



# **Innovative renovation of the hospital ward**

**A joint statement of demand**

## A JOINT STATEMENT OF DEMAND

**Sucha Beskidzka Hospital** is planning to renovate a surgical ward and has identified a requirement for innovative renovation solutions for hospital wards, ensuring minimal difficulties in the operation of the entire unit, economic efficiency and sustainable development.

*This joint statement of demand describes the current situation and its limitations, why innovation is needed, and the outcomes required of new and alternative solutions.*

*In order to demonstrate a credible market demand for a solution that can deliver these outcomes, we are reaching out to other hospitals that may have a similar need and may, in the future, be interested in buying such a solution and / or collaborating in this initiative.*

*Via this document we are continuing to reach out to other healthcare providers who may be interested in new and innovative solutions to improve the joint replacement pathway. We therefore invite you to read this statement of demand and provide your feedback via a short survey. Alternatively get in touch with us via email. You can find the link to the survey and email contacts at the end of the document.*

*Please pass this document onto anyone you think would be interested.*

## **A chance for innovation**

Due to the fact that construction of new hospital units is extremely expensive, and the requirements for their functioning and social expectations are growing, renovations are becoming a necessary activity - periodically carried out by all hospitals. In our case, we want the renovation works to be not only a purpose in itself but also an important part of the organizational change contributing to the improved functioning of the hospital ward.

The hospital would like to achieve this by changing the spatial layout of the ward, introducing installations allowing the use of modern technologies, etc. As a result, the hospital would like to create opportunities that would allow for:

- obtaining better clinical results,
- improving the comfort of staying in the ward for patients and their visitors,
- improving the work comfort of staff,
- reducing the need for human labour.

We see an opportunity in this approach to implement innovative solutions, unused so far in the healthcare sector.

The renovation is planned for the period August 2022-July 2023.

The conducted research and interviews with representatives of other hospitals (see below) indicate that our needs are shared by many others.

## **What we want to achieve**

The goal of our activities is to meet the expectations of patients and staff. For this purpose, we conducted a nationwide survey in Poland (and received a total of 223 responses). The respondents (staff, patients and visitors) indicated six main areas for improvement. We also had group discussions with the following stakeholders: hospital directors, deputy technical directors, nurses, physicians. We also interviewed patients.

The results obtained in this way were verified by experts from abroad (especially members of the European Health Property Network) to obtain an additional perspective on the problems of the functioning of hospital wards, as well as the possibility of applying solutions for improving the comfort of ward operations in other countries. Our activities, including the analysis of the literature (see below), confirmed that other hospitals, not only in Poland, also face the problems identified in the survey results. The areas that require changes are:

There is considerable scope for improvement, below are some of the specific issues that need to be addressed:

- (1) Temperature and air quality,**
- (2) Patient rooms conditions and (3) resting places for patients,**
- (4) Equipment and quality of sanitary facilities,**
- (5) Facilitating communication,**
- (6) Ward lighting.**

We would like to obtain an improvement in the above areas by taking into account:

- the demographic structure of the population served,
- patient expectations,
- public funding requirements regarding the services provided,
- climate change,
- epidemiological threats.

**We would also like to move away from the "bed-centric" approach to the functioning of the ward. We would like patients not to feel attached to beds. We want to create conditions that encourage patients to be more active during their stay in the ward, to have a sense of living closer to home, and to create conditions to make it possible. Of course, in a way that is safe the patients.**

**The current situation in the wards in respect of the areas requiring improvement are:**

**(1) Temperature and air quality.** Overheating of patient rooms causes discomfort, especially acute for the elderly, in whom the mechanisms of heat dissipation are not as effective as in younger people. The elderly are usually immobilized or their mobility is severely restricted. This makes it difficult, or even impossible, for them to move to places with a more comfortable temperature. Most of the patient rooms in the hospital building in Sucha Beskidzka are located on the south side. These rooms are exposed to a large amount of solar radiation, which leads to their excessive heating, especially intense in the summer months.

Despite the measures taken so far to reduce the temperature in the hospital (awnings), there is still a need to improve the thermal and humidity comfort, air cleanliness and draft reduction while maintaining the supply of the right amount of air with optimal parameters for the functioning of the ward.

Standard solutions (air conditioners, fans) generate high operating costs and their effectiveness in summer can be low. They also have a negative impact both on the environment and the health of people in the ward.

Research conducted in Polish hospital wards (in 23 hospitals; measurements conducted: May-June and November-December 2016; comfort assessment by 916 patients) prove that the thermal environment conditions differ significantly from what is regarded as comfortable. Studies have shown that overheating of patient rooms occurs regardless of the season, which caused discomfort when patients are less active. The medical staff also pointed to the problem of ventilation and thermal environment in rooms where there are immobilized people and where it is difficult to ensure proper ventilation of the room. Low air humidity in patients' rooms is also a serious problem. [1]

*"High temperatures not only do not facilitate the recovery of patients, they also adversely affect the work of the staff, contributing to faster fatigue and reduced concentration."*

A nurse employed at the Hospital in Sucha Beskidzka

**(2) Conditions in patient rooms** and **(3) places of rest for patients** – hospital wards struggle with shortage of space, both individual and shared. The lack of individual space causes a lack of intimacy and lowers the patient's comfort of stay. There is also a lack of space that could be used as a place where patients and their visitors can stay together. In the wards, there is no access to the patient's bed from three sides, which makes it difficult to perform medical and care activities. Lack of space makes it difficult for staff to perform their duties, resulting in increased stress levels and lower work efficiency. We plan to reduce the number of beds per ward to 25, we want the place that we will obtain in this way to be able to improve the areas discussed, and to allow the creation of sanitary rooms in each of the patient rooms.

