



Міністерство
оборони
України

Experience in Organizing an Underground Role 2

Capitan Dr Ievgenii Pryimachuk
Role 2 Facility

From 2014 to 2025



2014

From 2014 to 2025



2022

From 2014 to 2025



2023



Role 2 Challenges in Modern Warfare

- Safety of medical personnel and wounded service members (artillery shelling, precision-guided munitions, FPV drones)
 - Forward positioning of Role 2 Medical Treatment Facilities closer to the frontline
 - Prolonged delays or complete absence of medical evacuation
 - Lack of a developed network of medical facilities in proximity
 - to the frontline
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Site Selection Criteria for Role 2 Medical Treatment Facility

- **Protection:** Adequate cover against artillery and air strikes
- **Groundwater:** Location free from high groundwater levels
- **Accessibility:** Reliable access routes for transport and medical evacuation
- **Utilities:** Availability of essential communications and infrastructure

Electricity

Water supply

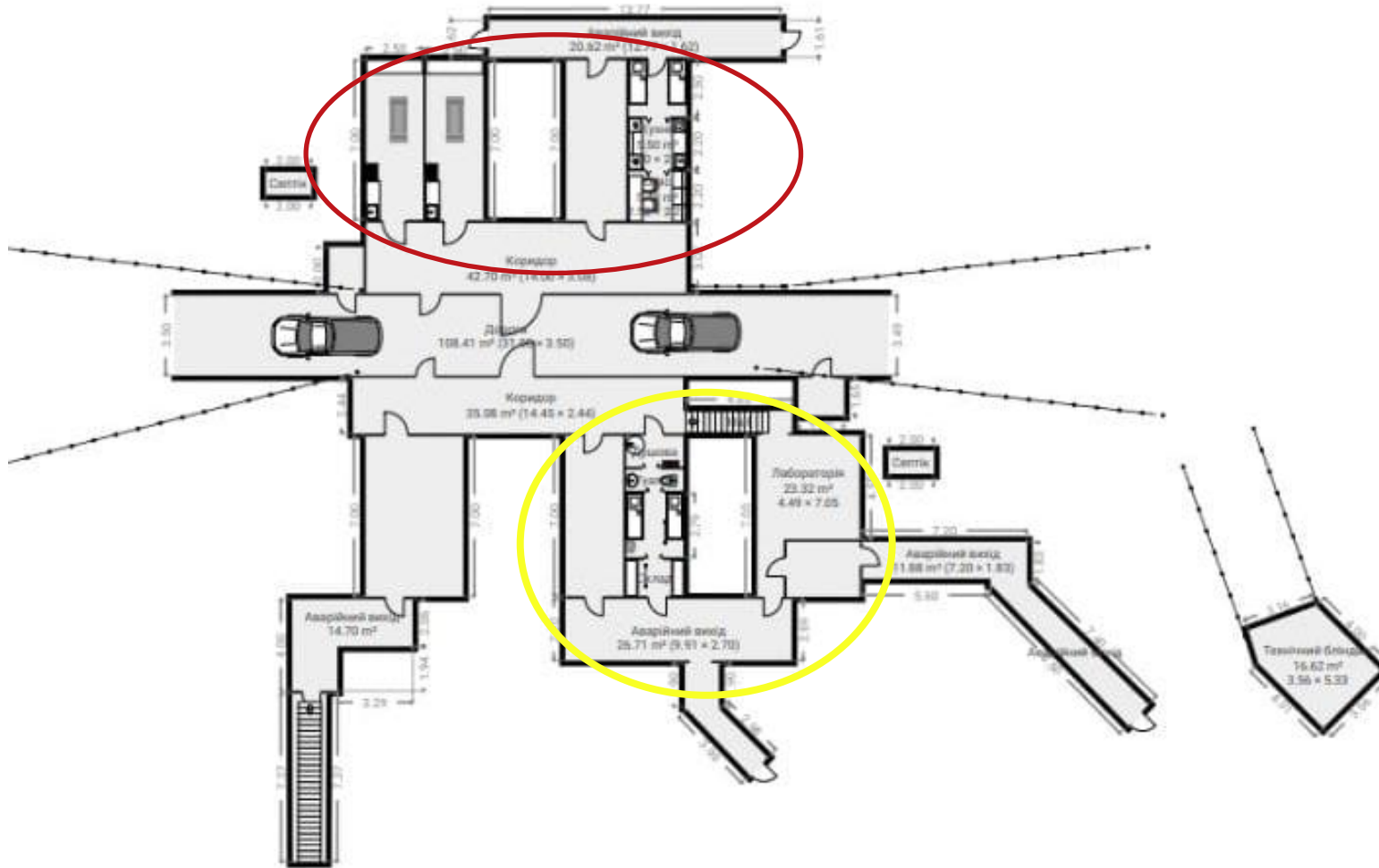
Ventilation



Construction











Technical Specifications

- **Construction timeline:** 4 months
- **Depth:** 8 m
