



**ICMR ADVANCED CENTRE  
FOR EVIDENCE BASED CHILD  
HEALTH**

**WORKSHOP**

**“PROTOCOL DEVELOPMENT  
AND REVIEW COMPLETION”**

**USING STATA FOR META-ANALYSIS**

**Nov 5 - 7, 2014**

**VENUE: SCHOOL OF PUBLIC HEALTH**

# LIST OF TUTORS

1. Dr. Meenu Singh, Professor, Department of Pediatrics, PGIMER, Chandigarh
2. Dr. PVM Lakshmi, School of Public Health, PGIMER, Chandigarh
3. Dr. Bhavneet Bharti, Department of Pediatrics, PGIMER, Chandigarh
4. Dr. Venkateshan, Department of Pediatrics, PGIMER, Chandigarh

### **Invited Speakers**

5. Ms. Melissa Lewis, Department of Statistics, Manipal University
6. Mr. Ravishankar, Department of Statistics, Manipal University
7. Mr. Kalesh M K, Department of Statistics, Manipal University

**LIST OF PARTICIPANTS WHO  
HAVE ATTENDED THE WORKSHOP**

## **Participants**

1. Dr. Amit Agarwal
2. Dr. Kiran Kumar
3. Dr. Nishant Jaiswal
4. Dr. Richa Gupta
5. Dr. Shailender Singh Chauhan
6. Mr. Anil Chauhan
7. Dr. Sunil Dhatwalia
8. Dr. Sumita Pattanaik
9. Ms. Swati Sagwal
10. Dr. Jasleen Kaur
11. Dr. Sukhman Singh
12. Dr. Harish Negi
13. Dr. Madhurima Bansal
14. Mr. Avaneesh Kumar
15. Ms. Navjit Kaur
16. Dr. Jasmine Bhogal
17. Dr. Ashok Deep Singh
18. Dr. Suman
19. Dr. Amrita Gill
20. Dr. Sujata
21. Ms. Nandini Paul

# **PROCEEDINGS**

**ICMR ADVANCED CENTRE FOR EVIDENCE BASED CHILD  
HEALTH PGIMER  
DEPARTMENT OF PEDIATRICS  
PROTOCOL DEVELOPMENT AND SYSTEMATIC  
REVIEW COMPLETION WORKSHOP : USING STATA  
FOR META-ANALYSIS  
VENUE: SCHOOL OF PUBLIC HEALTH  
DATE: NOV 5 - 7, 2014**

<b>DAY 1 (Nov 5, Wednesday)</b>		
<b>Time</b>	<b>Topic</b>	<b>Resource Person</b>
09.00 am – 09.30 am	<b>Introduction</b>	
09.30 am – 10.30 am	<b>Introduction to STATA</b> Data entry, import & export data files, saving the output	Ms. Melissa Lewis
10.30 am – 10.45 am	<b>Break</b>	
10.45 am – 11.45 am	<b>Introduction to STATA</b> Recode and compute	Ms. Melissa Lewis
11.45 am – 12.30 noon	<b>Introduction to STATA</b> Finding descriptive statistics	Mr. Ravishankar
12.30 noon – 01.00 pm	<b>Practical</b> Confidence intervals	Mr. Ravishankar
01.00 pm – 02.00 pm	<b>Lunch Break</b>	
02.00 pm – 2.45 pm	<b>Parametric tests</b> Independent samples t test, ANOVA, paired t test	Mr. Kalesh M K
02.45 pm – 03.30 pm	<b>Non-parametric tests</b> Mann Whitney U test, Kruskal Wallis test, Wilcoxin sign rank test	Mr. Kalesh M K
03.30 pm – 03.45 pm	<b>Break</b>	
03.45 pm – 04.45 pm	<b>Correlation and Regression</b>	Mr. Ravishankar

