OCCUPATIONAL HEALTH IN THE EBOLA OUTBREAK

Melissa A. McDiarmid, M.D., M.P.H.
Professor of Medicine and Epidemiology and Public Health
Director, Division of Occupational and Environmental Medicine, and
Director, University of Maryland WHO Collaborating Center for Occupational Health
Braving EBOLA: Portraits of those who labor and those who survived at an Ebola treatment center in rural Liberia.
On the Frontlines: Where Health Care Workers Have Contracted Ebola
Current Ebola Outbreak: October 15, 2014

GUINEA
Cases: 73  Deaths: 38

SIERRA LEONE
Cases: 129  Deaths: 95

LIBERIA
Cases: 188  Deaths: 94

UNITED STATES
Cases: 2  Deaths: 0

SPAIN
Cases: 1  Deaths: 0

NIGERIA
Cases: 11  Deaths: 5

8,400 Cases of Ebola in the General Population
404 Cases of Ebola in Health Care Workers
4,033 Deaths from Ebola in the General Population
232 Deaths from Ebola in Health Care Workers


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“The infections and deaths of health-care workers have three major consequences. 

**First**, they diminish one of the most important assets for the response to any outbreak.

**Second**, they can lead to the closure of hospitals and isolation wards, especially when staff refuse to come to work.

**Third**, they drive fear, already very high, to new extremes.”

Margaret Chen, WHO Director-General
Ebola Is Coming. A Travel Ban Won't Stop Outbreaks
Other Workers on the Frontline
Figure 2
Transmission tree of the Ebola virus disease outbreak in Nigeria, July–September 2014

**TABLE. Characteristics of 11 health-care workers who had symptoms of severe acute respiratory syndrome (SARS) following exposure to the index patient during the time of his intubation — Toronto, Canada, April 15–21, 2003**

<table>
<thead>
<tr>
<th>Health-care worker</th>
<th>Symptom onset date</th>
<th>Suspect or probable SARS case</th>
<th>Occupation</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>April 15</td>
<td>Suspect</td>
<td>Respiratory therapist</td>
<td>Provided care before, during, and after intubation in ICU*</td>
</tr>
<tr>
<td>2</td>
<td>April 16</td>
<td>Suspect</td>
<td>ICU nurse assigned primarily to another patient</td>
<td>Provided care before, during, and after intubation in ICU</td>
</tr>
<tr>
<td>3</td>
<td>April 16</td>
<td>Suspect</td>
<td>ICU primary nurse</td>
<td>Provided care before, during, and after intubation in ICU</td>
</tr>
<tr>
<td>4</td>
<td>April 16</td>
<td>Suspect</td>
<td>Respiratory therapist</td>
<td>Provided care before, during, and after intubation in ICU</td>
</tr>
<tr>
<td>5</td>
<td>April 16</td>
<td>Probable</td>
<td>Ward physician</td>
<td>Examined patient on ward during morning of April 13</td>
</tr>
<tr>
<td>6</td>
<td>April 17</td>
<td>Probable</td>
<td>ICU physician</td>
<td>Provided care before, during, and after intubation in ICU</td>
</tr>
<tr>
<td>7</td>
<td>April 17</td>
<td>Suspect</td>
<td>ICU charge nurse</td>
<td>Provided care before, during, and after intubation in ICU</td>
</tr>
<tr>
<td>8</td>
<td>April 18</td>
<td>Suspect</td>
<td>ICU physician</td>
<td>Examined patient on ward during early morning of April 13</td>
</tr>
<tr>
<td>9</td>
<td>April 18</td>
<td>Suspect</td>
<td>Radiology technician</td>
<td>Performed chest radiograph of patient on ward during early morning of April 13</td>
</tr>
<tr>
<td>10</td>
<td>April 18</td>
<td>Not a case†</td>
<td>ICU nurse assigned primarily to another patient</td>
<td>Provided care after intubation in ICU</td>
</tr>
<tr>
<td>11</td>
<td>April 21</td>
<td>Not a case‡</td>
<td>ICU physician</td>
<td>Provided care before intubation in ICU</td>
</tr>
</tbody>
</table>

*i* Intensive care unit.

