Building operational research capacity in low- and middle-income countries

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World Health Organization

TDR For research on diseases of poverty
UNICEF • UNDP • World Bank • WHO

International Union Against Tuberculosis and Lung Disease

MEDECINS SANS FRONTIERES

LuxOR
Luxembourg Operational Research

Previous OR training models

- Class of 15 – 20 people
- One – two week course on methods / data
- Participants return to countries / stations
  But…very few publish

- **Why??** –
  no writing skills, no time, no mentorship

International TB Course: 2001 - 2007

- **28** participants developed ORP
- **11** started OR when home
- **7** collected and analysed data
- **1** wrote a paper
- **0** published a paper

INT J TUBERC LUNG DIS 14(3):371–373

SHORT COMMUNICATION

Evaluation of an international training course to build programmatic capacity for tuberculosis control

A. Ohkado,* E. Pevzner,† T. Sugiyama,‡ K. Murakami,‡ N. Yamada,‡ S. Cavanaugh,† N. Ishikawa,§ A. D. Harries¶#

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SUMMARY

We evaluated the international training course of the Research Institute of Tuberculosis, Kiyose, Japan, by e-mailing structured questionnaires to participants who attended the course from 2001 to 2007. Of 62 responding participants, 34 developed action plan projects (APPs) and 28 developed operations research projects (ORPs). Among respondents drafting APPs, 27 (79%) started implementing projects, and 24 (88%) completed over half of their planned activities. Among respondents drafting ORPs, 11 (39%) started projects but no scientific papers were published. The main reasons for the failure to implement ORPs were due to lack of time, funds, and disapproval by supervisors. A sequential training model may better address barriers to teaching and assisting ORPs.

KEY WORDS: evaluation; international training; operations research; electronic mail; tuberculosis

Ohkado et al, IJTLD 2010, 14: 371-3

SORT IT Course

Purpose: To teach the practical skills for conducting and publishing operational research

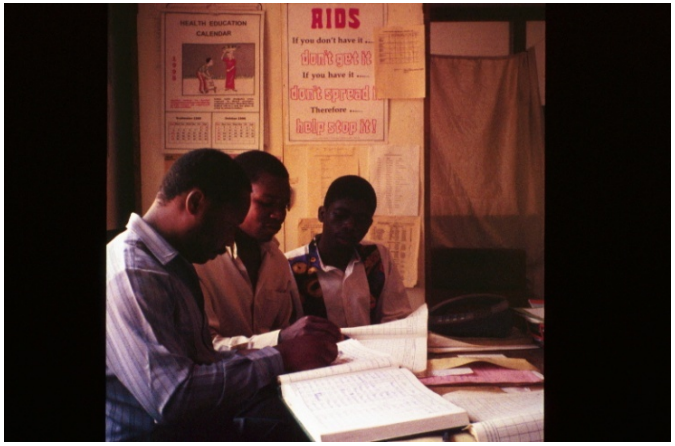
Approach: "combines training with implementation"

- Product –oriented [a submitted research paper]
- Modular approach [3 modules over 10-12 months]
- Milestones must be achieved to stay in course
- Targets must be achieved to keep the brand

Research questions focus on routine data collected within public health systems or by NGOs

“Our country is data rich but information poor”

Minister of Health, Fiji



Target Audience

- Applicants should be implementers (doctors, nurses, paramedical officers, data analysts, M&E officers)

- No more than 12 participants in total per course. All three modules to be completed and these are funded through Union-MSF

To be a successful applicant:

- Defined criteria:-
  - Engaged in **programme work** and will return to this work
  - **Supervisors endorsement** -time and opportunity for research
  - Competent in **English** and computer literate
  - Have done **MPH or equivalent** or come strongly recommended
  - There is a stated and acceptable **mentor** at country level
  - **Funding** for the research can be acquired through other sources

- Application:-
  - Submit curriculum vitae plus two references
  - Complete application form with1/2 page written on programme problem and research question

Applications to recent Courses:

- **March 2014 African course:** 96
- **March 2014 Asian course:** 97
- **July 2014 Paris course:** 159

THE COURSE:

Module 1: [6 days]
Research Protocol

Module 2: [6 days]
Data and analysis

milestone 1 →

milestone 2 →

milestone 3 →

Module 3: [6 days]
The Paper

milestone 4 →

Milestones for the course

- Milestone 1: Submission of protocol and Union EAG form within three weeks of completing Module 1
- Milestone 2: Submission of EpiData documentation sheet within two weeks of completing Module 2
- Milestone 3: Submission of proof of study completion and data collection about 6 weeks before Module 3
- Milestone 4: Submission of paper to peer-reviewed journal within 4 weeks of end of Module 3

TEACHING FORMAT

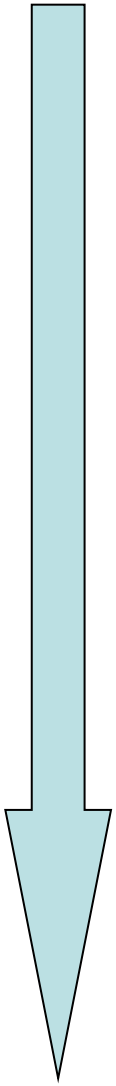
Lectures and discussion

Plenary presentations from participants

Hands-on mentorship from Module 1 to Paper-in-Press

MENTORS

Protocol design



Published paper

Module 1 and 3

8 mentors
12 participants

4 mentor pairings: senior / junior

Each pair with three participants

Module 2

4 mentors: each mentor with three participants

Modus operandi:

Hands-on in modules

Develop versions

Support between modules

Mentors are co-authors

Mentors:

Part of Union – MSF faculty

Flight / hotel / perdiems

Institutions credited with outputs

SORT IT

Improving health systems through research

Structured Operational Research and Training Initiative

CERTIFICATE OF COMPLETION

This is to certify that

Philip Owiti

has successfully completed the

INTEGRATED OPERATIONAL RESEARCH AND TRAINING PROGRAMME
Paris, FRANCE

Module 1: 9 – 13 July 2012
Research question and protocol development

Module 2: 16 – 20 July 2012
Efficient, quality-assured data capture and analysis

Module 3: 3 – 7 June 2013
Writing a paper for publication

Prof Anthony D. Harries
Director, Department of Research
The Union

Dr Ajay Kumar
Technical Officer (Research)
The Union

Dr Anthony Reid
Medical Editor
Médecins Sans Frontières

International Union Against Tuberculosis and Lung Disease
Health solutions for the poor

World Health Organization

TDR For research on diseases of poverty
UNICEF • UNDP • World Bank • WHO

MEDECINS SANS FRONTIERES

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Targets to be achieved: 80-80-80-80

Indicator	Target
Aggregate participants score for each module	80%
Participants complete all course milestones	80%
Papers published ≤18 months of submission	80%
Papers assessed for effects on policy and practice ≤18 months of submission	80%

Does the Model work?

