We owe gratitude to our forefathers in the rescue world.

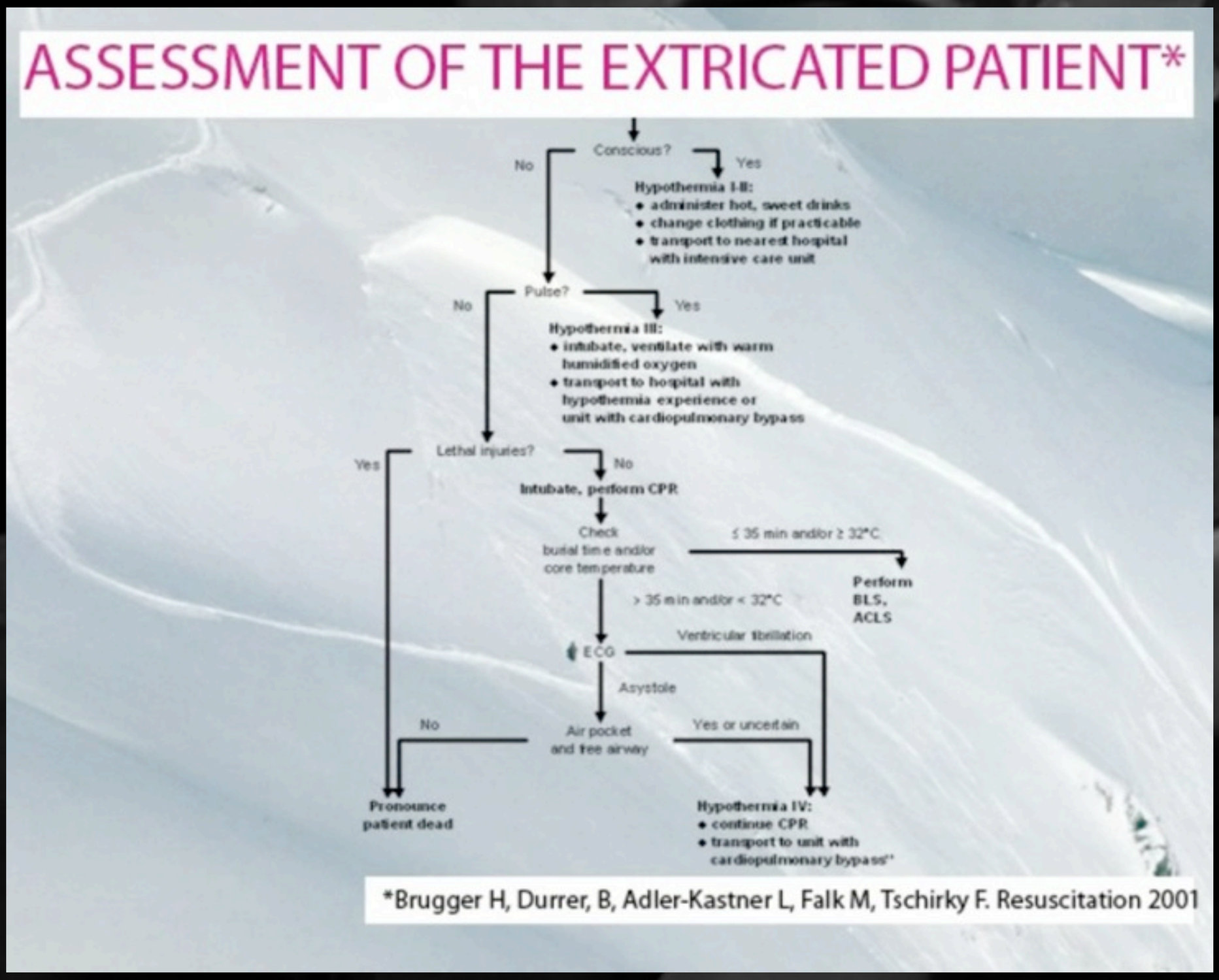
However, things have changed a little over time.

And, for winter rescue a large percentage of the focus is avalanche rescue.

Avalanche resuscitation

And, of course, the MedCom has been very involved in the resuscitation of the avalanche victim.

