AUTOPSY MODULE WITHIN UN MISSIONS

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Issue Paper Theme: **Medical**

BACKGROUND

In 2021 there were 25 deaths of UN Peacekeepers or UN civilians resulting from their service within the United Nations. Since 2010 over 462 personnel have died servicing the United Nations, an average of over 38 personnel per year. The need for an autopsy capability within UN Missions, including, pathology, toxicology, embalmment and sealing of caskets has become critical to ensure deployed health services can respond to such events in a timely and respectful manner. Just as medical care is standardized in the UN, having a standard autopsy service when deaths occur is critical. Currently, autopsy services in the mission areas are poorly equipped, non-standardized, substandard is their capability, and produce unreliable reports. As a result, most missions in east Africa use a civilian facility in Kampala which provides suboptimal reports, requiring the use of commercial or special flights to transfer the bodies for autopsy. This is neither cost effective, nor enables timely response to deaths occurring within a mission.

Substandard reporting on cause of death can impose delays for any subsequent claims for compensation by Member States. Medical reporting on the cause of death has legal ramifications that are critical in supporting UN adjudication for compensation and other administrative decisions. Boards of Inquiry must also have reliable information to support their findings. This lack of appropriate autopsy capability within Missions needs to be addressed and it is proposed that one Level 2 or Level 3 hospital be equipped with an Autopsy Module (APM) within high-risk Missions that warrant such a capability. The inclusion of the autopsy module would also provide pathology capability within Level 2 hospitals which may not have that capability when deployed in the standardize role. The provision of this pathology service would extend beyond just autopsy and be able to provide a broad range of pathology services within the mission. The purpose of this paper is to provide detail on a proposed Autopsy / Pathology Module, including equipment and personnel required, the Wet Lease Rate, and the self-sustainment arrangements that would be involved.

PROPOSAL

It is proposed to have an Autopsy Module capable of both autopsy and other related pathology procedures within at least one Level 2 or Level 3 in high-risk missions where the ability to use high standard contracted facilities and services is limited. This will enable standardization of autopsy services across UN Missions with good quality and timely autopsy's and supporting procedures and would enable more timely responses to Member States claims for compensation following the death of one of their members.

The proposed module would comprise of the following:

- Manpower:
    - Forensic pathologist x 1
    - Pathology assistant technician x 1 (with training on histology slides staining, DNA analysis ect)

The inclusion of a Pathologist and Pathology Assistant Technician will also be capable of providing a broad range of pathology services to the Level 2 when not directly involved in autopsy procedures that would not normally be available within that facility.

- Equipment:
  - Refrigerated body storage rack system / fridge container
  - Autopsy table set
  - Postmortem instrument set including electric autopsy saw
  - Standard Fridge
  - Glass cabinets x 2
  - Wheeled cadaver/body carts (stretcher) x 2
  - Trollies
  - Linen and gowns, bed sheets
  - Microtome, histology equipment and supplies
  - Microscopes
  - PPE
  - Laptop and printer

A full list of equipment, including Histopathology Laboratory equipment can be found in Annex A to this paper. Equipment costs can be summarized as follows:

- Cost of Autopsy procedure equipment: $13,561
- Cost of histopathology equipment: $115,000
- Cost of Toxicology equipment: $94,250
- Total equipment value (GFMV): **$222,811**

Based on the above GFMV, and an equipment life of 7 years, and a no-fault factor of 0.1%; the Dry Lease Monthly Rate would be as follows:

$$\frac{\text{GFMV/life}}{12} + \frac{\text{GFMV x no fault factor}}{12} = \text{Dry Lease rate}$$

$$\frac{222{,}811 / 7}{12} + \frac{222{,}811 \times 0.001}{12} = \$2{,}671$$

The maintenance Rate for all medical modules is calculated at 0.5 percent of the GFMV[1]. Accordingly, the Maintenance Rate for the Autopsy / Pathology Module would be $222,811 X 0.005 = $1,114.

The Wet Lease Rate for the Autopsy Module would be: Dry Lease Rate ($2,671) + Maintenance Rate ($1,114) = $3,785.

Self-Sustainment

Due to the unpredictable nature of autopsy procedures, it is proposed that all consumables should be provided by

[1] Note i, Annex A, Chapter 8, page 190 of COE manual.

the UN from within Missions. No self-sustainment rates for this module is proposed.

PROPOSED MANUAL TEXT

Insert new sub-paragraph to paragraph 20 of Annex C to Chapter 3 of the COE Manual as follows:

Autopsy Module. Level 2 or Level 3 hospitals when deployed, may be augmented with an Autopsy Module to carry out autopsy procedures including pathology, histology, toxicology, embalmment and sealing of caskets within those Missions deemed of sufficient operational risk to warrant dedicated autopsy capability. The Autopsy module would also provide all necessary reporting to support any Boards of Inquiry and the adjudication of any compensation claim and other administrative decisions stemming from a death during peacekeeping service. The requirements of the Autopsy Module are listed in Appendix 7.2 of this Chapter.

