

Proposal for the development of 4 intensive care and 2 high dependency care beds for new born infants and children in Mostar, Bosnia and Herzegovina

Background

Following the Washington Agreement, Mostar has represented the centre of the Federation and a key component of the Dayton peace accord for Bosnia and Herzegovina . The two sides of Mostar are separated by the Neretva River and freedom of movement between the 2 sides of the city is currently improving. The European Union Administration for Mostar has been trying for nearly 2 years to unify the city and amongst other activities to improve health care for all of its citizens.

In West Mostar there is a well staffed and effectively functioning paediatric unit with a number of very able consultant paediatricians and junior hospital doctor staff. In East Mostar there has been an extremely poorly equipped and almost destroyed health centre which has provided inpatient care for sick children. In collaboration with UNICEF and Child Advocacy International/Keele University, the EU Administration has been renovating this health centre and converting it into a centre for mother and child health including a delivery suite and emergency caesarean section operating theatre. However, there is only one senior and one junior paediatrician in East Mostar caring for more than 12,000 children. The most senior paediatrician who used to work in the health centre has been very ill and is not yet able to work.

Outline of the proposed project

1. Using existing ward areas in the West Mostar Hospital (Bijeli Brijeg Hospital) we propose to equip one area to contain 2 beds enabling the provision of very high

quality modern neonatal intensive care for new born infants born either prematurely or with complications relating to their birth or intrauterine development. We will also provide in a converted ward area of the West Mostar Hospital, probably very close to the neonatal intensive care beds, an area containing 2 beds that will provide intensive care for older infants and children.

These 4 intensive care beds will contain up to date monitoring equipment and facilities to provide assisted ventilation and circulatory support for children from both East and West Mostar and the surrounding area of Bosnia and Herzegovina.

Table 1 outlines the equipment required to establish these 4 intensive care beds together with costs of this equipment.. The equipment outlined in Table 1 is identical to that used in the North Staffordshire Hospital at Keele University. We hope to train paediatricians from Mostar in the North Staffordshire Hospital (see below) and this means that following their training in the UK they will be able immediately to use this new equipment in their hospital.

Within the newly refurbished Maternal and Child Health Centre in East Mostar we propose to equip 2 beds for the high dependence care of both infants and children. Facilities to initiate assisted ventilation will be available but if this form of treatment is required for any length of time we would expect children to be transferred to West Mostar for further care.

Table 2 outlines details of the equipment needed for these 2 high dependency beds. Should staffing significantly improve in East Mostar it would be relatively straight forward to upgrade the equipment on the East to convert these high dependency beds into intensive care beds. However, hopefully with improving integration of the city and improving freedom of movement this should not be necessary.

2. The EU Administration have already funded Child Advocacy International/Keele University to provide training for paediatricians from Mostar. In East Mostar the senior paediatrician Dr Vele speaks only a little English. In West Mostar a senior paediatrician Dr Ronchevic speaks fluent English, he is also interested in paediatric cardiology and provides an echo cardiographic service for all children in the Mostar area.

We propose to take both Dr Vele and Dr Ronchevic to the North Staffordshire Hospital at Keele University for a 3 month period of training in the most up to date management of sick children including training in both neonatal and paediatric intensive care. This training will begin on the 1 July and continue until the 1 October. On their return to Mostar both the hospital in West Mostar and the Maternal Child Health Centre will have been equipped ready for the provision of high dependency and intensive care. The equipment that is available for training in the North Staffordshire Hospital will be identical to that used in establishing the paediatric and neonatal intensive care and high dependency beds in Mostar.

Since the sabbatical of Dr Vele will leave East Mostar without a senior paediatrician, a consultant from the United Kingdom together with an appropriate interpreter will work in East Mostar during Dr Vele's absence. He/she will also during this time supervise and establish the equipment outlined in Tables 1 and 2 in suitable areas of the West Mostar Hospital and East Mostar Maternal and Child Health Centre.

In the West Mostar Hospital some special building and electrical works will be required. It will also be necessary to provide adequate electrical sockets and wall mounted pressured oxygen air and suction equipment (see Table 1). Hospital engineers from West Mostar will assist in providing these structural changes and for installing all of the equipment. The UK consultant paediatrician will also assist Professor Simunovic from the Ministry of Health in Mostar in reestablishing the

centre for continuing medical education in Mostar in order to provide a functioning training service for all doctors in the Mostar region.

The visiting UK consultant will also ensure that the equipment for high dependency care in East Mostar is adequately supported by sufficient electrical sockets and sufficient wall mounted gas and suction supplies.

