the information is embedded in particular local and regional contexts.

When it comes to systematic reviews for HPSR, science is not in aggregation, but in details. It doesn't serve the purpose to classify them as narrative review and attribute an inferior value. The solution lies in developing newer paradigms that can encompass qualitative information in understanding health system changes. Along with the changes in methodological steps involved in systematic reviews, it also calls for changes in the interpretation of the results. The systematic reviewer community should acknowledge that the evidence coming from systematic reviews of HPSRs are often patchy and therefore they need to present their analysis in such way that the decision makers have enough room to interpret it in their context.

## Network Meta-Analysis: A new paradigm for public-health evidence synthesis



**Mr. Shabbeer Hassan**  
MSc Biostatistics  
Manipal University

The rapid increase in alternative medical treatment options has brought about the need for research centered on comparing the effectiveness of those treatments. Randomized controlled trial (RCT's) which is the gold standard for evidence generation, cannot be used for comparing many treatment, so other methodological approaches are needed. A meta-analysis

and systematic review [also called systematic review and meta-analysis (SRMA)] is known to be a highly useful statistical tool which provides a final (summary) estimate of treatment effect by methodologically combining data from many RCT's. However, a key constraint of standard (or pairwise) meta-analyses is that they can compare only 2 treatments at a time. Hence, when several treatments are available, conducting many individual meta-analyses would provide only limited information as it can only answer questions about treatment pairs. However, this does not assist in optimal clinical decision making as each meta-analysis would give a small part of the whole picture.

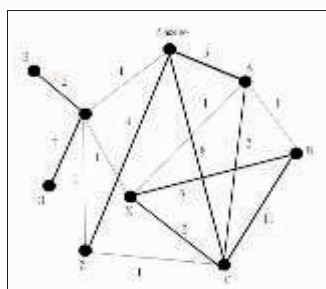
The need for establishment of a method which would summarize evidence across many interventions has become paramount. Network meta-analysis (or multiple treatments meta-analysis or mixed-treatment comparison) is increasingly seen as such a measure. It is a relatively new technique which has been developed to assess the relative effectiveness of several interventions and synthesize evidence across a network of randomized trials. It is based on the simultaneous analysis of direct evidence (which comes from studies directly randomizing treatments of interest) and indirect evidence (which comes from studies comparing treatments of interest with a common comparator).

The first and most important step of network meta-analysis is preparation of network plot. It can be regarded as the foundation of the entire NMA. Network Plot is a mapping of the interventions which have been directly compared and the interventions which need to be indirectly compared using the evidence from direct comparison.

Nodes (circles) represent the interventions being compared and edges (lines) represent the available direct pair wise comparisons between pairs of interventions. The amount of available information is presented by weighting the nodes and edges using different node sizes and line thicknesses.

Each treatment node or each comparison edge is weighted according to the number of studies including either that treatment or that comparison. This depicts which interventions are more frequently compared.

The figure given below, has 51 pair wise comparisons. Treatment C (n=24), Placebo (n=19) and Treatment B (n=15) have the most number of links. The most common comparison seems to be between Treatment B and C. However in the above network many possible comparisons still exist. For example: GE, GZ, ZX, ZB etc trials have not been done. These constitute the indirect comparisons.



The major assumption underlying the validity of indirect and mixed comparison is that there are no important differences between the trials making different comparisons other than the treatments being compared. This assumption along with several others like, including similarity, transitivity, consistency, and coherence form an important chain which needs to be satisfied before conducting a NMA. Generally, more the number of treatments and studies which are included in constructing the network plot, the more clinically informative the resulting network meta-analysis become. A problem with such large data sets might be that it could increase the variability across treatment comparisons and included studies which in turn render the transitivity assumption difficult to defend. Technically, each treatment of interest must be represented by at least 1 study and the network needs to be connected. A large network informed by few studies often yield imprecise estimates and hence wrong policy decisions might be taken. As for all systematic reviews, network meta-analysis should be based on detailed protocols, ideally registered prospectively.

A comprehensive search of the literature, careful assessment of the body of evidence with respect to the plausibility of the transitivity assumption, and thoughtful discussion of the potential impact of trial-specific biases on

the effect estimates can maximize transparency of a network meta-analysis and avoid errors in its interpretation. The methods for network meta-analysis will no doubt continue to develop and will be informed by the experience gained from increased use and has a tremendous potential to be the gold standard for health care evidence synthesis.