Avalanche resuscitation



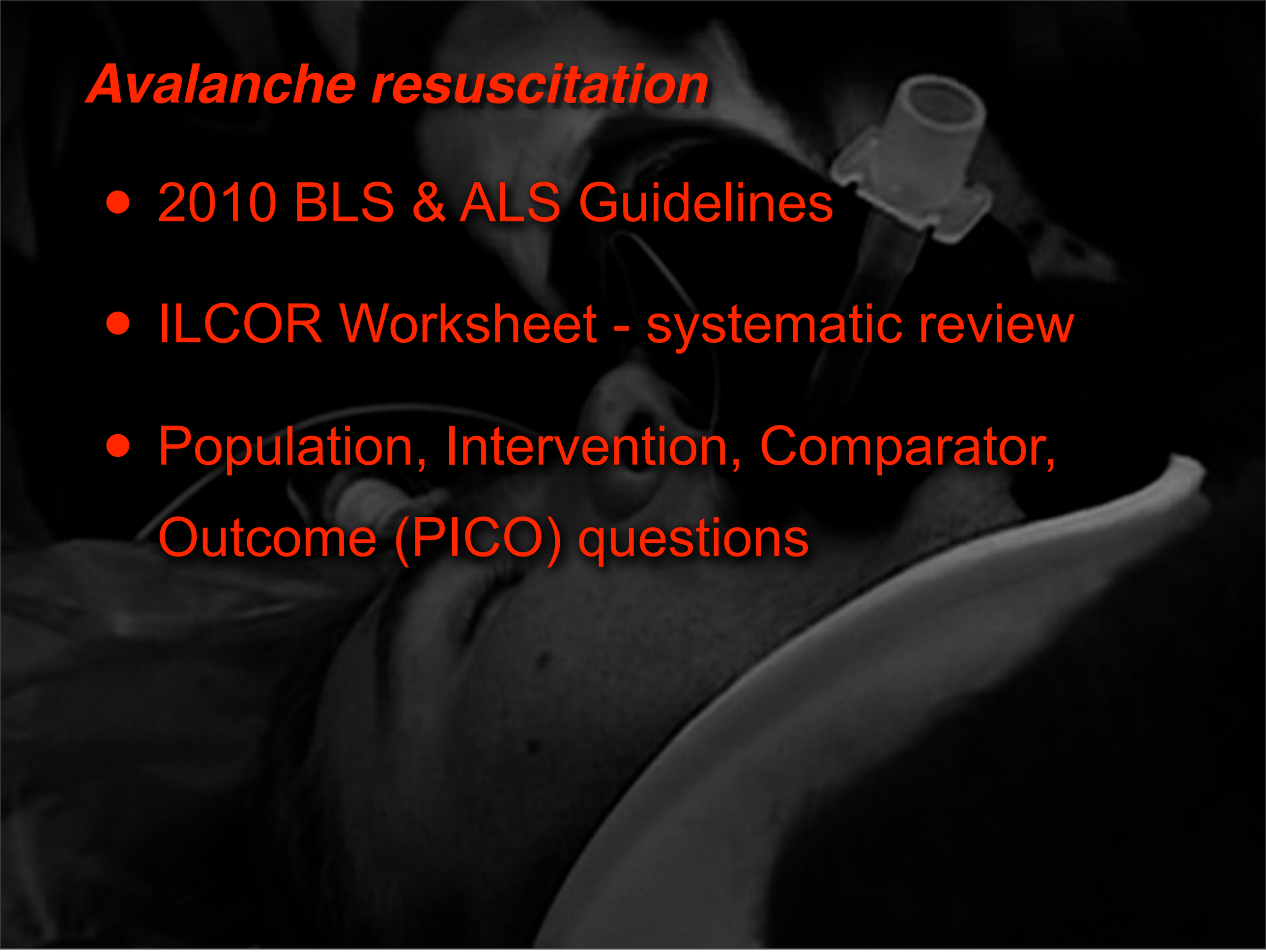
In 2001 after considerable research and discussion the MedCom developed and published this resuscitation algorithm, that incorporates concepts from general resuscitation as well as the resuscitation for hypothermia. This algorithm has been very useful to give rescue doctors a structure to use in dealing with avalanche victims around the world.