04.45 - 05.00pm	Revision	
-----------------	----------	--

<b>DAY 2 (Nov 6, Thursday)</b>		
<b>Time</b>	<b>Topic</b>	<b>Resource Person</b>
08.45 – 09.15 am	Recap	
09.15 – 10.00 am	Chi-square test and odds ratio	Ms. Melissa Lewis/ Dr. PVM Lakshmi
10.00 - 10.45 am	Logistic Regression	Mr. Kalesh M K
10.45 – 11.00 am	Break	
11.00 – 11.45 am	ROC curve	Mr. Kalesh M K
11.45 – 1.00 pm	Diagrams, Graphs and Tables	Mr. Ravishankar
01.00 – 02.00 pm	Lunch break	
02.00 – 02.45 pm	Introduction to Meta-analysis	Mr. Ravishankar
02.45 – 03.30 pm	Meta-analysis of dichotomous outcomes	Mr. Kalesh M K
03.30 – 03.45 pm	Break	
03.45 – 04.30 pm	Meta-analysis of dichotomous outcomes (continued)	Ms. Melissa Lewis
04.30 – 05.00 pm	Revision	



**DAY 3 (Nov 7, Friday)**

<b>Time</b>	<b>Topic</b>	<b>Resource Person</b>
08.45 – 09.15 am	<b>Recap</b>	
09.15 – 09.45 am	<b>Heterogeneity and Publication bias Funnel plot, Egger plot, L'abbe plot</b>	Mr. Ravishankar
09.45 – 10.30 am	<b>Meta-analysis of Continuous outcomes</b>	Mr. Kalesh M K
10.30 – 10.45 am	<b>Break</b>	
10.45 – 11.15 am	<b>Meta-analysis when only effect measures are given</b>	Mr. Ravishankar
11.15 – 11.45 am	<b>Meta-analysis of prevalence studies</b>	Ms. Melissa Lewis
11.45 – 12.30 pm	<b>Subgroup analysis</b>	Ms. Melissa Lewis
12.30 – 01.15 pm	<b>Meta-regression</b>	Mr. Ravishankar
01.15 – 02.30 pm	<b>Lunch break</b>	
02.30 – 04.00 pm	<b>Revision</b>	
04.00 – 04.15 pm	<b>Break</b>	
04.15 – 05.00	<b>Valedictory and feedback</b>	

The faculty was come from Manipal University for this workshop. On the first day i.e. 5<sup>th</sup> November Dr. Meenu Singh took introductory session with participants then Ms. Melissa Lewis took the session on Introduction to STATA. She took a lecturer regarding Data entry, import & export data files, saving the output in STATA software. After this session she discussed about recoding and computing. After this basic session Mr. Ravishankar taught about the descriptive statistics part of STATA. He also took the practical session on how to calculate confidence Interval.

Mr. Kalesh M K took the session on parametric tests (Independent samples t test, ANOVA, paired t test) and nonparametric tests (Non-parametric tests Mann Whitney U test, Kruskal Wallis test, Wilcoxin sign rank test) with hands on practice.

In the last session Mr. Ravishankar discussed about how to do Correlation and Regression in STATA.



**Mr. Ravishankar taking a lecture on descriptive statistics in STATA.**



**Mr. Kalesh M K during his session on parametric tests**

On the second day i.e. 6<sup>th</sup> November Ms. Melissa Lewis/ Dr. PVM Lakshmi took session on Chi-square test and odds ratio in STATA. Mr. Kalesh M K demonstrated practically on Logistic Regression and ROC curve in STATA.

After this Mr. Ravishankar discussed on how to do Diagrams, Graphs and Tables by using STATA. He also introduces Meta-analysis and meta-analysis of dichotomous outcomes. Mr. Kalesh M K and Ms. Melissa Lewis also show how to use STATA for Meta-analysis of dichotomous and various outcomes.



**Dr. PVM Lakshmi delivering a lecture on Chi-square test**





**Interactive session between faculty and participants.**



**Mr Ravishankar during his lecture on How to do Meta-Analysis in STATA?**

On the last day of the workshop i.e. 7<sup>th</sup> November Mr. Ravishankar demonstrated on Heterogeneity and Publication bias like Funnel plot, Egger plot, L'abbe plot. Mr. Kalesh M K discussed about Meta-analysis of Continuous outcomes and Mr. Ravishankar discussed about the Meta-analysis when only effect measures are given. Ms. Melissa Lewis showed how to do Meta-analysis of prevalence studies and Subgroup analysis by using STATA. In the last session Mr. Ravishankar demonstrated practically on Meta-regression.

Finally we facilitated the faculty in valedictory ceremony.







**Mr. Ravishankar during his lecture on Meta Regression in STATA.**



**Dr. Bhavneet Bharti facilitating faculty during the valedictory ceremony.**



**Dr. Venkatesheshan facilitate faculty during the valedictory.**





**The Group Photograph**