



Mongolian Emergency Service Hospital Hygiene Project

MeshHp.mn

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Report of the visit to Ulaanbaatar 10 – 17 March, 2022

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This was the first visit since over 2 years because nothing was possible during the Corona pandemic for 2 years.

Also the airline had to be changed from Aeroflot to Turkish Airlines because of the Ukraine war.

It was very nice to meet all the old friends in UB!

Hospitals

We had a meeting with German ambassador Mr Rosenberg and visited with him **Hospital No 2**. We met the General director Dr Erdenebulgan and saw the nuclear medicine department and the new endoscopy department. A lot of ideas were implemented there which were brought from the visits to Essen, eg room for staff breaks:



After that we visited – also together with German ambassador – **Emergency Service 103**. The new director is Dr Ariunbold whom we know since 2011. Essen city started a project before the pandemic to support and train 103. Unfortunately, there is a delay because of the pandemic, but a container with medical products (mechanical

ventilation, defibrillator and so on) had arrived in the meantime and the products could be handed over by ambassador Mr Rosenberg:



We visited **Hospital No 4** and talked with director and colleagues. We saw the house under construction years ago. Finally, a mining company took over and is now opening a private hospital. Because of the name (No 4) they can care for patients from whole Mongolia. The work is just starting now there. There is a lot of space and all patient rooms (4-6 beds) have an own toilet and shower – very new for Mongolia. Hand disinfectants are at every bed:



Like in all other hospitals there were disinfection sleuces at the entrance:



Noone could tell us which disinfectant is sprayed there because refilling is done by the manufacturer of the sleuces. It must have been a big deal for the manufacturer – and does not make any sense.

In the reprocessing area everything is still done manually:



This is very oldfashioned. As there are not so many instruments to clean I would recommend to buy perhaps 3 small washer disinfectors (eg from Melag, Germany) so that they are rather fast full and can work. There is a plasma steriliser (for ventilation tubes) and 2 autoclaves. Also here I would recommend to buy an additional small autoclave (eg also from Melag) which is filled rather fast so that there is little time delay (also could be used for dental unit – see below).

In the dental unit we were told that they do not reprocess hand and angle pieces. This must be changed urgently because they have channels and can transmit eg hepatitis.

We visited **NCCD** and met the new Director Dr Bilegtsaikhan and Deputy Director Dr Tschinbayar. They see big problems re multiresistant bacteria. We explained our training program with Mongolian Nurses Association (MNA) and they will support it. We had a visit to the lab and the very new and modern vaccine stock house:



Also we visited the Covid ICU which is in a very old building with a lot of wood and textiles which cannot be disinfected.

Urine bags should hang and not lay on the floor because there they can be contaminated:



Taking on and off protection clothes seems very extensive and might be a little reduced as main transmission way is by the air. To me it seems that nearly all staff wore the FFP2 (N95) masks with leakage. We saw and still have the same problem in Germany that up to 70 % of staff wear the FFP2 masks with leakage so that they may be not protected. The only way is to have different mask types for different faces and that staff is trained to correctly wear the masks. You may find our Dr Brähler video about fit test for FFP2 masks:

https://www.youtube.com/watch?v=sOJ0Var_TSs

We had a visit to **Hospital No 1** and met the General director Dr Khishigjargal who knew our project. We were told that antibodies are measured now after full hepatitis vaccination. Also we met Dr Bolor who is speaking very good German and working in surgery department. She has a cooperation with Dr Allemeyer in Germany re colo-recto-surgery.



We were told, also from other hospitals, that financing completely changed: It seems it is something like the German DRG system with money for each patient depending to what has been done. And money is coming from health insurance now.

We had a short visit to **City University** and talked with Mrs Nyamsuren, the head of MNA. Now we have some idea of a hygiene course for nurses which might start in autumn 2022.

There was a visit to **MedClean company**, headed by Dr Gantumur. They implemented 3 rooms there for training in reprocessing of medical products.