## PHESA ACTIVITIES

### Initiatives of PHESA:

#### 1. Mentoring And Production Of Reviews

- Students mentorship programme
- Health care researchers mentorship programme for systematic reviews and evidence based public health
- Systematic review mentoring programme at MDRF, Chennai
- Mentorship programme at Centre for Chronic Disease Control (CCDC), Delhi
- Mentorship programme at Population Service International, (PSI), Delhi

#### 2. Workshops on Systematic Review

#### 3. Internship Programme

## MENTORING AND PRODUCTION OF REVIEWS

Production of reviews of public health importance has been initiated under following domains;

1. Childhood Obesity
2. Cardiovascular Diseases (CVD)
3. Diabetes
4. Down Syndrome

### I. Reviews in Childhood Obesity:

#### Review Titles:

1. Prevalence of obesity in children in South Asian Region
2. Risk factors for obesity in children - Evidence from South Asian Region
3. Interventions for preventing obesity in children in South Asian region
4. Interventions for controlling obesity in Children

#### Progress of the review

##### A. In the process of publication:

*Prevalence of Obesity and Overweight in South Asian Children: A Systematic Review and Meta-analysis*

Baby S Nayak, Anusha Mujja, N. Sreekumaran Nair, Preethy D'Souza, Melissa Glenda Lewis,

B. UnniKrishnan, Judith Noronha, Prasanna Mitra

## B. Completed review:

*Risk factors for obesity in children - Evidence from South Asian Region*

## C. Ongoing review:

1. Interventions for preventing obesity in children in South Asian region
2. Interventions for controlling obesity in Children

## II. Reviews on Cardio Vascular Diseases, Down Syndrome and Diabetes

### Progress of the review

- Submitted the title registration form
- Protocol completed
- Search completed

## WORKSHOPS

1. "Sensitization Workshop on Systematic Review" was held on 12th and 20th March 2014 at Manipal College of Nursing (MCON), Manipal University, Manipal



Workshop in MCON



Certificate distribution at the workshop

2. Dr. N. Sreekumaran Nair participated as a faculty in the 12th MDRF-UAB-FIU International Seminar on "Prevention and Control of Non-Communicable Diseases" held from January 31 to February 2, 2014 at Madras Diabetes Research Foundation (MDRF), Chennai and delivered a talk on "Public Health Systematic Reviews".

3. Paper entitled "Systematic Reviews in Public Health Evidence Building" presented by Dr. N. Sreekumaran Nair in the National Seminar on Emerging Issues in Population and Public Health in India at the Department of Demography, University of Kerala, during 6-8 March 2014.
4. Brief talk by Dr. N. Sreekumaran Nair on Systematic Review at Indian Institute of public health, Hyderabad.
5. Brief talk by Dr. N. Sreekumaran Nair on Systematic Review at Research forum, Manipal University.
6. Training session on systematic reviews by Ms. Melissa Glenda Lewis at the Summer school organized by Students 'Research forum, Manipal University from July 23-29, 2014.
7. Training session on Meta-analysis by Mr. Ravishankar at the Summer school organized by Students 'Research forum, Manipal University from July 23-29, 2014.
8. Workshop on "Evidence Informed Dentistry" at A.J. Institute of Dental Sciences, Mangalore in association with International association for Dental Research, India division.

## INTERNSHIP PROGRAMME

The Internship programme is an initiative of PHESA designed for undergraduates, postgraduates and doctorate students of diverse backgrounds for the duration of 1 month, 3 months, 6 months or for 1 year to work with PHESA.

Under this programme, students are involved in ongoing projects under PHESA and get an exposure to public health research, students are educated on health disparities, health issues, professional development and community health promotion activities. Students receive certificate on successful completion of internship.

## Activities

Interns were involved in various activities of the ongoing projects;

1. Developing protocol for systematic review under Cochrane methodology.
2. Trained on search strategy to conduct a systematic review.
3. Secondary data extraction from the literatures
4. Involved in writing review articles on public health issues of South Asia.