Avalanche resuscitation

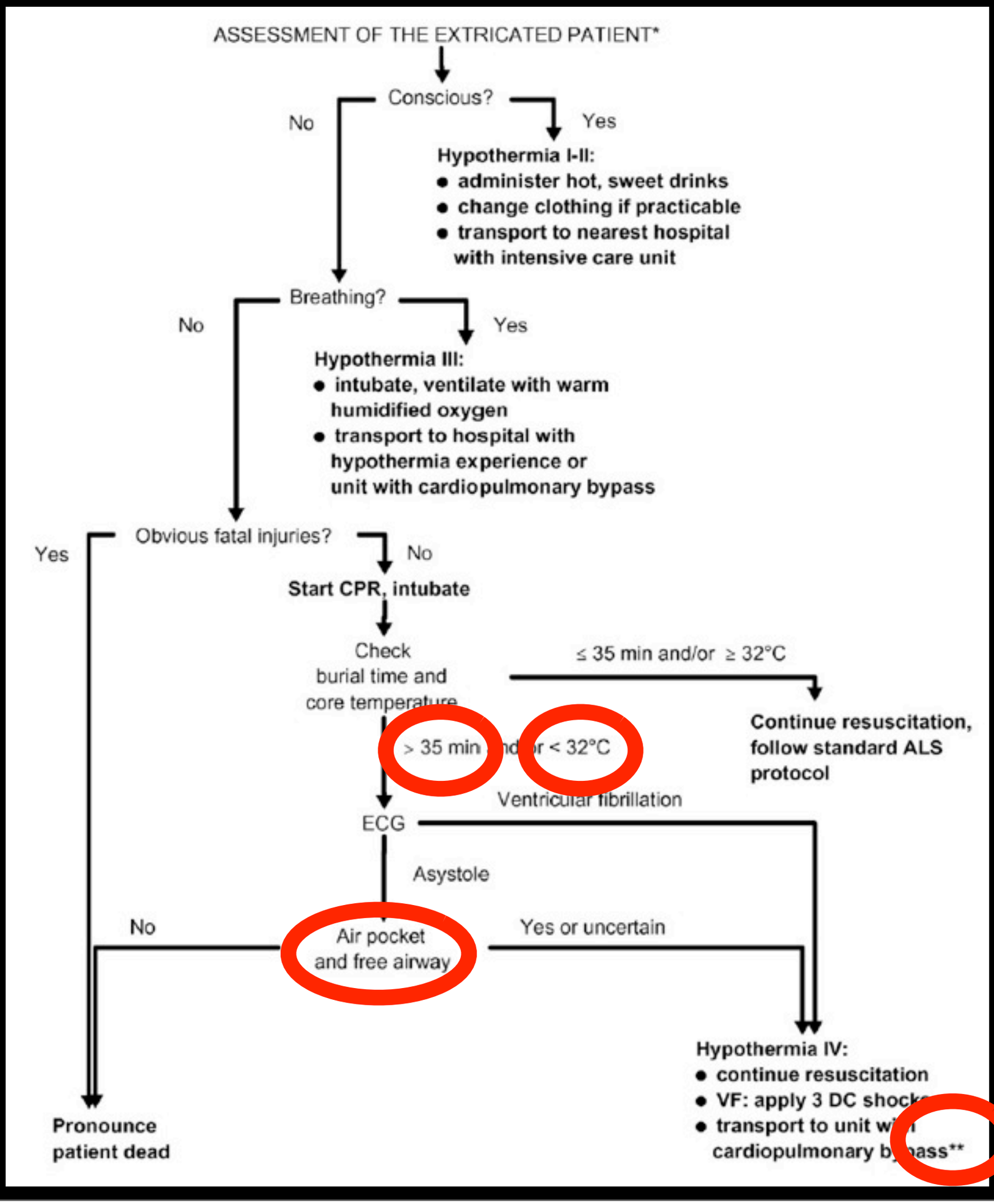
Which was largely the work of Hermann Brugger, the world avalanche guru. Hermann is practicing here with a scythe in preparation for becoming the Grim Reaper, the controller of time.

Avalanche resuscitation

And thus he named the very valuable DVD “Time is Life”. This DVD remains a very valuable tool for avalanche resuscitation and the MedCom still have copies for sale.