- **Emergency exits:** 7 exits
- **Building materials:** 6 metallic barrels, diameter 2.5 m, Timber beams, 30 cm

Utilities: Water supply from dedicated well with filtration system, Sewage system, Ventilation and air-conditioning installed

Heating: Electric

Power supply: Main electrical grid plus two backup generators with ATS, total capacity 50 kW

Communications: Local Internet provider and Starlink; internal Wi-Fi network

Security measures:

Log/beam overhead protection up to 3.5 m

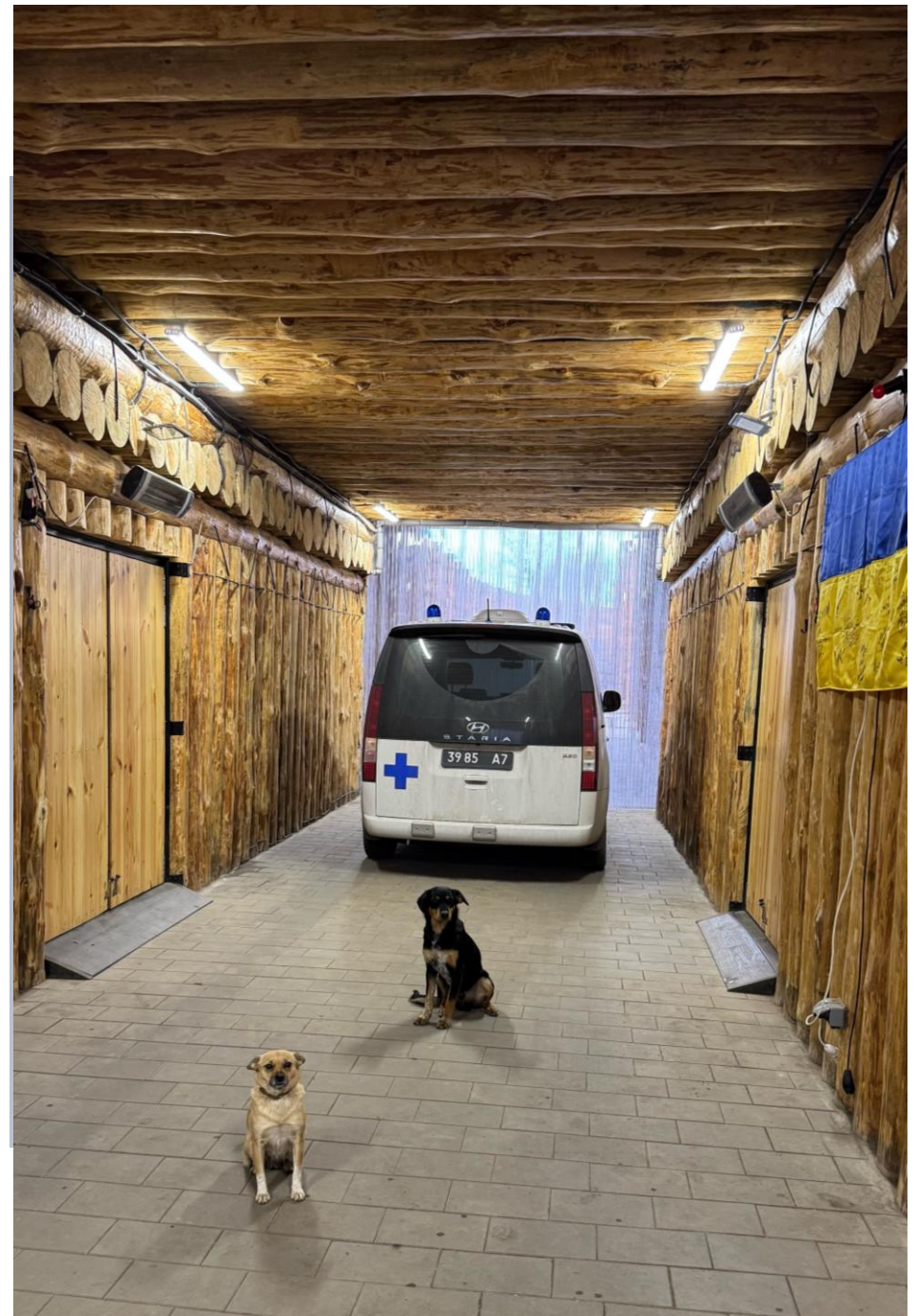
Electronic Warfare (EW) support and anti-drone netting

