



# Mongolian Emergency Service Hospital Hygiene Project

MeshHp.mn

**Prof. Dr. W. Popp**  
**Hospital Hygiene**  
**University Clinics of Essen**  
**Germany**

## **Report of the 11<sup>th</sup> visit to Ulaanbaatar March, 2014**

### **Participants**

Prof. Dr. Walter Popp, University Clinics Essen (1 – 8 March)  
Michael Roszburg, MVZ Dr.Eberhard u. Partner – Dortmund (1 – 8 March)  
Jörg Spors, Fire Brigade Essen (5 – 10 March)  
Arnd Rensmann, Fire Brigade Essen (5 – 10 March)

### **Hospitals**

#### Central blood bank:

Well equipped. Testing all blood products against HepB, HepC, HIV, Syphilis.  
HepB/C and HIV are tested by Elisa and if the result is negative also PCR will follow.  
They will get a new building.

#### Second Central Hospital (SCHM):

We were told that there are wound infections, but no microbiologic data available;  
diagnosis is only done by visual inspection. We hinted that microbiology is a MUST  
and a basic for every infection.

In the CSSD, there is a new ethylene oxide sterilizer which has been given by a  
doctor. They want to use it for microsurgery because of the optics, but no one  
taught them how to use it. They had a first bottle of ethylene oxide and that was  
empty after one sterilization – this means that a lot might have gone in the air and  
staff might have had a high exposure to this carcinogen! We hinted that ethylene  
oxide is extremely carcinogenic and they should not start with this sort of sterilization  
at all. If they use it, they urgently have to use it in a cabin with a very good ventilation  
and also letting out ethylene oxide by a pipe ending far away from the outside wall.  
There is a new metering unit for disinfectants in CSSD which has been installed.  
There is no producer name on it (might be cheap product from China?) and no one  
introduced how to use it. If usage is possible at all, it might make sense to use it for  
instrument disinfectants (because in CSSD they are used in bigger quantities than  
those for surfaces).

We gave some advise how to renovate the CSSD and also hinted that this might be done in Health 5 project. Also we gave some advise for a better situation of microbiologic lab in some other rooms.

During our visit there, we also had a talk with Dr Bayarmaa from MoH.

UB State Dental Center of Mongolia:

Very clean, very good organized, very good structured.

Staff protection with gloves and masks for all staff working on patients:



In therapy room, the instruments are pre cleaned and disinfected, also dried there. Many instruments then go in CSSD. There is manual cleaning and disinfection and a very clear way of the instruments, also printed on the wall:



First they use hydrogen peroxide, then cleaning in ultrasound, rinsing with distilled water, drying, wrapping and sterilization. They have two autoclaves and make BD-Tests (given from MedClean) every some months only. They use chemical indicators, but no bioindicators.

Good documentation.

They have an old sterilizer from Russia and a newer one, both without documentation.

Everything is stored in UV cupboards, this idea came from Russia 20 years ago.

There is a new order that sterilized instruments in paper plastic wrap cannot longer be stored than one week. Then they have to be reprocessed again. They will build a new building and the plan is ready. They might get around 70% new furniture and equipment.

The Center will become a member of MeshHp project.

Regarding the new building, we recommend a centralized CSSD according to Western/German standards. That means no pre-cleaning in therapy rooms, but dry transport of used (also bloody) instruments to CSSD. All cleaning and disinfection has to be done there. Cleaning and disinfection best of all in washer-disinfectors (eg MMM – first cleaning, after that disinfection with 90°C water, after that drying, all done in machine). If the instruments are very dirty, they can be pre-cleaned (in CSSD) in ultrasound. Of course, new CSSD should get new containers, new wrapping material, new autoclaves, new washer disinfectors (also with cards for very small dental instruments).

### 1<sup>st</sup> Maternity Hospital:

They moved in the new building last year. The building has very big room and halls, also new beds. We saw the lab (big rooms):



In neonatology unit, there are births from 30<sup>th</sup> week up, there is only one ventilation machine available:



Dispensers with alcoholic handrub are available, also some few from Ecolab, but not everywhere.

Very new laundry and CSSD.

The hospital will become member of MeshHp project.

