

## LUCAS 2 in hypothermic cardiac arrest patients

Please note that hypothermia is defined as core body temperature <35° centigrades

### Patient inclusion criteria

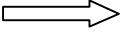
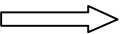
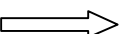
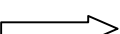

Adult hypothermic cardiac arrest patient with:

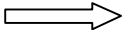
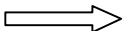
- **CPR** and
- **Primary** or **secondary helicopter transport**

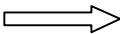
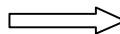
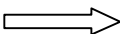
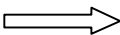
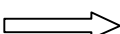
### Patient exclusion criteria

- Declaration of death on-site (i.e. asphyxia or trauma)
- LUKAS™2 application contraindicated

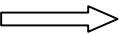
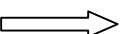
1.	<b>Person responsible for registration</b>		
<b>I Case</b>			
2.	Patient identifier	ID number	
3.	Gender	<input type="checkbox"/> male <input type="checkbox"/> female	
4.	Year of birth		
<b>II Accident and mission</b>			
5.	Date and time of accident	date /          /	time /
6.	Rescue alarm	date /          /	time /
7.	Accident characteristics	<input type="checkbox"/> avalanche accident <input type="checkbox"/> crevasse accident <input type="checkbox"/> submersion <input type="checkbox"/> extra-urban environmental exposure <input type="checkbox"/> urban environmental exposure <input type="checkbox"/> in-door exposure <input type="checkbox"/> other: <input type="checkbox"/> unknown	
8.	Mission characteristics	<input type="checkbox"/> air rescue <input type="checkbox"/> terrestrial rescue with air support <input type="checkbox"/> secondary transport <input type="checkbox"/> other: <input type="checkbox"/> unknown	
<b>III Prehospital Care</b>			
9.	Cardiac arrest witnessed	<input type="checkbox"/> no <input type="checkbox"/> yes	<input type="checkbox"/> before transport <input type="checkbox"/> during transport

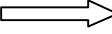
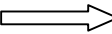
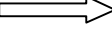
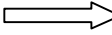
10.	Duration of cardiac arrest before HEMS arrival	min <input type="checkbox"/> unknown	
11.	First treatment before HEMS arrival	<input type="checkbox"/> no care <input type="checkbox"/> basic life support <input type="checkbox"/> advanced life support <input type="checkbox"/> unknown	
12.	Duration of CPR before HEMS arrival	min <input type="checkbox"/> unknown	
<b>IV Primary HEMS transport</b>			
13.	HEMS name		
14.	Mission ID		
15.	Arrival at scene	date /      /	time /
16.	Departure time from scene	time /	
17.	Landing time at hospital	time /	
18.	Rhythm at HEMS arrival	<input type="checkbox"/> shockable  (VT pulseless/VF) <input type="checkbox"/> nonshockable (asystole/PEA) <input type="checkbox"/> other: <input type="checkbox"/> unknown	<input type="checkbox"/> automated external defibrillator (AED) <input type="checkbox"/> manual defibrillator <input type="checkbox"/> other: <input type="checkbox"/> unknown
19.	Core body temperature at HEMS arrival	<input type="checkbox"/> tympanic °C <input type="checkbox"/> oesophageal °C <input type="checkbox"/> other: °C <input type="checkbox"/> unknown	
20.	Duration of cardiac arrest without chest compressions before LUCAS2	min <input type="checkbox"/> unknown	
21.	Duration of manual chest compressions before LUCAS2	min <input type="checkbox"/> unknown	
22.	Intubation and ventilation before LUCAS2	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown	
23.	Start of LUCAS2	time / <input type="checkbox"/> unknown	
24.	Problems with application of LUCAS2	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> dislocation <input type="checkbox"/> malfunction <input type="checkbox"/> other:
25.	Problems with LUCAS2 while loading the patient	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> dislocation <input type="checkbox"/> malfunction <input type="checkbox"/> other:
26.	Problems with LUCAS2 during the flight	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> dislocation <input type="checkbox"/> malfunction <input type="checkbox"/> other:
27.	Problems with LUCAS2 at hospital arrival	<input type="checkbox"/> no <input type="checkbox"/> yes 	<input type="checkbox"/> dislocation <input type="checkbox"/> malfunction

