The Renal Disaster Relief Task Force of the International Society of Nephrology (RDRTF/ISN)

Also for

*Médecins Sans Frontières* (MSF)

R Vanholder, Ghent, Belgium
MSS Sever, Istanbul, Turkey
N Lameire, Ghent, Belgium
MEDICAL PROGRESS

Management of Crush-Related Injuries after Disasters

Mehmet Sukru Sever, M.D., Raymond Vanholder, M.D., Ph.D., and Norbert Lameire, M.D., Ph.D.
DISASTER

Sudden calamities producing extensive damage, loss and distress

Natural
- Earthquakes
- Landslides
- Avalanches
- Hurricanes
- Tornadoes

Man-made
- War
- Mining
- Tunnel collapse
- Terrorism, torture
GLOBAL SEISMIC HAZARD MAP

- Californian fault
- The whole Mediterranean
- South-East Asia
- The Far-East
- Tehran

Heightened Odds of Large Earthquakes Near Istanbul: An Interaction-Based Probability Calculation

Tom Parsons,¹* Shinji Toda,² Ross S. Stein,¹ Aykut Barka,³ James H. Dieterich¹

Science, 288: 661-5; 2000
FOLLOWING DISASTERS:

CRUSH SYNDROME

the second most frequent cause of death (following direct trauma) Ukai, Ren Fail, 1997

RENAL DISASTER

Solez et al, KI; 1993
THE ARMENIAN EARTHQUAKE

• Death toll: 25,000 ?
• Crush cases: 600 ?
• Many crush pts. died due to lack of dialysis

Help not effective

Need for preplanned logistic organization

RENAL DISASTER RELIEF TASK FORCE

Solez et al, KI; 1993
RENAL DISASTER RELIEF TASK FORCE (RDRTF): AIMS

- To offer material and personnel support in any mass disaster where renal problems are prevalent
- The RDRTF has lists of volunteers (nephrologists/intensivists, nurses, technicians)
- The RDRTF has a stock of hardware (dialysis machines, RO-systems) to be dispatched in case of disasters
MAJOR LOGISTIC STEPS FOLLOWING AN EARTHQUAKE

GLOBAL COORDINATION (A)

US Geological services – earthquake detection

Chairman RDRTF

Initial estimation of number of crush syndrome victims

Advance scouting nephrologic team

LOCAL COORDINATION (B)

Local key person

Reporting local conditions / assessing magnitude of the problem

Anticipation of the needs for support (i.e. medications, blood products)

Inform RDRTF Branch Chairman (international support) Inform local authorities (national support)

Support is offered, if needed

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THREE BRANCHES

- **Global branch**
  - R Vanholder
  - C Bergen
  - E Hoste

- **South-East Asian Branch**
  - V Jha
  - M Jose

- **Latin-American Branch**
  - A Hurtado
RELATIONSHIP WITH MSF

- It is merely impossible to do major nephrologic intervention without being “embedded” in a large experienced logistic organization
- Our relationship with MSF goes far beyond logistics
  - They have active groups in many countries which can quickly collect information
  - They have connections with local governments but also with other organizations
  - They have high experience with water purification
  - They have a broad network of primary care support
  - They support on ancillary aspects that may be time consuming (e.g. contact with press)
FINANCES

- The large costs (travel, stay, transport, purchase of material) all are covered by MSF.
- In addition, we have a budget from ISN (15,000 $) for:
  - Day to day management costs
  - Basic costs for intervention not covered by MSF (e.g. taxi to the airport, telephone costs)
  - Costs for steering committee meetings
- Budget is spent ad hoc, i.e.:
  - If the money is not spent at the end of the year, it is not transferred to the next year
  - If in a year with several interventions, the budget is exceeded, the sum to reimburse is adapted
NOT EVERY DISASTER IS THE SAME
# Ratio Dialyzed/Deaths (x 1,000)