First Paris Course: 2009-2010

Aug 2009: 12 participants from Africa and Asia developed research protocol

April 2010: 11 participants submitted ***14 papers*** to international journals

Dec 2013: ***14 papers*** accepted for publication

Second Course: 2010 - 2011

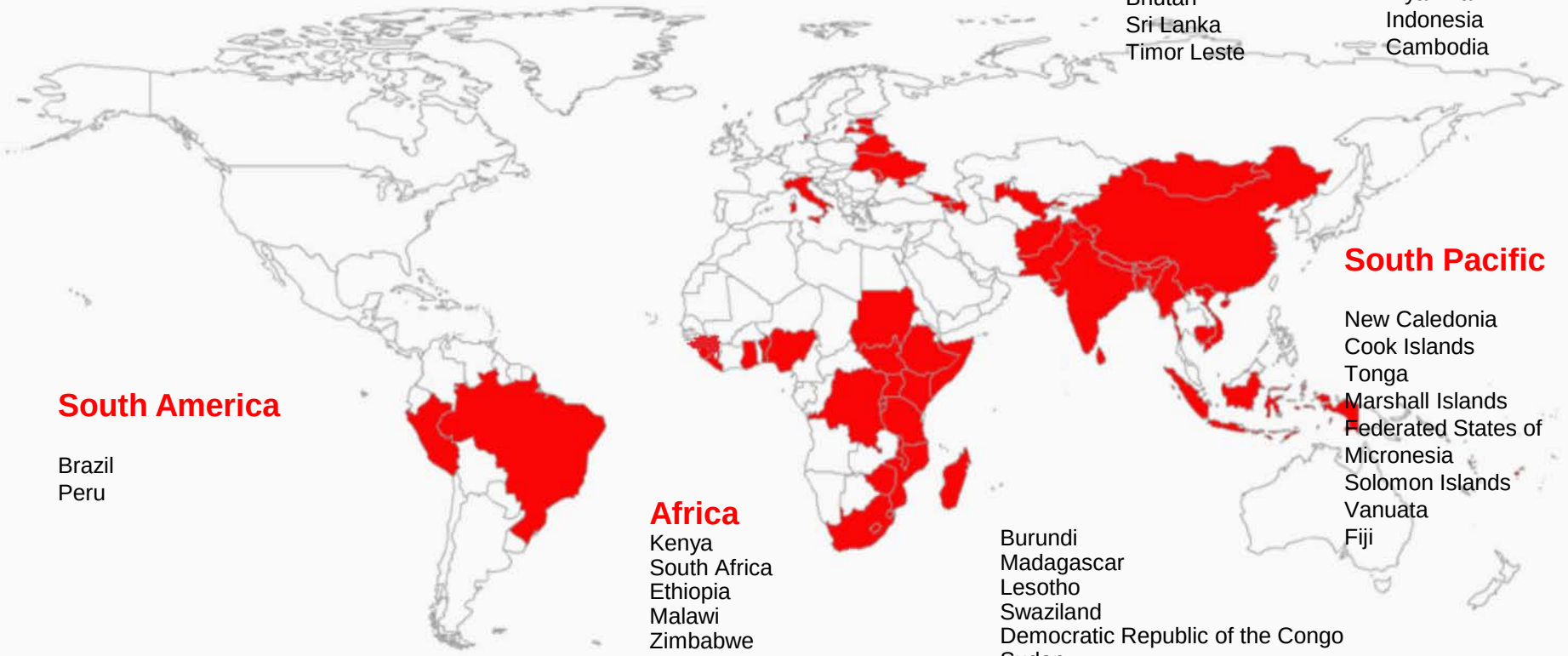
3 participants from first OR Course facilitated on second OR Course

Research Training Courses and participants: Aug 2009 – May 2014

Research Course	No. of courses	Participants enrolled
Paris Union-MSF	4	47
Luxembourg MSF-Union	3	36
India (PHFI & Chennai)	3	34
South Pacific-Union	3	36
Nepal-Regional Asian	3	36
Ethiopia-Regional African	3	36
Estonia: Eastern Europe	1	11
TOTAL	**20**	**236**

All Union – MSF "SORT IT" Operational Research Courses

TOTAL: 20 courses with 236 participants enrolled from 61 countries



Europe

Georgia
Ukraine
Estonia
Latvia
Belorussia

Moldova
Armenia
Azerbaijan
Denmark
Italy

Asia

India
Bangladesh
Pakistan
Afghanistan
Nepal
Bhutan
Sri Lanka
Timor Leste

Singapore
China
Mongolia
Uzbekistan
Vietnam
Myanmar
Indonesia
Cambodia

South Pacific

New Caledonia
Cook Islands
Tonga
Marshall Islands
Federated States of Micronesia
Solomon Islands
Vanuata
Fiji

South America

Brazil
Peru

Africa

Kenya
South Africa
Ethiopia
Malawi
Zimbabwe
Benin
Somaliland
Rwanda
Uganda
Ghana
Tanzania
Guinea

Burundi
Madagascar
Lesotho
Swaziland
Democratic Republic of the Congo
Sudan
Mozambique
Nigeria
Somalia
Somaliland
Sierra Leone
Liberia

Research Projects undertaken in 20 courses

Research Project Subject	Number
Tuberculosis / HIV-TB / Diabetes-TB	144
HIV/AIDS	30
Maternal and Child Health	13
Malaria and NTDs	12
Malnutrition	5
Other [smoking, NCD, Cancer]	42
TOTAL	**246**