3. Appropriate books and manuals describing both paediatric and neonatal intensive care and paediatric and infant high dependency care will be translated into the local language and installed in the high dependency unit and intensive care areas.

4. Running costs and supplies for all 6 beds in Mostar will be provided for a 1 year period. Thereafter it will be the responsibility of the Regional Medical Centres (see enclosed agreements) to continue to support the service provided for very sick infants and children in the region.

5. Mr Hans Koshnick the former EU Administrator in Mostar has agreed to contribute £100,000 to this project. The EU Administration have already provided 20,000 DM towards the training of the two childrens' doctors from Mostar.

TABLE 1. West Mostar.

1. For 2 Paediatric Intensive Care Beds.

Two Siemens 900C Volume/Time cycled-pressure limited ventilators	= £18667
Two Fisher Packell humidifiers	= £1600
Two platform incubators including weighing facilities, adjustable levels, heater and lighting modules.	= £15500
Four syringe pumps	= £7200
Four infusion pumps	= £8380
Two intensive care beds	= £1720

Two Merlin multi-channel monitoring systems, including ECG,
 O2 saturation, breathing movements, non-invasive blood pressure,
 2 invasive pressure channels, 2 temperatures (skin and rectal),
 pulse waveforms from pulse oximeter. = £21092

TOTAL = £74159

Together with the required disposables for the above and for peritoneal dialysis, chest drain management, patient controlled analgesia (£35,000/2beds/yr).

2. For 2 neonatal intensive care beds.

Two Time cycled-Pressure limited ventilators (SLE2000) = £14400
 Two Fisher-Packell humidifiers = £1,600
 Two platform incubators including weighing facilities,
 adjustable levels, UV light supply for phototherapy, heater and
 lighting modules. = £15500
 Four syringe pumps = £7200
 Four infusion pumps = £8380
 Two Merlin multi-channel monitoring systems, including ECG,
 O2 saturation, breathing movements, non-invasive blood pressure,
 Two invasive pressure channels, 2 temperatures (skin and rectal),
 pulse waveforms from pulse oximeter. = £21092
 One cold light = £1,500

TOTAL = £68672

Together with the required disposables (£30,000/2 beds/year) for the above and for chest drain management.

TOTAL COST OF EQUIPMENT = £142,831
TOTAL COST OF SUPPLIES/YR = £65,000

Together with costs of modifying structure of West Mostar Hospital to provide electrical sockets and wall gases and suction (£10,000/4beds).

TOTAL COST OF ELECTRICAL AND GAS INSTALLATION =£10,000
(estimate)

OVERALL COSTS FOR WEST MOSTAR = £ 217,831

TABLE 2 East Mostar.

1. For 1 Paediatric High dependency Care Bed.

One Siemens 900C Volume/Time cycled-pressure limited ventilator = £9333
 One Fisher Packell humidifier. = £800
 One platform incubator including,
 adjustable levels, heater and lighting modules. = £7750
 Two syringe pumps = £3600
 Two infusion pumps = £4190
 One Merlin multi-channel monitoring systems, including ECG,
 O2 saturation, breathing movements, non-invasive blood pressure,
 2 temperatures (skin and rectal),

pulse waveforms from pulse oximeter. = £7210

TOTAL =£32883

Together with the required disposables for the above (£12,000/yr).

2. For 1 neonatal high dependency care bed.

One Time cycled-Pressure limited ventilator (SLE)	= £7200
One Fisher-Packell humidifier	= £800
One platform incubator including adjustable levels, UV light supply for phototherapy, heater and lighting modules.	= £7750
Two syringe pumps	= £3600
Two infusion pumps	= £4190
One Merlin multi-channel monitoring systems, including ECG, O2 saturation, breathing movements, non-invasive blood pressure, 2 temperatures (skin and rectal), pulse waveforms from pulse oximeter.	= £7210
One cold light	= £1,500

TOTAL =£32250

Together with the required disposables (£12,000/year) for the above and for chest drain management.

TOTAL COST OF EQUIPMENT = £65,133
TOTAL COST of SUPPLIES/YR = £24,000

Together with costs of modifying structure of East Mostar Maternal Child Health Centre to provide electrical sockets and wall gases and suction (£5,000/2beds).

TOTAL COST OF ELECTRICAL AND GAS INSTALLATION =£5,000

OVERALL COSTS FOR EAST MOSTAR = £94,133

TOTAL COST OF PROJECT FOR MOSTAR = £311,964