- 2010 BLS & ALS Guidelines
- ILCOR Worksheet - systematic review
- Population, Intervention, Comparator, Outcome (PICO) questions



The 4 most important factors in the algorithm are time of burial, core temperature, whether there is a free airway or not and if these factors are not clear a serum potassium in a hospital may be of benefit in a severely hypothermic victim.

Avalanche resuscitation

- 2010 BLS & ALS Guidelines
- ILCOR Worksheet - systematic review
- Population, Intervention, Comparator, Outcome (PICO) questions
- Time of burial, air pocket/free airway, core temperature, serum potassium

- 2010 BLS & ALS Guidelines
- ILCOR Worksheet - systematic review
- Population, Intervention, Comparator, Outcome (PICO) questions
- Time of burial, air pocket/free airway, core temperature, serum potassium

Avalanche resuscitation

- *For avalanche victims in cardiac arrest who have been buried longer than 35 minutes (P), does the presence of a patent airway (I), compared to absence of a patent airway (C), predict survival to hospital discharge (O)?*
- *2 other PICO questions for core temperature <32°C /airway patency, serum K^+*

An example of a PICO question is the one that combines time of burial and airway patency.

- *For avalanche victims in cardiac arrest who have been buried longer than 35 minutes (P), does the presence of a patent airway (I), compared to absence of a patent airway (C), predict survival to hospital discharge (O)?*
- *2 other PICO questions for core temperature <32°C /airway patency, serum K^+*

Avalanche resuscitation

- Victims <35 minutes - full BLS & ALS unless lethal trauma or other factors such as concern for rescuer safety
- Victims >35 minutes - with patent or unknown airway - full BLS & ALS
- Victims >35 minutes - with obstructed airway & asystole - resuscitation may be terminated

- Victims <35 minutes - full BLS & ALS unless lethal trauma or other factors such as concern for rescuer safety
- Victims >35 minutes - with patent or unknown airway - full BLS & ALS
- Victims >35 minutes - with obstructed airway & asystole - resuscitation may be terminated

Avalanche resuscitation

- Victims unknown time but >32°C - full BLS & ALS
- Victims <32°C - with patent or unknown airway - full BLS & ALS & extracorporeal rewarming
- Victims <32°C - with obstructed airway & asystole - resuscitation may be terminated

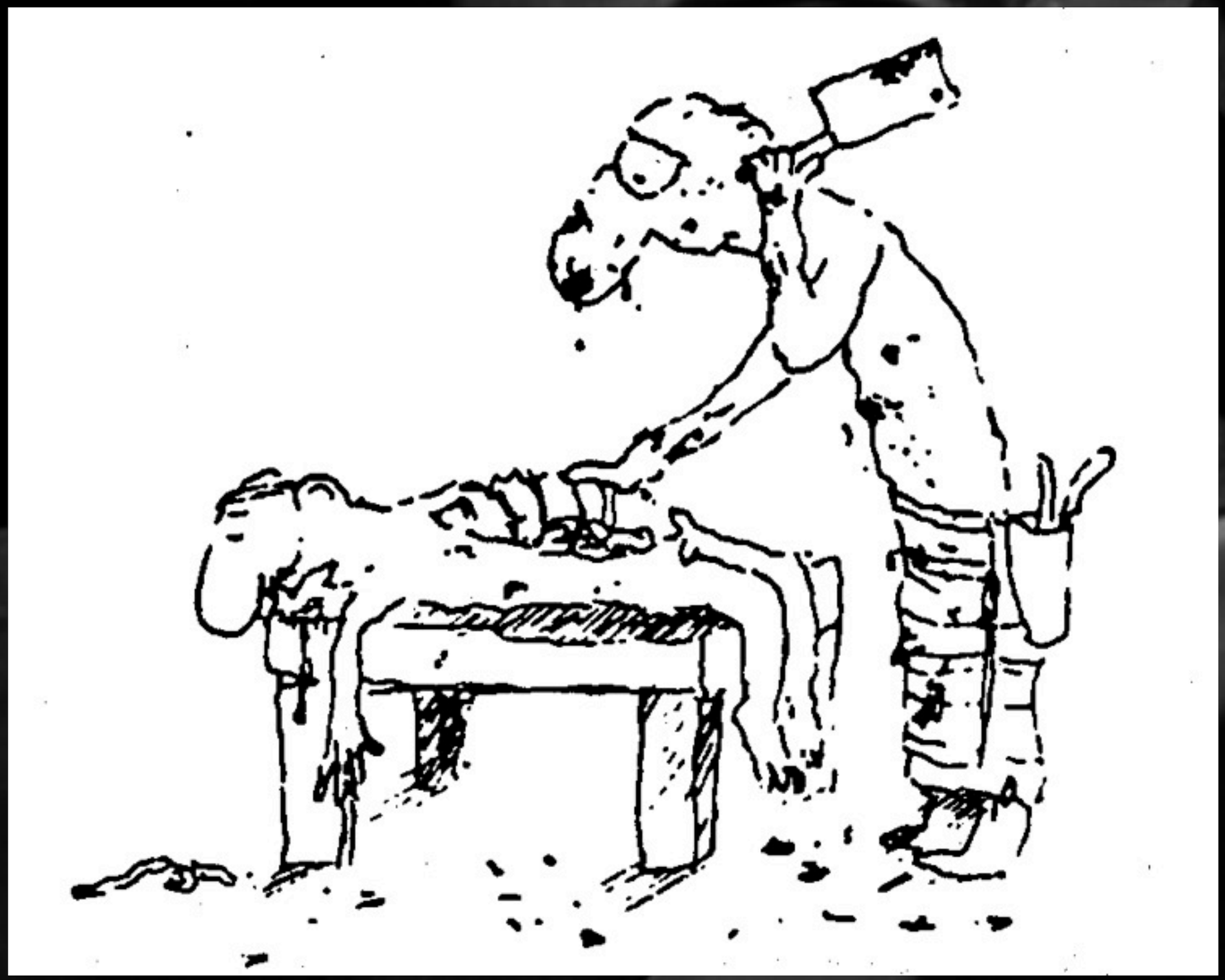
- Victims unknown time but >32°C - full BLS & ALS
- Victims <32°C - with patent or unknown airway - full BLS & ALS & extracorporeal rewarming
- Victims <32°C - with obstructed airway & asystole - resuscitation may be terminated

