THE OPERATION THE WORLD NEVER FORGET

Lessons Learned from Thai Cave Rescue

November 12, 2018  15.45-17.35 hr.
Maj. Gen. Wutichai Isara
Director of Fort Somdej Phranaraesuan Maharaja Hospital
Chief Medical Officer; 3rd Army Area, RTA
Chief Commander of Field Hospital
Flight Surgeon; Army Aviation Center, Alabama; USA
THE ROLES OF ROYAL NAVY DOCTOR IN THAI CAVE RESCUE

Capt. Kamonsak Tangchai, RTN, MD.
Diving Medical Officer and Flight Surgeon
Chief of underwater and aviation medicine division
Arbhakornkiatiwong Hospital, Sattahip Naval Base
PREHOSPITAL HYPOTHERMIA MANAGEMENT FOR THAI CAVE RESCUE

Maj. Chanrit Lawthaweesawat MD.
Cardiac Anesthesiologist, Bumrungrad International Hospital,
Deputy Secretary General, The Medical Association of Thailand
PULMONARY CONCERNS DURING AIR EVACUATION IN THAI CAVE RESCUE OPERATIONS

Lt.Col. Thanarat Lumjoun MD.
Chest physician, Director of Fort Khunchueangthammikkarat Hospital
13 FROM DARKNESS COMES LIGHT
The Remarkably Amazing Procedure Rescue from the cave in Thailand

Maj.Gen. Wutichai Isara
Director of Fort Somdej Phranaraesuan Maharaja Hospital
Chief Medical Officer; 3rd Army Area, RTA
Chief Commander of Field Hospital
Flight Surgeon; Army Aviation Center, Alabama; USA
“we should accept to lose some or finally we’ll lost all”

But

WE SAVE ALL
Introduction to Thailand Cave Rescue Panel

Lessons Learned from Thai Cave Rescue

- **What**: 13 wild boars trapped inside Thailand cave
- **When**: 18 days Timeline for Rescue
- **Where**: Tham Luang – Khun Nam Nang Non Forest Park in Chiang Rai, Thailand
- **How**: Setting Medical plan For Rescue Panel
Tham Luang Cave, Chiang Rai, Thailand

Approximated Area To Cave Entrance
Timeline

23rd June

- 12 boys + 1 coach trapped deep inside
- Found bikes, bags, shoes outside

24th June

- Start Rescues, Survey, water drainage
- Thai Navy Seal joined

Request & Rapid Response

Set up Field Hospital

Jointed Exercise

Operation Plan
Timeline

23rd June
- 12 boys+ 1 coach trapped deep inside
- Found bikes, bags and shoes outside

24th June
- Start the rescue, survey and water drainage
- Thai Navy Seal joined

28th June
- Set up Field Hospital and Medical Incidence Center
- 3rd Army Area Medical Service, MOPH
Timeline

23rd June
- 12 boys+ 1 coach trapped deep inside
- Found bikes, bags and shoes outside

24th June
- Start the rescue, survey and water drainage
- Thai Navy Seal joined

28th June
- Set up Field Hospital and Medical Incidence Center
- 3rd Army Area Medical Service, MOPH

30th June
- Joint Exercises

2nd July
- 2 British Divers made an incredible discovery
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>23rd June</td>
<td>12 boys + 1 coach trapped deep inside</td>
<td>Found bikes, bags and shoes outside</td>
</tr>
<tr>
<td>24th June</td>
<td>Start the rescues, survey and water drainage</td>
<td>Thai Navy Seal joined</td>
</tr>
<tr>
<td>28th June</td>
<td>Set up Field Hospital and Medical Incidence Center</td>
<td>3rd Army Area Medical Service, MOPH</td>
</tr>
<tr>
<td>30th June</td>
<td>Joint Exercises</td>
<td></td>
</tr>
<tr>
<td>2nd July</td>
<td>2 British cave divers made an incredible discovery</td>
<td></td>
</tr>
<tr>
<td>3rd-7th July</td>
<td>Doctor from Army Medical Department joined them</td>
<td>Restore 13 wild boars’ physical and mental fitness</td>
</tr>
<tr>
<td>8th July</td>
<td>Diver Teams &amp; Thai Navy Seal go inside to rescue</td>
<td>4 wild boars came out of Cave (1st Group)</td>
</tr>
<tr>
<td>Date</td>
<td>Events</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
<td></td>
</tr>
</tbody>
</table>
| 23rd June  | • 12 boys + 1 coach trapped deep inside  
             • Found bikes, bags and shoes outside |
| 24th June  | • Start the rescue, survey and water drainage  
             • Thai Navy Seal joined |
| 28th June  | • Set up Field Hospital and Medical Incidence Center  
             • 3rd Army Area Medical Service, MOPH |
| 30th June  | • Joint Exercises |
| 2nd July   | • 2 British cave divers made an incredible discovery |
| 3rd - 7th July | • Doctor from Army Medical Department joined them  
                        • Restore 13 wild boars’ physical and mental fitness |
| 8th July   | • Diver Teams & Thai Navy Seal go inside to rescue  
                        • 4 wild boars came out of the cave (1st group) |
| 9th - 10th July | • 4+5 wild boars, 3 Navy Seal, 1 Doctor came out of the cave  
                                • successfully rescued the wild boars |
The stress

• High expectation
• Limited medical data and no communication
• making good (not best) medicine in bad situation
• Not only medical data was used to make decision but it is also a military mission under the Government order and finally, under the perception of the world
Field Hospital

**Medical Incidence Command**
- 10 Military hospitals, 3rd Army Area
- Medical Department supervisors and equipment
- Navy medical team
- MOPH province senior medical director and supporting team from the regional general hospital

**Responsibility**
- Military medical Team - The boys, coach and Navy seal
- MOPH team - Other supporters and the boy’s family
Field Hospital

• Evacuation Team (one team: one kid)
  • 4 Army medical Teams (4 Ambulances) and 2(4) air evacuation teams
• 5 MOPH medical teams
• 4 police medical teams (2 air evacuation)
Ready to rescue

Rescuers have begun final preparations to bring the 12 trapped children and their football coach out of the Tham Luang caves.

8 Jul 2018 at 10:49
The Most wonderful Guy

Dr. Richard Harris; Anesthesiologist
“First I have to let you know that the procedure we are talking about, it has never been done before in this world, but we have experience it and practiced it many times.”
Decision making

• Authority
• Base on limited and unreliable data
• Perfect time (Now is better)
• Good procedure (not best)
• Good practice (many times)
• Leave no one behind
Why we chose this procedure?

• Basic concept of rescuing
  “Rescue come first, victim comes later”

• Golden term
  “we should accept to lose some or finally we’ll lost all”
The procedure

- Prepare supplies
  - Logistic equipments (when and where)
  - Expert cave diver team and authority in situation
  - Evacuation team (Navy seal, Medical team)
- Sedate the boys by medications
- Restrain and use Full Face Mask technique
- Evaluate the boys and Oxygen level in each chamber
- Urgently sent them to Field hospital under the care of the medical team
- Keeping them warm, Resuscitations and Evacuation
2 persons I concern most
WE SAVE ALL
WE SAVE ALL
Amazing Benefits

• The medications used
  • Tachycardia counteract the side effect of Bradycardia from serious Hypothermia
  • Being a kid helps (in Tachycardia)
  • Sedation prevents Psychological trauma while passing the jeopardy cave.
Amazing Benefits

• Everyone involved knew that they are part of this successfulness and are proud to be known as the unsung hero.

• New field hospital guidelines

• Field hypothermia treatment
13 FROM DARKNESS COMES LIGHT