## Interns: July



**Dr. Ashrita Saran**  
BDS, MPH



**Ms. Ashwini Shenoy**  
Msc Biostatistics



**Dr. Kumar Sumit**  
BDS, MPH



**Dr. Megha Thakur**  
BDS, MPH



**Ms. Miti Judith**  
Bsc MPH



**Dr. Richa Jaswal**  
BDS, MPH



**Dr. Tanvi Bansal**  
BDS, MPH



**Mr. UN Yadav**  
Msc, MPH

## Interns: August



**Dr. Mannat Singh**  
BDS, MPH



**Aleksandra krawczyk**  
Bsc in Nutrition



**Dr. Shradha Parsekar**  
BHMS, PGDHHM, MPH



**Dr. Arun Simon**  
BDS, MDS\*

## Feedback on the internship programme

*“From the time of joining the internship programme at Public Health Evidence South Asia (PHESA), I have been experiencing research in a new perspective. It is a wonderful place to be in and the work atmosphere is very comfortable and conducive for research. The regular, intensive training and discussions taken by Prof. N Sreekumaran Nair, has really helped me to perceive and to embrace what I was learning. The hands on projects and research activities on systematic reviews has given me the much needed appetite for research. I would like to thank Dr. Bhumika TV, Research Assistant for all valuable inputs provided and my fellow interns for the ample support. The inspiration that PHESA gives to research work is exemplary and various research publications and conference presentations of PHESA speaks for itself. After the training under PHESA, I am confident about my future in research. Thank you so much for the opportunities provided”.*

### “Come experience research with PHESA”

Dr. Arun K Simon  
Intern at Public Health Evidence South Asia (PHESA)  
Postgraduate Student, Department of Public Health Dentistry,  
Manipal College of Dental Sciences  
Manipal University, Mangalore

*“Public health Evidence South Asia (PHESA) has redefined the area of research for me. I have learnt variety of new ways to conduct research. I also started working in the area of systematic reviews which is a new and great experience for me. The consistent discussions taken up by Prof. N Sreekumaran Nair has been very helpful in bringing up new ideas and innovative ways to think about the work we do here. He is also very approachable and always ready to guide and help in all possible ways. I would like to thank sir for the generous and professional sharing of his knowledge and experience. I would also like to thank Dr. Bhumika T.V., Research Assistant for her guidance throughout. Speaking of the work environment, it is very comfortable and friendly. Thank you so much for what has been an extremely valuable training course. It was great working under PHESA”.*

### PHESA : “A fantastic course and very thought provoking”

Dr. Mannat Singh  
Intern, Public Health Evidence South Asia (PHESA)  
Manipal University, Manipal

*“Joining internship at Public Health Evidence South Asia (PHESA) was a very great experience. As a part of internship I was supposed to work on secondary data extraction and the topic chosen was child sexual abuse, but Prof. N. Sreekumaran Nair gave a chance to learn systematic review and many more things, which I had never learnt before. Hence I am indebted to sir for giving me an opportunity.*

*Working at PHESA is also a pleasurable experience due to the working environment and people with whom I am working. Each day is filled with discussion and debates which enhances my knowledge in different fields.*

*I am very much lucky to get this opportunity to work under Prof Nair, Dr. Bhumika and the team”.*

Dr. Shradha Parsekar  
Intern, Public Health Evidence South Asia (PHESA)  
Manipal University, Manipal

## METHODOLOGICAL DEVELOPMENT FOR KNOWLEDGE SYNTHESIS AND TRANSLATION

PHESA has been undertaking many initiatives to achieve proficiency in statistical techniques.

### 1. Students' project:

Project on "The Evolution, Methodology and Application of Network Meta-analysis in Health Sciences" has been completed. (Ms. Shilpa, Msc Biostatistics)

### 2. Doctoral programme:

PhD dissertation on "Development and Determination of the Effectiveness of a Multilevel Integrated Training Program in Evidence-Based Practice on teaching and patient care among nurses" has been submitted. (Mrs. Preethy D' Souza)

Two doctoral students have registered to work on "A Statistical Methodology to integrate the findings from the studies of Complex Public Health Interventions". (Mr. Ravishankar.N)

"Application of Bayesian methods in public health systematic reviews". (Ms. Melissa Glenda Lewis)

### 3. Statisticians' Mentoring

This program aims to build-up statistical capacity to support public health systematic review authors. Young statisticians who are interested in methodological development of public health systematic reviews are being identified and trained in association with senior statisticians working in the same field. These trainees get introduced to the Cochrane reviews, statistical editing process and also get an opportunity to join systematic review author team. They are also trained in statistical packages like STATA, RevMan, and SAS.