### 2<sup>nd</sup> Maternity Hospital:

This is very clean. A lot of gel hand rub is everywhere in dispensers and the staff is doing hand rub all the time. This proves that good organization and structure is possible, also for hand hygiene, also with low budgets.



Everything is structured very well, rooms are empty, instruments are stored very well in cupboards and boxes.



An air disinfection (spraying) is done every 2 hours which is not necessary in our opinion.



The hospital will become a member of MeshHp project.

#### Chingeldej District Hospital:

One of two ambulances has broken just now, perhaps soon a new building will be built.

Also a new hospital is planned with up to 15 floors (you will need a lot of elevators!!). In December endoscopy unit opened, doing gastroscopy and coloscopy (without sedation). Pre cleaning is done manually. There is one washer disinfector (working with aldehydes) available from Korea. We were asked whether they can clean the gastroscopes and coloscopes in the only washer disinfector: it is not optimal but they can clean if they are sure that the washer disinfector is working.

We were asked for calculation of costs for 3-color-system in cleaning and we will make some example in conclusions (down).

Visit to ICU for adults and pediatrics: The hand hygiene solution is still produced in own pharmacy because there is no budget. It seems that syringes are filled and after that filled from a second bottle which might make problems because of mixing. Also there is no disinfection of the membrane of the bottle before needle stick in it.

Laundry is ready now, very small, but working (well planned by Dr Uka).

The lab is renovated and looks rather well and clean. The working bench is still not working.

The CSSD is working now. It was planned according to Dr Uka's plans and it is a good compromise according to the small space available:



Bayangol district hospital:

Every year 0 nosocomial infections are reported. There seem to be problems how to detect them.

During the next visit in April, Prof Walter will visit the new building of the hospital. The ICU and the whole building for inpatients is in very bad condition.

Intermed Hospital (MCS):

We visited the new hospital and were lead around by Dr Bat-Erdene, vice-director. It was planned and done by Vamed from Austria. The whole construction and equipment is very similar to Germany, very well done, very good equipment in CSSD, endoscopy, laundry, kitchen:



Very modern ICU and also operation rooms (with laminar air flow ceilings).

**Emergency Service**

Jörg and Arnd were doing training in Emergency Service all the time:



Jörg brought a number of blood glucose meters.

## Training and presentations

Michael Roßburg gave a presentation about **microbiology** and antibiotic resistance in 2<sup>nd</sup> Central Hospital.

## Meetings

There was a meeting in the **MoH**, eg with Dr. Amarjargal. At the end both sides agreed that MeshHp should go on in parallel to Health 5. Prof Walter and Dr Amarjargal will stay in contact regarding the extension of MeshHp. Also it will be possible to include secondary and first level hospitals in UB in the project. MoH will clarify whether FCHM will stay part of the project or not, SCHM will stay anyway.

Meeting with Dr Batbayar, NTP manager, in **NCCD**. We introduced our idea of an exchange of doctors in both directions (eg for 2 or 4 weeks each) to get training in infection control. We will stay in contact regarding that.

There was a meeting with **UB City Health Department**, eg Dr. Tsogbadrah and Dr Tuul. There was agreement that cooperation will go on in any case. UB City Health Department is thinking about centralization of labs, e.g. in 1<sup>st</sup> Maternity Hospital. It was confirmed that since 2012 hospital staff is vaccinated against HepB.

Also there was a meeting with Dr Tunga from **ADB** and staff from NCCD regarding Health 5 project. This meeting was very fruitful and is documented in a separate minutes of the meeting. In short, the Consultant Company might come in May. Prof Walter will have 1-2 meetings with them during stay in June, additionally in September. The April trip to Eastern aimags is fixed.

There will be a trip in October to Essen within Health 5 project.

There was a meeting with new **German Ambassador** Mr Thiedemann in German Embassy. It is intended to announce the 2 planned symposia in June and September as part of 40 Years diplomatic relationship anniversary. The ambassador is supporting the prolongation of MeshHp project.

There were 2 meetings with **Monos group** regarding ideas of cooperation between Monos and Lab Eberhard.

There were 2 meetings with **MedClean company** regarding work of MedClean.

## Social life

We enjoyed very much the eagle festival outside of UB:



Michael got a very nice deel from our friends from Monos:



## Conclusions and tasks:

**MeshHp project should go** on in parallel to Health 5 project. It is intended that this is signed during next consultation of both sides, eg when Mongolian Minister of Health is visiting Germany in 2014.