Continuous airspace monitoring

TRIAGE MODULE

Team:

- Triage Physician – 1
- Medical Technicians– 3





EMERGENCY MODULE (Resuscitation station)

Indications:

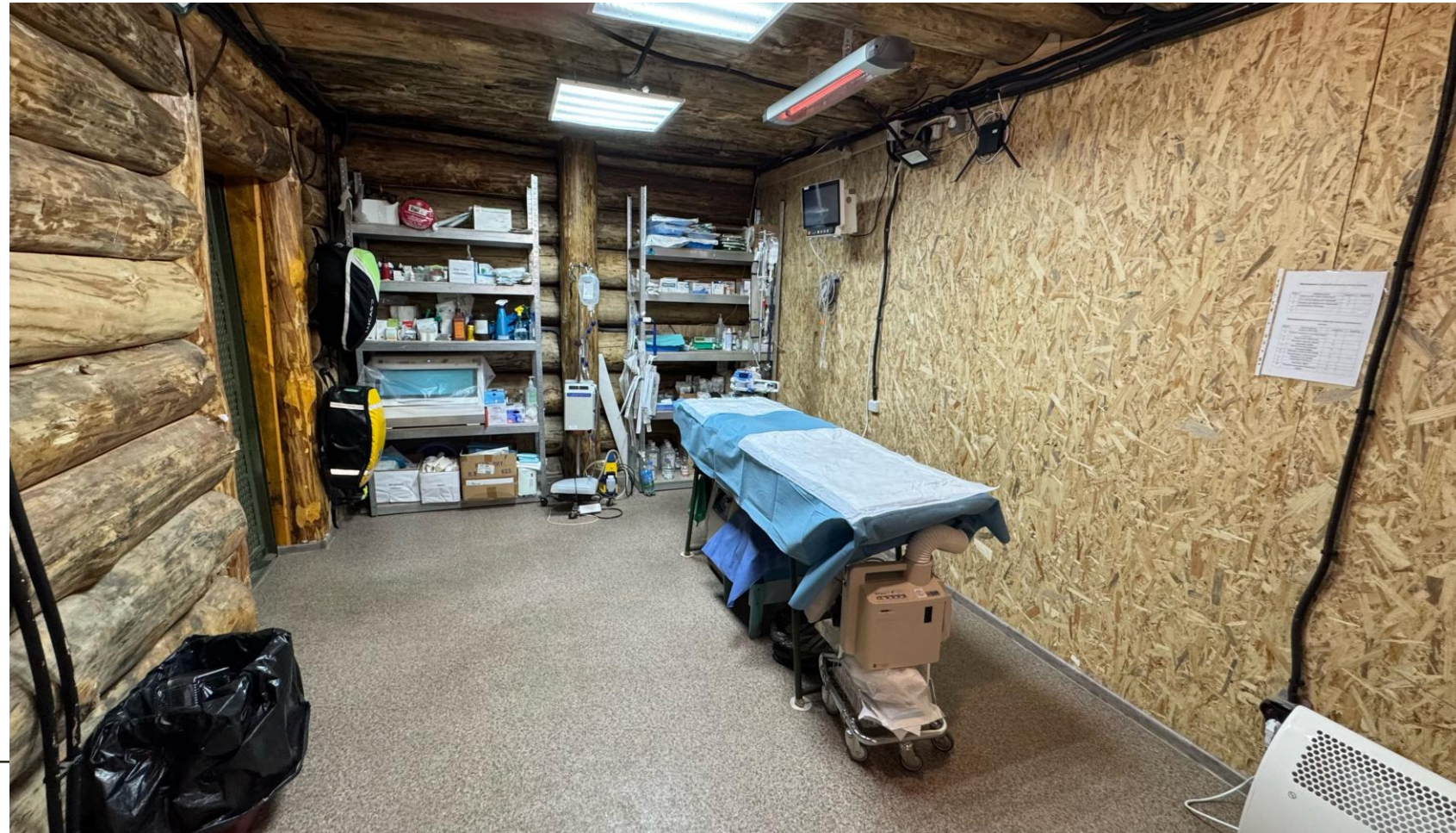
- Patients in cardiac arrest

Team:

- Anesthesiologist – 1
- Nurse Anesthetist – 2
- Medical Technicians – 1

Resources

- Resuscitation beds – 2



EMERGENCY MODULE

(Surgical part)

Indications:

- Patients who do not require general anesthesia for primary surgical debridement

Team

- Surgeon – 2
- Orthopedic Surgeon – 1
- Operating Room Nurse – 1
- Nurse – 1
- Medical Technicians – 2

Ресурси:

- OR Table - 3



SURGICAL MODULE

Indications:

- Patients who require Damage Control Resuscitation and Damage Control Surgery

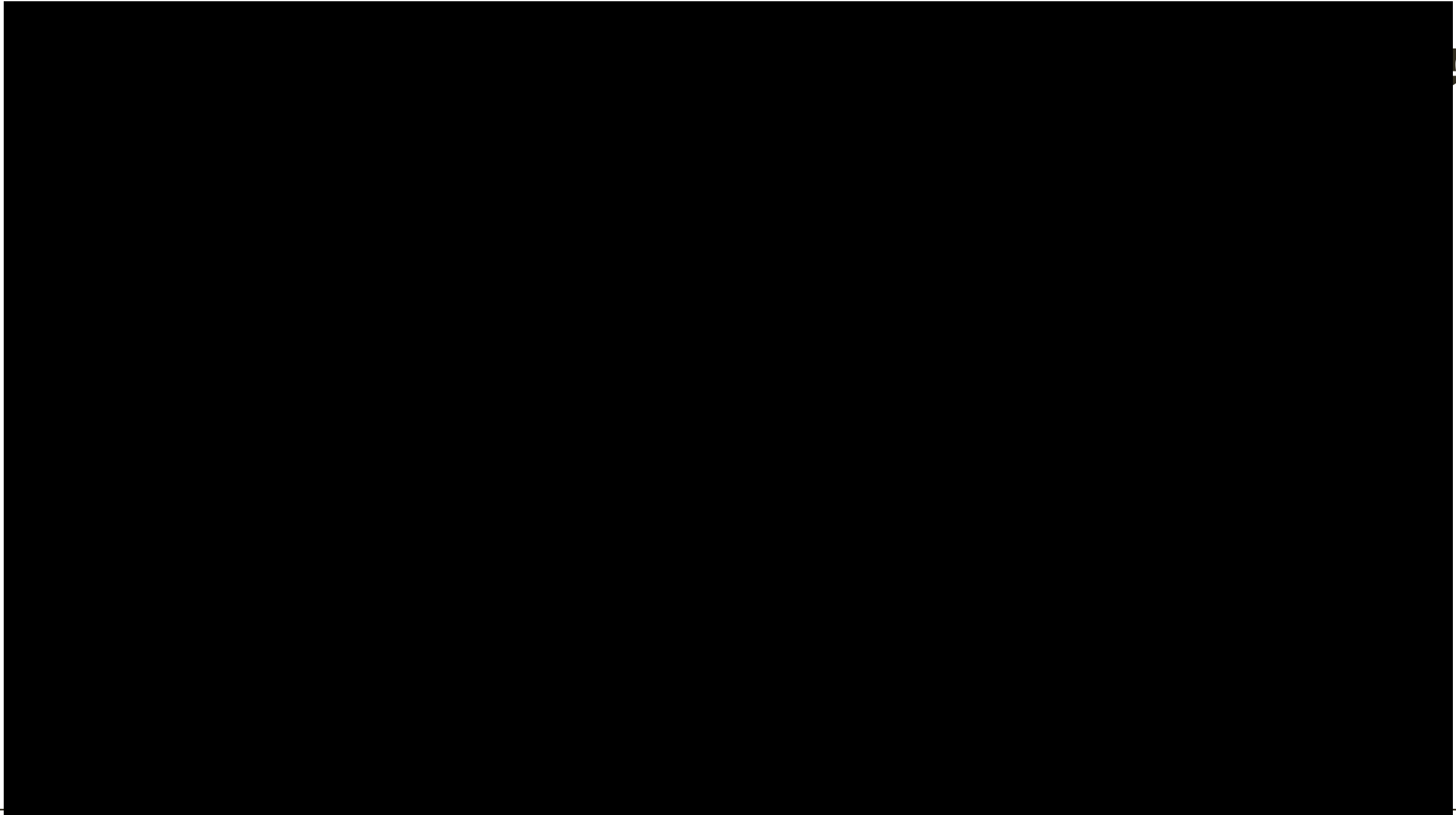
Team:

- Surgeon – 3
- Orthopedic Surgeon– 2
- Anesthesiologist – 2
- Operating Room Nurse – 2
- Nurse Anesthetist – 2
- Medical Technicians – 2

Resources:

- Operating Table – 2





Experience in Organizing an Underground Role 2

ICU

Indications:

- Provides care for patients in critical conditions who are waiting evacuation

Team:

- Anesthesiologist – 1
- Nurse Anesthetist – 1
- Medical Technician– 1

Resources:

- Resuscitation beds – 3 units



Diagnostic Module

Indications:

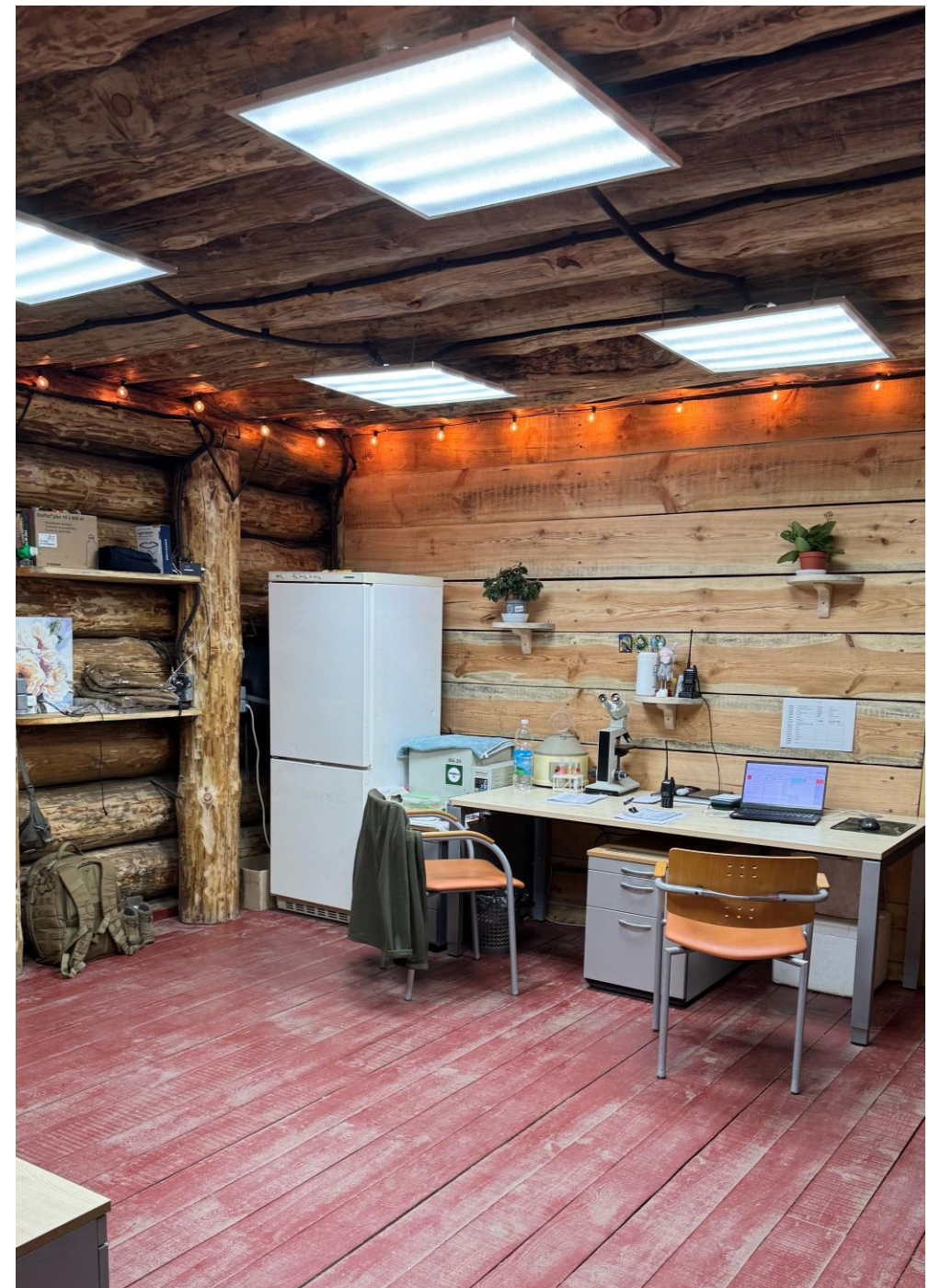
- Conducting laboratory investigations
- Performing additional diagnostic procedures
- Preparation of blood and blood products for transfusion
- Storage of blood and blood products