Outputs from 16 completed OR courses: by May 1st, 2014

Participants starting the course	188
Participants finishing the course with all milestones completed	**169 (90%)**
Scientific papers submitted to peer-reviewed journals	202
Papers published or in press	**151 (75%)**

BMC Infectious Diseases

Identification of losses to follow-up in a community-based antiretroviral therapy clinic in South Africa using a computerized pharmacy tracking system

BMC Infectious Diseases 2010, 10:329 doi:10.1186/1471-2334-10-329

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Public Health Action

International Union Against Tuberculosis and Lung Disease
Health solutions for the poor

VOL 1 NO 1 PUBLISHED 21 SEPTEMBER 2011

Is transcription of data on antiretroviral treatment from electronic to paper-based registers reliable in Malawi?

O. J. Gadabu,[1] C. V. Munthali,[1] R. Zachariah,[2] S. Gudmund-Hinderaker,[2,3] A. Jahn,[4] H. Twea,[5,6] A. Gondwe,[1] S. Mumba,[1] M. Lungu,[7] K. Malisita,[7] E. Mhango,[4] S. D. Makombe,[4] L. Tenthani,[4] L. Mwalwanda,[8] C. Moyo,[9] G. P. Douglas,[10] Z. L. Lewis,[10] F. Chimbwandira[4]

Transactions of the Royal Society of Tropical Medicine and Hygiene 105 (2011) 52–57

Contents lists available at ScienceDirect

Transactions of the Royal Society of Tropical Medicine and Hygiene

journal homepage: http://www.elsevier.com/locate/trstmh

ELSEVIER

Lost to follow up from tuberculosis treatment in an urban informal settlement (Kibera), Nairobi, Kenya: what are the rates and determinants?

Kibango Walter Kizito[a,*], Sophie Dunkley[a], Magdalene Kingori[b], Tony Reid[c]

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[c] *Médecins Sans Frontières - Operational Centre Belgium, Operational Research Department, Duprèstraat 94, 1090 Brussels, Belgium*

OPEN ACCESS Freely available online

PLoS one

Characteristics and Programme-Defined Treatment Outcomes among Childhood Tuberculosis (TB) Patients under the National TB Programme in Delhi

Srinath Satyanarayana[1,2]*, Roopa Shivashankar[3], Ram Pal Vashist[4], Lakhbir Singh Chauhan[5], Sarabjit Singh Chadha[6], Puneet Kumar Dewan[6], Fraser Wares[6], Suvanand Sahu[6], Varinder Singh[7], Nevin Charles Wilson[2], Anthony David Harries[1]

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Tropical Medicine and International Health doi:10.1111/j.1365-3156.2010.02509.x

VOLUME 15 SUPPL. 1 PP 82–89 JUNE 2010

Early active follow-up of patients on antiretroviral therapy (ART) who are lost to follow-up: the 'Back-to-Care' project in Lilongwe, Malawi

Hannock Tweya[1,2], Dickman Gareta[2], Fredrick Chagwera[2], Anne Ben-Smith[3], Justin Mwenyemasi[2], Fred Chiputula[2], Matthew Boxshall[2], Ralf Weigel[2,4], Andreas Jahn[4,5], Mina Hosseinipour[6] and Sam Phiri[2]

1 *The International Union Against Tuberculosis and Lung Disease, Paris, France*
2 *The Lighthouse Trust, Lilongwe, Malawi*
3 *Maame Akua, Lilongwe, Malawi*
4 *Ministry of Health, Lilongwe, Malawi*
5 *I-TECH Lilongwe, Malawi/Seattle*
6 *University of North Carolina-Lilongwe, Malawi*

INT J TUBERC LUNG DIS 15(1):137–139

SHORT COMMUNICATION

Performance of culture and drug susceptibility testing in pulmonary tuberculosis patients in northern China

W. Qi,* A. D. Harries,†‡ S. G. Hinderaker†§

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Preferences for publication:

Open Access Journals:

- ***PLOS One; PLOS Medicine***
- ***BMC Public Health; BMC Medicine; BMC Health Services; BMC Infectious Diseases***
- ***Public Health Action (PHA)***

Why an emphasis on papers

- Quality control standard
- International Guidelines evidence based
- Critical way to disseminate knowledge
- Paper writing makes authors “experts”
- Credibility

Ancient Roman Proverb

“Scripta manent, verba volant”

“Spoken words fly away
Written words remain”

“If you do not write about it, it did not happen”
Virginia Woolf

BUT……

- Importantly we go beyond Papers to influence policy and practice

Is operational research delivering the goods? The journey to success in low-income countries

Rony Zachariah, Nathan Ford, Dermot Maher, Karen Bissell, Rafael Van den Bergh, Wilma van den Boogaard, Tony Reid, Kenneth G Castro, Bertrand Draguez, Johan von Schreeb, Jeremiah Chakaya, Rifat Atun, Christian Lienhart, Don A Enarson, Anthony D Harries

Operational research in low-income countries has a key role in filling the gap between what we know from research and what we do with that knowledge—the so-called know–do gap, or implementation gap. Planned research that does not tangibly affect policies and practices is ineffective and wasteful, especially in settings where resources are scarce and disease burden is high. Clear parameters are urgently needed to measure and judge the success of operational research. We define operational research and its relation with policy and practice, identify why operational research might fail to affect policy and practice, and offer possible solutions to address these shortcomings. We also propose measures of success for operational research. Adoption and use of these measures could help to ensure that operational research better changes policy and practice and improves health-care delivery and disease programmes.

Published Online
February 9, 2012
DOI:10.1016/S1473-3099(11)70309-7

Operational Centre Brussels, Medical Department, Médecins Sans Frontières, Luxembourg, Luxembourg (R Zachariah PhD, R Van den Bergh PhD, W van den Boogaard MPH,

Use of pharmacy records for determining retention on ART in South Africa and Malawi

100 years of smoking and population-attributable deaths in India

Screening Tuberculosis patients for diabetes mellitus in India

Using Telemedicine to reduce childhood deaths in Somalia

Caring for victims of sexual violence in Liberia and Kenya

Reducing maternal mortality through emergency obstetric services in Burundi

Outputs from the first 8 courses

[80-80-80-80 targets]

Indicators	No	Outputs	No	%
Modules assessed	24	**Modules scoring ≥ 80%**	24	**100%**
Participants enrolled	93	**Participants completing course**	83	**89%**
Papers submitted	96	**Papers published ≤ 18 months**	89	**93%**
Papers published	89	**Assessed for policy & practice**	88	**99%**

Outputs from the first 8 courses

88 papers assessed for policy and practice
65 **(73%)** made a difference

Change in programme implementation	N=27
Adaptation of monitoring tools	N=24
Change in existing guidelines	N=20

Some papers had more than one effect on policy and practice

Data are self-reported through a questionnaire

Costs per published paper

[total cost of 8 courses including open access publication = 603,000 Euro]

89 published papers at **6,800 Euro per paper**

EU-funded papers [PubMed]: cost per paper = **224,769 Euro**

Source: Galsworthy et al, Academic output of 9 years of EU investment into health research. Lancet 2012; 380: 971-2

Operational Research Alumni Network

Web-based organization

Annual email follow-up

Track how alumni are doing

Alumni to assist with facilitation / mentoring

Alumni to assist with OR paper reviews

Alumni to become Professors of OR!

Bissell K et al. Operational research training: the course and beyond. Public Health Action 2012; 2: 92-97

Guillerm N et al. What happens after participants complete a SORT IT Course? Public Health Action 2014, in press

Beyond the course….

Participants returning questionnaire	**76**
Completed research projects after the course	47 (62%)
Published papers after the course	38 (50%)
Facilitated at further operational research courses	33 (43%)

83 successful participants completed the course: 76 (92%) returned questionnaire

Conclusion about Training

- This is target-orientated training
- Products = **Papers** and **Influence on policy and practice**
- Long term vision = capacity building and development of **leadership** in operational research in LIC and MIC