<table>
<thead>
<tr>
<th>Location</th>
<th>Country</th>
<th>Year</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spitak</td>
<td>Armenia</td>
<td>1988</td>
<td>9.0-15.4</td>
</tr>
<tr>
<td>Northern Iran</td>
<td>Iran</td>
<td>1990</td>
<td>3.9</td>
</tr>
<tr>
<td>Kobe</td>
<td>Japan</td>
<td>1995</td>
<td>24.6</td>
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<tr>
<td>Marmara</td>
<td>Turkey</td>
<td>1999</td>
<td>28.1</td>
</tr>
<tr>
<td>Chi-Chi</td>
<td>Taiwan</td>
<td>1999</td>
<td>13.3</td>
</tr>
<tr>
<td>Gujarat</td>
<td>India</td>
<td>2001</td>
<td>1.7</td>
</tr>
<tr>
<td>Boumerdes</td>
<td>Algeria</td>
<td>2003</td>
<td>6.6</td>
</tr>
<tr>
<td>Bam</td>
<td>Iran</td>
<td>2003</td>
<td>3.7</td>
</tr>
<tr>
<td>Kashmir</td>
<td>Pakistan</td>
<td>2005</td>
<td>2.4</td>
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<tr>
<td>Yogyakarta</td>
<td>Indonesia</td>
<td>2006</td>
<td>1.2</td>
</tr>
<tr>
<td>Chengdu</td>
<td>China</td>
<td>2008</td>
<td>1.9</td>
</tr>
<tr>
<td>L'Aquila</td>
<td>Italy</td>
<td>2009</td>
<td>30.2</td>
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<tr>
<td>Padang</td>
<td>Indonesia</td>
<td>2009</td>
<td>0.0</td>
</tr>
<tr>
<td>Port-au-Prince</td>
<td>Haiti</td>
<td>2010</td>
<td>0.1</td>
</tr>
<tr>
<td>Maule</td>
<td>Chile</td>
<td>2010</td>
<td>3.9</td>
</tr>
</tbody>
</table>
NOT EVERY DISASTER IS THE SAME

Some selections from recent events

Haiti 2010
- Huge intervention, huge costs: 25 volunteers for 25 dialyzed
- Very primitive circumstances
- Learned a lot (Istat, how to start a dialysis unit from scratch)

Misrata, Libya and Abidjan, Ivory Coast
- Local nephrologists out of material: material support

Sendai, Japan and Van (Ercis), Turkey
- Local nephrologists experienced enough

Tripoli and Sirte, Lybia
- False alarm, mismanagement disguised as request for help

Bangkok, Thailand
- Ran out of specific material, only advice
RENAL DISASTER RELIEF TASK FORCE
INTERVENTION – MARMARA EARTHQUAKE
AUGUST 18 – SEPTEMBER 17, 1999
BAM (IRAN): DECEMBER 2003
KASHMIR (PAKISTAN): 8 OCTOBER 2005
Renal failure during earthquakes
European mortality gradients
Low vitamin D levels in early CKD
Reference list (1)

- Vanholder et al, Nephrol Dial Transplant, 2000; 15:1517-1521
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Reference list (2)

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- Vanholder et al, Nephrol Dial Transplant, 2009; 24:3251-3255
- Vanholder et al, Kidney Int, 2009; 76:687-689
- Vanholder et al, Lancet, 2010; 375:1162-1163
- Sever et al, Nephrol Dial Transplant, 2011; 26:515-524
- Vanholder et al, Nephron Clin Pract, 2011; 117:C184-C197
RECOMMENDATIONS ON TREATMENT OF CRUSH VICTIMS FOLLOWING MASS DISASTERS
RECOMMENDATIONS FOR THE MANAGEMENT OF CRUSH CRUSH VICTIMS IN MASS DISASTERS

Work Group Review Draft
Istanbul, Turkey
January 28-30, 2010
INTERVENTIONS

- Iran, March, 1997: Material support
- Moldova, March, 1999: Material support
- Macedonia, May, 1999: Evacuation chronic patients
- Macedonia/Kosova, July, 1999: Material support
- Turkey, August, 1999: Major intervention
- Kosova, February, 2000: Educational support
- India, January, 2001: Assessment
- Turkey, May, 2003: Material support
- Algeria, May, 2003: Assessment
- Iran, December, 2003: Major intervention
- Luisiana, August, 2005: Advisory role
- Pakistan, October 2005: Major intervention
- Poland, January, 2006: Advisory role
- Indonesia, May, 2006: Assessment
- Lebanon, July, 2006: Material support
- Peru, August, 2007: Scouting
- China, May 2008: Major intervention
- Italy, April 2009: Advice
- Indonesia, September 2009: Assessment
- Haiti, January 2010: Major intervention
- Chile, February 2010: Advice
- Turkey, March 2010: Advice
- New Zealand September 2010 and February 2011: Advice
- Ivory Coast, May 2011: Material support
- Lybia, May 2011: Material support
- Turkey, October 2011: Advice

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