Insert new line to Annex A to Chapter 8, page 184 under sub-heading '*Medical and Dental equipment':*

Category of Equipment	Type of Equipment	Generic Fair market Value	Estimated useful life in years	Maintenance Rate	Monthly Dry Lease Rate	Monthly Wet Lease Rate	No-fault incident factor (percentage)
Medical and Dental Equipment	Autopsy Module	222,811	7	1,114	2,671	3,785	0.1

Insert new line to *Reimbursement Rates for Self-Sustainment,* Annex B to Chapter 8, page 191 under sub-heading *Medical:*

	Monthly Rate Excluding Factors
Autopsy Module	Provisioned under UN Mission arrangements

FINANCIAL IMPLICATIONS

The Autopsy Module would only be deployed in high-risk missions where there are no high-quality contract facilities available for autopsy. Currently, this would see this capability potentially deployed to MINUSMA, MINUSCA and MONUSCO. If deployed to all these three missions, the cost of deployment would be $136,260 per year.

These costs, however, would be offset by the costs of both contracting a civilian facility to carry out the autopsy, approximately $1500 per procedure, and the cost of commercial flights transporting the body to that facility, approximately $1000. Total cost of using a commercial facility would therefore be $2,500 per procedure.

In 2021, the following number of fatalities occurred in the respective Missions:

- MINUSMA – 37
- MINUSCA – 29
- MONUSCO – 27

Of these deaths, 25 were attributed to malicious or hostile acts that would have necessitated an autopsy. A further seven deaths required an autopsy to determine the cause of death. Noting the cost per procedure of $2,500, a total of 32 procedures incurred a total cost of $80,000. Accordingly, the net cost to the UN would have been $56,260.

If the Autopsy Module was only deployed to MINUSMA and MINUSCA, the cost would have been $90,840, offset by 27 procedures at a cost of $67,500 for a net cost of $23,340. This demonstrates that the Module should only be deployed to those Missions where the operational risk is sufficient to warrant the capability.

PREVIOUS HISTORY

This issue has not been raised to the COE Working Group previously.

ANNEX A

AUTOPSY MODULE EQUIPMENT

AUTOPSY EQUIPMENT			
Serial Number	Category	Item	Cost (USD)
1	Scalpel and knives	Slicing knife	28
2		Brain knife x 2	20
3		Organ knife	7
4		Organ knife and saw	8
5		Bistoury knife	13
6		Rib knife	21
7		Baron scalpel handle (with blades)	13
		Scalpel handle	13
8		Solid forged scalpel (140mm)	13
9		Solid forged scalpel (160mm)	13
10		Solid forged scalpel (165mm)	13
11		Pelvic organ knife	7
12	Scissors	Dissection scissors	3
13		Barnard bowel scissors	26
14		Mayo dissection scissors	3
15		Iris scissors	5
16		Bowel scissors	3
17		Strabismus scissors	5
		Scissors	4
18		Metzenbaum scissors	7
19		Bowel	26
20	Bone cutting forceps	Liston Bone cutting forceps	104
21		Horsley bone cutter	59

22	Rib Shears	Whole set	156
23	Dissecting forceps and needle holder	Dissecting set complete	59
24	Forceps, clamps and raspatory	Spencer wells artery forceps, straight	6
25		Spencer wells artery forceps, curved	6
26		Durometer stripping	26
27		Lane bowel clamp	21
28		Raspatory	26
29	Saws	Fixed back	23
30		Hinged back	78
31		Spinal	73
32		Amputation	65
33	Gouges and chisels	Gouge	10
34		Vertebrae chisel	117
35		Chisel	8
36	Mallets, probes, retractors, needles	Rubber mallet	4
37		Mallet army pattern	104
38		Hammer	18
39		Silver plated probe	13
40		Durham Retractor	20
41		Scalpel blade remover	13
42	Autopsy Table with integral wing and elevating option		2080
43	Oversized bariartric autopsy trolley		3081
44	MOBI stainless steel embalming station		5195

45	MOBI water control unit		1950
Total			13,561
HISTOPATHOLOGY LABORATORY EQUIPMENT			
	Grossing	Weighing Scale (0-10kg)	10,000
		Cutting boards	
		Fume hood/cabin	
		Dictaphones	
		Hisokinette – Automatic Tissue processor	40,000
	Embedding	Embedding machine with wax dispenser, cold and warm stations	25,000
		Embedding moulds	
		Embedding rings	
		Wax dispenser	
	Section Cutting	Rotary microtome with accessories – knife holders and knives	22,500
		Warm water bath	
		Hot air oven / incubator	
		Warm plate	
		Cold plate	
		Deep freezer (-20 to -80)	
	Staining	Staining dishes	7,500
		Staining racks	
		Laboratory fridge	
		Distilled water machine	
		Weighing scale	
		Laboratory fridge	
	Slide Viewing	Double head Microscopes	10,000
		Slide filing cabinets	
		Block filing cabinets	

Total			**115,000**
Toxicology Equipment			
	ADAMET Screening Machine		**94,250**
Total			**94,250**