Research staff of PHESA

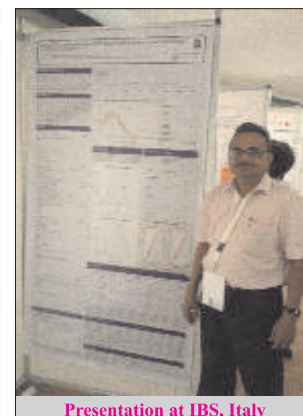
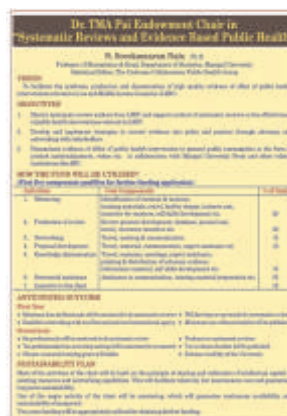
### Publications of PHESA

1. A tool to measure Complexity in Public Health Interventions – Published in Clinical Epidemiology and Global Health.
2. Complexity in Public Health Interventions - Stakeholders' Perspective: A Qualitative Analysis – Accepted for publication in Clinical Epidemiology and Global Health.
3. Role of Systematic Reviews and Meta-analysis in Evidence Based Health Care – Accepted for publication in JCBR, Kamineni Institute of Medical Sciences, Andhra Pradesh.

4. The Network Meta Analysis - New Trend in Health Care Evidence Consolidation: A Review – Submitted to Research Synthesis Methods (RSM-08-2014-0032).
5. Methodological considerations in Network Meta-analysis – Submitted to International Statistical Review (SR-OA-086-14).
6. Measuring and Adjusting Complexity in Public Health Systematic Reviews – Submitted to Statistical Methods in Medical Research.
7. A Tutorial on Meta-regression - In the process of submission
8. Public Health Priorities of South Asia; An overview. Submitted to Avicenna Journal of Medicine (AJM\_174\_14)
9. Policy prescription from systematic review evidence on conditional cash transfer for improving uptake of health interventions in LMIC, submitted to Indian Journal of Social Development.

### PRESENTATIONS AND AWARDS

1. Mrs. Preethy D' Souza was awarded the second best research paper in the "International conference on Inequity in Maternal and Child Health: Situations and Solution", held at Indian Institute of Public Health, Gandhinagar (IIPHG)" from Nov 30 - Dec 1 2013 for the systematic review "Interventions for preventing obesity in children in South Asian region".
2. Dr.N. Sreekumaran Nair has been awarded T.M.A Pai endowment chair for systematic review evidence in public health for the second consecutive year
3. "Development of a Tool to Measure the Complexities in Population, Intervention, Context and Outcome of Public Health Intervention Studies" – Research Paper , presented by Mr. RaviShankar at "Manipal Research Colloquium 2014" held at Manipal University, Manipal on 11<sup>th</sup> and 12<sup>th</sup> April.
4. "Measuring and Adjusting Complexity In Public Health Intervention Systematic Reviews" - Poster presentation by Dr. Sreekumaran Nair. IBS (International Biometric society) conference, Italy.



Presentation at IBS, Italy

## NETWORKING WITH INSTITUTIONS AND ORGANIZATIONS

PHESA in collaboration with Nossal Institute Institute for Global Health, University of Melbourne and Cochrane Public Health Group (CPHG) has been awarded contract by World Health Organization (WHO) for working on five systematic reviews in the domain of “Effective Rehabilitation measures for Non-communicable Diseases related disability”.



### AT THE END OF 1 YEAR PHESA HAS

- 1.4 poster and 8 paper presentations at National and International conferences.
- 2.4 Published papers, 2 Accepted papers, 5 Under review
3. Conducted 6 workshops on systematic review.
4. Conducted mentoring programmes at various organizations of India.