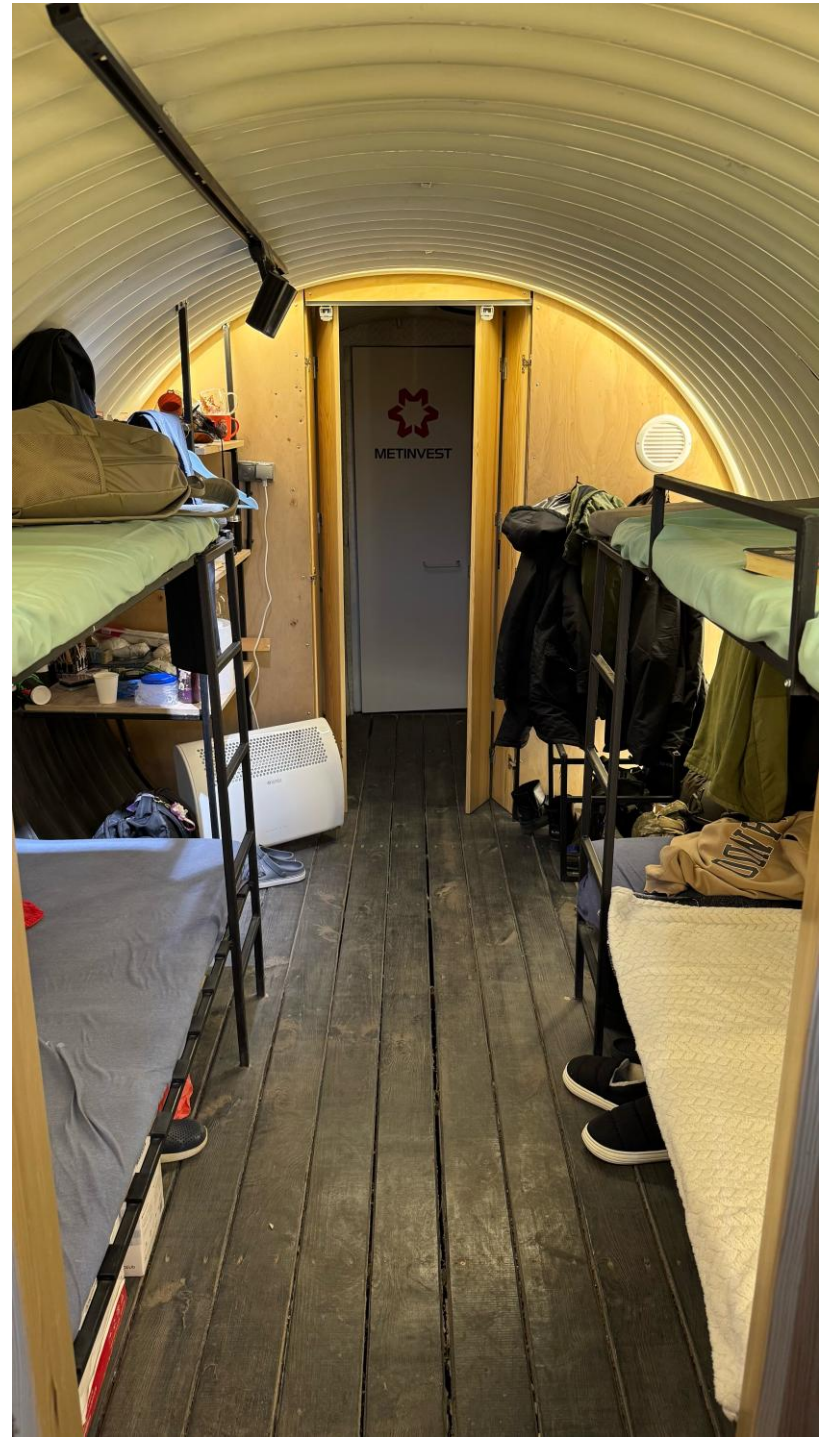
Team:

- Laboratory Technician – 1
- Radiology Technician – 1

Resources

- Hemoglobinometer – 1
 - Blood Gas Analyzer – 1
 - Glucometer – 1
 - Mobile X-ray Unit – 1
 - Telemedicine ECG Device – 1
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Challenges and Difficulties

- Limited space and resources
 - Difficulties in medical evacuation to Role 3
 - Psychological burden on personnel
 - Maintaining sanitary and hygienic standards
 - Shortage of medical equipment and pharmaceuticals
 - Personnel shortages
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Conclusions

- The underground format has proven its effectiveness
 - Key advantage: protection of both personnel and patients
 - Main limitations: restricted resources and psychological pressure
 - Necessity to develop standards for underground medical units
 - Importance of transferring this experience to future generations
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Thank you!