Meetings

We had a meeting with **Mr Ariunbold, head of Emergency Service 103**. He told that financing has changed and everything is paid by health insurance. This means that 103 is getting more money and could raise the salaries. Each patient has to be documented and will bring money. At the moment they plan to give an iPad to each emergency car so that they can document instantly.

Also 15 primary health care centers are now belonging to 103. Mr Ariunbold is planning to make a project with German partners re these.

We met **Mrs Schmidt-Corsitto from Misheel Kids Foundation**. She is living in UB and driving in sums several times each year to make dental practice there. She said that in 100 kids only one has no dental damage. We will stay in contact.

There was a **MeshHp meeting** and Dr Ariunbold was designated – for the Mongolian side - as head of MeshHp and Dr. Bolor as deputy head. New members of MeshHp are MNA, Songinokharkhan district hospital, Nalaikh district hospital and Mongolian Association of Family Medicine Specialists.

Finally, we had the chance to meet the **Health Minister Dr Enkhbold**:



We shortly explained our work in the last 12 years and the good development of hygiene in Mongolian healthcare system. Also we hinted that there is still no plan how to handle healthcare workers who are hepatitis virus carriers (up to 40 % in some departments) who might infect patients. As in our report to the BMG project we recommend the German way and we include the relevant part of the report at the end of this document.

Social contacts

Of course, there were several private dinners, including karaoke.

We visited the **Eagle festival** near UB.

With some staff members from Emergency Service we went out to **Terelj** for one day including dog sledding, horse riding, motozikle riding, ice climbing and num sum (archery).

Next steps

Prof. Popp will be again in UB from 12 to 19 May, 2022.

Jörg Spors might come perhaps in July, 2022.

The hygiene course with MNA will be in autumn 2022.

There will be no symposium this year – or only an online one.

A group of MNA nurses might come to Germany in 2023.

Walter Popp, 7 April, 2022

Part of report from September, 2020 – re how to handle HCWs who are hepatitis virus carriers:



Dealing with hepatitis positive healthcare workers

According to official figures, 83 % of healthcare workers were vaccinated against hepatitis B in 2018. As far as we know, Mongolia has not yet addressed the issue of how to deal with hepatitis-positive healthcare workers. The solution, which is quite conceivable in Mongolia - of imposing a professional ban on all respective employees - should not be sought.

We therefore prefer a model that has been established in Germany for many years and which is briefly presented below:

- Regular care must be provided by an occupational physician / company doctor, who should also be qualified as a specialist if possible.
- He/she also monitors the HBV / HCV serostatus of all healthcare workers.
- During the initial examination before starting work, a test is carried out for HBsAg, anti-HBc-IgG (or total antibodies) and anti-HBs as well as anti-HCV.
- Employees who are clearly and specifically exclusively anti-HBc positive are considered immune.
- If there is no immunity to HBV, an active hepatitis B vaccination should be carried out.
- If there is insufficient immunity afterwards (i.e. anti-HBs has never reached 100 IU/L), further active immunizations, if necessary with other products, should be carried out. Vaccinations can also be given with a double dose (in parallel in both upper arms). There are also vaccines with increased antigen concentration, e.g. for dialysis patients.
- The employees must be regularly instructed about occupational safety and safe working (Glebe et al. 2020, AWMF 2018). At the moment we have doubts also to recommend the introduction of so-called safe work equipment, as we do with us, also for reasons of cost.