Avalanche resuscitation

- Victims <32°C - with patent or unknown airway - serum K^+ < 7 mmol/L - full BLS & ALS & extracorporeal rewarming
- Victims <32°C - with patent or unknown airway - adult with serum K^+ > 7 mmol/L & asystole & other factors - may not benefit resuscitation and rewarming
- Victims <32°C - with patent or unknown airway - adult with serum K^+ > 12 mmol/L - terminate resus

- Victims <32°C - with patent or unknown airway - serum K^+ < 7 mmol/L - full BLS & ALS & extracorporeal rewarming
- Victims <32°C - with patent or unknown airway - adult with serum K^+ > 7 mmol/L & asystole & other factors - may not benefit resuscitation and rewarming
- Victims <32°C - with patent or unknown airway - adult with serum K^+ > 12 mmol/L - terminate resus

Avalanche resuscitation



We also recognized that the algorithm and the resuscitation notes did not account well for the treatment of trauma due to avalanches and we recommended this be included in the new resuscitation notes.

Avalanche resuscitation

- SR confirms key steps in algorithm

- SR confirms key steps in algorithm

Prognostic factors in avalanche resuscitation: a systematic review

Resuscitation. June 2010;81(6):654-652.

www.elsevier.com/locate/resuscitation

Prognostic factors in avalanche resuscitation: a systematic review

Resuscitation. June 2010;81(6):654-652.

www.elsevier.com/locate/resuscitation

Avalanche resuscitation

- SR confirms key steps in algorithm
- October 18th ERC & AHA will publish 2010 BLS & ALS Guidelines
- ICAR MedCom after further literature review & consensus -modify and publish

avalanche resuscitation algorithm

- SR confirms key steps in algorithm
- October 18th ERC & AHA will publish 2010 BLS & ALS Guidelines
- ICAR MedCom after further literature review & consensus -modify and publish avalanche resuscitation algorithm

We must credit

- the International Liaison Committee on Resuscitation
- Canadian Mountain Holidays (the helicopter skiing company),
- the Canadian Avalanche Centre
- the Institute of Mountain Emergency Medicine under the auspices of EURAC

There was no external funding for this study nor were there any competing interests.

Avalanche resuscitation