### UPCOMING PHESA ASSOCIATED EVENTS

1. 22<sup>nd</sup> Cochrane colloquium 2014, September 21-25 Hyderabad.
2. Methods Symposium at Cochrane Colloquium, September 21<sup>st</sup> 2014.
3. International conference on “Reducing Burden of Preventable Infections: Opportunities and Challenges for the 21st Century” 15th and 16th October, 2014, Hotel Pride, Ahmedabad, IIPH GandhiNagar.
4. Introductory Workshop on conducting Systematic Reviews, University of Groningen, Netherlands, October 27-29, 2014.
5. Systematic review sensitization workshop, November 22<sup>nd</sup> and 23<sup>rd</sup> 2014, PHESA, Manipal University.
6. Public health evidence South Asia (PHESA) Symposium, February 6-8, 2015, Manipal University.

## VISITORS



**Dr. Mohan, Director, MDRF, Chennai**  
**Dr. Williams, O. Dale, Professor & Chair,**  
**Biostatistics, Robert Stempel college of public health and social work,**  
**Florida**

## PHESA ACTIVITIES IN THE 22<sup>nd</sup> COCHRANE COLLOQUIUM

1. "Handling complexity in reviews - Tools in development", Methods Symposium, 21<sup>st</sup> September 2014.
2. "Bayesian methods for Meta-analysis in Public Health Synthesis", Methods Symposium, 21<sup>st</sup> September 2014.
3. Poster presentation on "A Tool to measure Complexity in Public Health Interventions", 24<sup>th</sup> September 2014 by Mr. Ravishankar. N.
4. Poster presentation on "Complexity in Public Health Interventions - Stakeholders' Perspective: A Quantitative Analysis", 26<sup>th</sup> September 2014 by Ms. Melissa Glenda Lewis.
5. Poster presentation on "Interventions for the control of Childhood Obesity in the South Asian Region; A Systematic Review, 26<sup>th</sup> September 2014 by Dr. Judith Naronha.
6. Prevalence of Obesity and Overweight in South Asian Children: A Systematic Review, 26th September 2014 by Dr. N. Sreekumaran Nair.



**Visit to South Asian Cochrane Network and Centre, Vellore,**  
**Tamil Nadu**



**Dr. Bhumika T.V**  
BDS, MPH (Epidemiology)

## NEW APPOINTMENT TO PHESA

Dr. Bhumika has joined as Research Assistant for Dr. T.M.A. Pai Endowment chair in Systematic Review and Evidence Based Public Health, Manipal University

She is involved in co-ordinating PHESA activities, organizing and training on systematic reviews, co-ordinating with mentors and mentees of systematic reviewers mentoring programme, developing course materials for the training programme, managing internship programme under PHESA etc.

## EDITORIAL BOARD

### Chief editor

**Prof. N. Sreekumaran Nair**

### Editor

**Dr. Bhumika T.V**

### Editorial Members

**Mr. Ravishankar. N**  
**Dr. Mannat Singh**  
**Dr. Shradha Parsekar**

## CALL FOR INTERNSHIP

PHESA proposes to offer internship opportunity on different dynamic projects. Internships in our organization are a great way to learn and enhance your skills in evidence building, communicating, policy framing and getting an experience in various research methods. This will also open up an opportunity to interact and work with international organizations.

### **Prospective candidates:**

Graduate/postgraduate students of any discipline (Allied health, sciences, Medicine, Dentistry, Public Health, Nursing, Biostatistics, Sociology, Economics, Arts, Humanities, Communication, Management, Engineering), who are well-organized, able to complete tasks in a timely and efficient manner, able to work in a team as well as independently and should have professional level of fluency in written and spoken English. Having good analytical skills will be an added advantage.

**Duration of internship:** 1 month, 3 months, 6 months or 1 year

It is an “Ongoing programme”

### **How to apply:**

Interested candidates are requested to email your cv on [ph.cochrane@manipal.edu](mailto:ph.cochrane@manipal.edu). Only selected students will be contacted for the interview

For more details contact: Dr. Bhumika, Email: [meetbhumika123@gmail.com](mailto:meetbhumika123@gmail.com), Ph: +91-9986328261

**PHESA Systematic Review and Meta - analysis workshop,  
November 22-23, 2014, Manipal University,**

**Public Health Systematic Review workshop , February 6<sup>th</sup>, 2015  
PHESA Symposium, February 7 -8, 2015, Manipal University**

### **PHESA CONTACT DETAILS**

**Prof. N. Sreekumaran Nair, Director - PHESA, Department of Statistics, Manipal University, Manipal**  
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