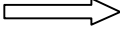
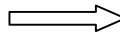
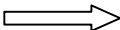
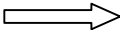
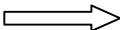
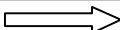
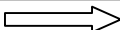
		<input type="checkbox"/> unknown	<input type="checkbox"/> other:
28.	Overall "hands-off time" with LUCAS2	min (estimated)	
29.	End tidal pCO <sub>2</sub> from LUCAS2 application	time (hrs/min)	pCO <sub>2</sub> (mmHg)
		/	mmHg
	00 min	/	mmHg
	05 min	/	mmHg
	10 min	/	mmHg
	20 min	/	mmHg
	30 min	/	mmHg
	60 min	/	mmHg
	90 min	/	mmHg
	120 min	/	mmHg
	180 min	/	mmHg
	At hospital arrival	/	mmHg
		<input type="checkbox"/> unknown	
30.	Defibrillation attempts	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> before departure <input type="checkbox"/> during flight <input type="checkbox"/> at hospital arrival number of attempts <input type="checkbox"/> unknown
31.	Drugs during CPR with LUCAS2	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> endovenous <input type="checkbox"/> intraosseous <input type="checkbox"/> unknown drugs administered
32.	Return of spontaneous circulation (ROSC) before hospital admission	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown	
33.	Core body temperature at ROSC	<input type="checkbox"/> tympanic °C <input type="checkbox"/> oesophageal °C <input type="checkbox"/> other: °C <input type="checkbox"/> unknown	
<b>V</b>	<b>First hospital</b>		
34.	Name of the Hospital		
35.	Arrival	date	time
		/ /	/

36.	Spontaneous circulation at arrival	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	Rythm
37.	Invasive arterial mean blood pressure at arrival	mmHg <input type="checkbox"/> unknown	
38.	End tidal pCO <sub>2</sub> at arrival	mmHg <input type="checkbox"/> unknown	
39.	Arterial Blood Gas analysis at arrival	paO <sub>2</sub> mmHg paCO <sub>2</sub> mmHg Base Excess <input type="checkbox"/> unknown	
40.	Serum potassium at arrival	mmol/L <input type="checkbox"/> unknown	
41.	Core body temperature at arrival	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> tympanic °C <input type="checkbox"/> oesophageal °C <input type="checkbox"/> other: °C
42.	Haemoglobin level at arrival	g% <input type="checkbox"/> unknown	
43.	CT Scan	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	findings
44.	Traumatic injuries (diagnoses)		
45.	Active rewarming	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> cardiopulmonary bypass <input type="checkbox"/> ECMO <input type="checkbox"/> forced air <input type="checkbox"/> other
46.	Spontaneous circulation at discharge	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	Rythm

**VI Secondary HEMS transport**

47.	HEMS name		
48.	Mission ID		
49.	Departure time	time /	
50.	Landing time	time /	
51.	Start of LUCAS2 (if not already applied)	time / <input type="checkbox"/> unknown	
52.	Problems with application of LUCAS2 (if not already applied)	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> dislocation <input type="checkbox"/> malfunction <input type="checkbox"/> other:
53.	Problems with LUCAS2 while loading the patient	<input type="checkbox"/> no <input type="checkbox"/> yes 	<input type="checkbox"/> dislocation <input type="checkbox"/> malfunction