**1<sup>st</sup> and 2<sup>nd</sup> Maternity hospitals** and **UB State Dental Center of Mongolia** are from now on **pilot units** of MeshHp project. MoH will clarify whether FCHM is out of pilot units now. **SCHM and UB City Emergency Service** will **stay pilot units** as well as **Chingeldej District Hospital**.

Also few primary and secondary level hospitals from UB can become pilot units after common decision making of MoH and German side (and UB City Health Department if needed).



Enough dispensers, alcoholic handrub and use of it seems not only depend on budget but also is possible if it is really wanted, as can be seen in 2<sup>nd</sup> Maternity Hospital.

We recommend:

- An ongoing air disinfection (spraying) seems not necessary during routine daywork. So we do not see a need for that in 2<sup>nd</sup> Maternity Hospital.
- All **autoclaves** should be tested daily by Bowie-Dick-test and with **bioindicators every 400 charges or every half year**. Note: a chemical indicator (changing color) is not a Bowie-Dick-test nor a bioindicator.
- There is no need to store wrapped sterile products in UV-light – closed cupboards is enough.
- We recommend **NOT to buy or use ethylene oxide sterilisers**. If plasma sterilisers are too expensive, then formaldehyde sterilisers are less toxic than ethylene oxide and much cheaper. It would be best if working with extremely carcinogenic substances in healthcare sector (like ethylene oxide), state should regulate this, eg mandatory training. State inspections should have a critical eye on this.
- We do not see a rational why sterile instruments which are wrapped can only be stored for one week. In Germany, they can be stored up to 6 months if they are stored in closed cupboards.

The situation about statistics of nosocomial infection is still not good. A mandatory reporting does not make sense if hospitals who are truly reporting will get punished. Also it must be clear that in **every (nosocomial) infection a microbiologic clarification is absolutely necessary**: which bacteria, which resistance against antibiotics. This is also the case for wound infections!

If new machines, instruments, **equipment** are bought, it **MUST include**:

- **Installation** so that it works,
- **training and explaining** how to work with it,
- regulations about **maintenance** (once a year? Who is available in case of repair? Who will pay for that?),
- this also means that a **budget** is available in following years to pay maintenance and (if necessary) chemicals, bioindicators and similar.

Regarding the **3-color-cleaning system**, we would propose to make a calculation like that (example):

We presume a hospital with 100 beds, all in 3 bed rooms, that means 33 patient rooms (all with sanitary room). You have to decide after how many rooms you want to change the cleaning rag. Eg you decide to change after each room – this means 3 rag per room, so for all patient rooms 100 rags. Also you need rags (mop) for the floor, at least one for patient room, one for sanitary room. In our presumption, that means around 60 mops. Additionally, you may have social room, clean room, dirty room, doctor's room, nurses room on ward, also hall, maybe public toilets. So you might need additionally rags and mops, maybe 20 rags, 10 mops. That means at a whole 120 rags and 80 mops (for floor). If your laundry is washing in the afternoon, you might get all back on the same day (?), then this might (hopefully) work. If laundry is most of all working in morning, you need at least double: 240 rags, 160 mops. If laundry is more far away, you need at least threefold: 400 rags, 250 mops.

This is a minimum. Better calculate more: Laundry might not work so fast, there might be some problem in transport, rags are lost and so on.

**Next visits:**

- 12-23 April Prof Walter going to UB, going to eastern aimags with ADB in Health 5 project.
- 23 April – 23 May Dr Muugi coming to fire brigade Essen within MeshHp project.
- 15-21 June visit to UB. Prof Ali is intending to make liver symposium together with Dr Davaadorj. Other participants Jörg, Arnd, Dr Birgit, Dr Sowa, perhaps Mrs Köster.
- 13-20 September visit to UB, including dean of medicine faculty of University of Essen, Prof Buer. Also the next hygiene symposium might be done then.
- October group coming to Essen University Clinics within Health 5 project.
- November (or other time?) group coming to Essen University Clinics within MeshHp project.
- Both symposia (June, September) will be done as part of 40 years diplomatic partnership anniversary.

Prof Walter, 21 March 2014