† Illness marked by headache, cough, and diarrhea but without fever.

‡ Illness marked by cough and infiltrate on chest radiograph but without fever.
HCW TB Risk in LMI Countries

Tuberculosis among Health-Care Workers in Low- and Middle-Income Countries: A Systematic Review

How common is TB in HCW (any higher than the community)?

Summary of systematic reviews

Risk of TB infection and disease is high among HCWs in low- to middle-income countries.

- Much higher than general population
- Particularly high in certain jobs (e.g. nursing) and locations (e.g. medical wards)
- Limited evidence on which TBIC interventions work in low-middle income countries

<table>
<thead>
<tr>
<th>Epidemiological measure</th>
<th>Estimates from low-middle income countries</th>
<th>Estimates from high income countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence of TB infection</td>
<td>Median 63% (33% to 75%)</td>
<td>Median 24% (4% to 48%)</td>
</tr>
<tr>
<td>Incidence of TB infection</td>
<td>Median 5.3% (0.5% to 14.3%)</td>
<td>Median 1% (0.2% to 12%)</td>
</tr>
<tr>
<td>Incidence of TB disease in HCWs per 100,000 per year</td>
<td>69 to 5780</td>
<td>2 to 25</td>
</tr>
</tbody>
</table>

Nurses working with TB patients dying

AT LEAST 30 nurses are dying every day of tuberculosis in as a result of poor infection control measures at health centres, according to the Treatment Action Campaign (TAC) and the TB/HIV Care Association.

Sipokazi Maposa and Bronwynne Jooste: The Cape Argus
WHO Health System Strengthening Campaign

“Losing its workforce can bring a fragile health system close to collapse”

“One pillar of the WHO Health System Strengthening Campaign is Health Workers”
NEW Joint WHO-ILO-UNAIDS policy guidelines for improving health worker access to HIV and TB prevention, treatment, care and support

13 January 2011

Susan Wilburn, WHO; Lee-Nah Hsu and Julia Lear, ILO

“Health System Strengthening in the Gambia”

Melissa A. McDiarmid, MD, MPH, DABT, Professor of Medicine
Allisha Ellis, MSW
University of Maryland School of Law Student
June 1-16, 2014
University of Maryland
WHO Collaborating Center Activities
University of Maryland Contributions to WHO Ebola Response

MANUAL
FOR PROTECTING OCCUPATIONAL HEALTH AND SAFETY OF HEALTH WORKERS, EMERGENCY RESPONDERS AND OTHER STAFF IN OUTBREAKS OF EBOLA AND MARBURG VIRUS DISEASE
INTERIM VERSION 1

Geneva, November 2014

Values and Preferences of Health Workers’ Personal Protective Equipment (PPE) Use:
A Summary of the Evidence

Prepared by:
University of Maryland, School of Medicine
Division of Occupational and Environmental Medicine
WHO Collaborating Centre in Occupational Health
Figure 1: HIERARCHY OF WORKPLACE HAZARD CONTROLS

Ideal Setting
Where sufficient resources allow

In Low Resource Setting
Where engineering controls may be absent, additional emphasis is placed on Administrative Controls & Work Practices

From: McDiarmid, MA, Annals of Global Health DOI: (10.1016/j.aogh.2014.08.001), In Press
Figure 1. Reason’s Swiss Cheese Model of a System

Systems (Organizational) Thinking

Sculli & Hemphill, VHA National Center for Patient Safety
Occupational Safety and Health Plan for Ebola Response

• Context of “Just Culture” in an Organizational System of Safety
• Comprehensive Safety and Health Plan
• Designated Safety Officer – assigned responsibilities
• Social Protections
  – Unsafe work
  – Quarantine – balance of rights and responsibilities
  – Wages and benefits protected
  – Psycho-Social support
“Safety and health at work is not an option; it’s a basic human right.”

Guy Rider, International Labour Organization Director-General