		<input type="checkbox"/> unknown	<input type="checkbox"/> other:
54.	Problems with LUCAS2 during the flight	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> dislocation <input type="checkbox"/> malfunction <input type="checkbox"/> other:
55.	Problems with LUCAS2 at hospital arrival	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> dislocation <input type="checkbox"/> malfunction <input type="checkbox"/> other:
56.	Overall "hands-off time" with LUCAS2	min (estimated)	
57.	End tidal pCO <sub>2</sub> from departure	time (hrs/min)	pCO <sub>2</sub> (mmHg)
		/	mmHg
	00 min	/	mmHg
	05 min	/	mmHg
	10 min	/	mmHg
	20 min	/	mmHg
	30 min	/	mmHg
	60 min	/	mmHg
	90 min	/	mmHg
	120 min	/	mmHg
	180 min	/	mmHg
	At hospital arrival	/	mmHg
		<input type="checkbox"/> unknown	
58.	Defibrillation attempts	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> before departure <input type="checkbox"/> during flight <input type="checkbox"/> at hospital arrival number of attempts <input type="checkbox"/> unknown
59.	Drugs during CPR with LUCAS2	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> endovenous <input type="checkbox"/> intraosseous <input type="checkbox"/> unknown drugs administered
60.	Return of spontaneous circulation (ROSC) before hospital admission	<input type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> unknown	
61.	Core body temperature at ROSC	<input type="checkbox"/> tympanic °C <input type="checkbox"/> oesophageal °C <input type="checkbox"/> other: °C	

		<input type="checkbox"/> unknown	
<b>VII Second hospital</b>			
62.	Name of the Hospital		
63.	Arrival	date / /	time /
64.	Spontaneous circulation at arrival	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	Rythm
65.	Invasive arterial mean blood pressure at arrival	mmHg <input type="checkbox"/> unknown	
66.	End tidal pCO <sub>2</sub> at arrival	mmHg <input type="checkbox"/> unknown	
67.	Arterial Blood Gas analysis at arrival	paO <sub>2</sub> mmHg paCO <sub>2</sub> mmHg Base Excess <input type="checkbox"/> unknown	
68.	Serum potassium at arrival	mmol/L <input type="checkbox"/> unknown	
69.	Core body temperature at arrival	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> tympanic °C <input type="checkbox"/> oesophageal °C <input type="checkbox"/> other: °C
70.	Haemoglobin level at arrival	g% <input type="checkbox"/> unknown	
71.	CT Scan	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	findings
72.	Traumatic injuries (diagnoses)		
73.	Active rewarming	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	<input type="checkbox"/> cardiopulmonary bypass <input type="checkbox"/> ECMO <input type="checkbox"/> forced air <input type="checkbox"/> other
74.	Spontaneous circulation at discharge	<input type="checkbox"/> no <input type="checkbox"/> yes  <input type="checkbox"/> unknown	Rythm
<b>VIII Patient's outcome</b>			
75.	Survival at latest hospital discharge	<input type="checkbox"/> Yes  <input type="checkbox"/> No	Overall hospital stay days
76.	Autopsy (non-survivors)	<input type="checkbox"/> Yes  <input type="checkbox"/> No	Cause of death

77.	Cerebral Performance Category (at hospital discharge)	<input type="checkbox"/> CPC 1 Good cerebral performance <input type="checkbox"/> CPC 2 Moderate cerebral disability <input type="checkbox"/> CPC 3 Severe cerebral disability <input type="checkbox"/> CPC 4 Coma or vegetative state <input type="checkbox"/> CPC 5 Brain death <input type="checkbox"/> unknown
78.	Cerebral Performance Category (after 6 months)	<input type="checkbox"/> CPC 1 Good cerebral performance <input type="checkbox"/> CPC 2 Moderate cerebral disability <input type="checkbox"/> CPC 3 Severe cerebral disability <input type="checkbox"/> CPC 4 Coma or vegetative state <input type="checkbox"/> CPC 5 Brain death <input type="checkbox"/> unknown
<b>IX CRF completion</b>		
	Completed	date        /        /
	Name	Signature