The following table shows the transmission risks for hepatitis in the medical professions and their respective risk:

Transmission risk	Activities	Medical areas
High	Operate in a cramped operating area Operate with interrupted visual inspection Operation with manual guidance of needles Long operation time Fingers near sharp instruments or sharp pieces of tissue (fragments of bone) Closure sternotomy Knot of threads	Gynecology Cardio-thoracic surgery Surgical orthopedics Trauma surgery Maxillofacial surgery Dentistry
Low	Laparoscopic interventions Deep endoscopic interventions	General surgery Internal Medicine
No	Administrative or organizational activities Ward activity	Administration Patient admission Rounds

According to Glebe et al. 2020

For HBV, 500 transmissions worldwide by at least 52 employees in the healthcare system have been documented to date. Practically all of them had HBV DNA concentrations above 20,000 IU / L (corresponding to 100,000 genomes HBV / L), predominantly above 2,000,000 IU / L. The titers are particularly high in HBdAg-positives (who are very often in Mongolia).

In Germany, employability is assessed according to the following table (Glebe et al. 2020):

Table 2. Transmission risk and requirement of occupational restrictions in chronically HBV-infected HCWs depending on the viraemia (genome concentration in serum)

	HBV		
Genome concentration [IU/mL]	Below 200	200 until 20.000	Over 20.000
Transmission probability	No known	Low	High
Measures / restrictions	No restrictions	Only activities with low transmission risks (see table 1) Preventive measures / individual decision by the commission	No activities with transmission risks

According to Glebe et al. 2020

For values between 200 and 20,000 IU / L, it is advisable to let an in-house commission decide. Transmissions were found mainly in thoracic surgeons, oral surgeons and gynecologists, with sharp-edged wires or difficult sewing situations (Glebe et al. 2020).

For hepatitis C, the following recommendations are given:

Table 3. Risk of transmission and requirement of occupational restrictions in chronically HCV-infected HCWs depending on the viraemia (genome equivalents in serum)

	HCV		
Genome equivalents [IU/mL]	Below 250	250 until 25.000	Over 25.000
Transmission probability	No known	Low	High
Measures / restrictions	No restrictions	Only activities with low transmission risks (see table 1) Preventive measures / individual decision by the commission	No activities with transmission risks

According to Glebe et al. 2020

In the case of a titer between 250 and 25,000 IU / L (corresponding to 1,000 to 100,000 genome equivalents) a committee should decide.

At least the following persons are represented on the **commission** in Germany:

- Medical officer,
- Company doctor,
- Hospital hygienist, an infectiologist, if necessary the virologist,
- Head of the respective department,
- Medical director or nursing director (Glebe et al. 2020).

Regular controls should also be carried out:

Table 4. Recommended check-ups in the case of acute HBV / HCV infections and resumption of activities that are prone to transmission		
	HBV	HVC
Serum controls	HBV-DNA quantitative: - Every 3 months as long as HBV DNA is detectable - Every 6 months as long as HBsAg can be detected in the case of undetectable HBV-DNA HBsAg and anti-HBs-antibody: - Every 6 months if HBV DNA can no longer be detected - Every 12 months after HBsAG loss or seroconversion	HCV-RNA quantitative: - Every 3 months as long as viraemia can be detected
After end of a therapy	If HBV DNA is still detectable, there is a risk of transmission according to the viral load (table 2) After HBsAG loss or seroconversion of HBsAg to anti-HBs antibodies, a stable remission can be assumed; there is a risk of reactivation, for example in the case of immunosuppression	If HCV-RNA cannot be detected 12 weeks after the end of therapy, a definitive healing can be assumed (reinfection possible!)
In acute phase	No activities with transmission risks	No activities with transmission risks
Resumption of activities with transmission risks during antiviral therapy	With stable serological results and below 20,000 IU / mL with restrictions (table 2) With stable serological results and below 200 IU / mL without restrictions (table 2)	250 until 25,000 IU / mL with restrictions (table 3) Below 250 UI / mL without restrictions (table 3)

According to Glebe et al. 2020

In addition, therapy should always be sought, which is now also possible and practiced in Mongolia. In principle, a comparable approach is recommended in Mongolia. However, a quality-assured virus titer determination must then also be possible so that decisions based on these concentrations can actually be made with certainty. Regular quality tests should be carried out for the laboratory methods used, preferably coordinated by the NCCD.