Currently, the hospital ward has multi-person rooms – designed for 2-3 hospitalized people (except for one post-operative room for 6 people and one room for 5 people, the space of which is larger compared to standard patient rooms). The rooms are approximately 13-19 m<sup>2</sup>. The corridor in the discussed ward is nearly 110 m<sup>2</sup>. There is another surgical ward adjacent to the surgery ward, i.e. the injury and orthopaedic department. There is a common entrance between these departments with a living room (20 m<sup>2</sup>). The location outside the ward doors means that the day room is not fully used due to its considerable distance from patient rooms.

Research has shown that the lack of a day room affects: the course of medical procedures, noise levels, the possibility of interaction between staff and visitors, and spatial congestion in sensitive areas that are frequently visited by staff (such as, for example, the nurses' station).

This can reduce the level of staff efficiency and patient satisfaction. The increased presence of patient visitors in the ward can lead to ward personnel disruption and reduced operational efficiency. The gathering of more patients and visitors in the corridor leads to unplanned interactions between staff and visitors, and spatial congestion, causing delays in staff work. Spaces for rest and recreation provide patients with the opportunity to leave their rooms, and thus take up physical activity and socialize with other people. [2]

*"The lack of space is the big challenge in old hospital buildings. Patients stay in cramped rooms for several people, with very limited individual space and a common place for all patients to spend their free time outside of examinations and treatments. Renovations are very costly. A significant change in the organization of rooms is not always possible, and if it does, it results in temporary deterioration of the ward's operations. And we cannot allow that."*

A doctor employed at the Hospital in Sucha Beskidzka

**(4) Equipment and quality of sanitary facilities** – current solutions are far from sufficient. Apart from a small number of such rooms, they are also not fully adapted to the needs of people with disabilities or with limited mobility / independent activity. The ward has generally accessible women's and men's bathrooms and a separate sanitary facility for the disabled. The total area of the above-mentioned rooms is approx. 35 m<sup>2</sup>. The ward has two rooms for patients with full sanitary facilities with an area of about 8 m<sup>2</sup>. The total space for sanitary and bathing rooms in the ward is approx. 43 m<sup>2</sup>, i.e. 7% of the area of the surgical ward.

A sanitary room, as an essential part of any living space, may have an impact on the patient's convalescence process in hospital conditions. Accessibility, usability and safety of the bathroom contribute to maintaining the patient's mobility and strengthening his/her independence. [3] Space, the availability of assistive equipment, such as a wheelchair or a lift, and the proper location and integrity of equipment, are the most critical issues related to the use of sanitary facilities. Failure to provide adequate space for proper patient and support staff movements, or difficulty manoeuvring assistive equipment, and inadequate equipment can compromise the safety of both patients and staff. Insufficient space and missing components therefore create a dangerous environment, increasing the risk of a fall or injury. [4]

*"After the necessary surgery, it is not so easy to use the sanitary facilities. Various movement limitations mean that what was not a problem before surgery, after surgery, is a big challenge, requiring the involvement of third parties. So it seems that toilets and bathrooms were designed by able-bodied people, without the opinion and participation of those who will use these rooms the most."*

Patient of the surgical ward of the Hospital in Sucha Beskidzka

(5) **Facilitating communication** – although our respondents referred mainly to the issue of free WIFI access, we believe that the currently used solutions hinder communication between staff and between staff and patients, and force the staff to perform routine activities that could be performed in a different way (without the participation of staff). Currently, there is no solution in the ward that would make the work of medical staff to some extent easier.

*"The staff feel the need to effectively organize the work of many areas of the ward's functioning. It seems that this efficiency and better organization can be achieved thanks to the implementation of technology that will make it easier for us to perform routine activities."*

An MD employed at the Hospital in Sucha Beskidzka

(6) **Ward lighting** – artificial lighting that meets the standards required by law is not fully satisfactory. Just like the conditions in the ward with only daylight. The comfort of stay and work is influenced by excessive light intensity at night and the inability to control its intensity by the individual user – both the patient and the employee. Currently, the wards use general lighting in the form of fluorescent and incandescent lamps (60W). There are three light points in each patient room. The ward corridors are illuminated with about 20 lamps or bulbs.

Research indicates that staff feel the need for increased control over ward lighting. Factors such as controlling the level of central and spot lighting, providing additional options for dimming the room, and providing additional light sources are key factors in the productivity of nursing staff and patient satisfaction. So is the presence of natural light. [5] Exposure to daylight for at least 3 hours during the day reduces stress while increasing job satisfaction. Increasing exposure to daylight at work reduces the risk of burnout. [6]

The ability to control the intensity and colour of light, especially useful during night shifts, significantly affects the productivity and satisfaction of staff with their work. Optimizing the lighting that supports the circadian rhythm is a must due to the limited presence of natural daylight. Lighting in rooms that is not adapted to the biological needs of the human body causes disturbances in the circadian rhythm with consequences for health and performance for all its users. [7]

*"The lack of individualized and spot lighting reduces the comfort of the stay. Especially in the case of evening or night medical consultations or nursing activities, during which it is necessary to provide adequate light, which unfortunately awakens other patients in the same room from sleep."*

A nurse employed at the Hospital in Sucha Beskidzka

## Requirements

We expect that the proposed solutions will be comprehensive, synergistic and contribute to increasing the comfort of the ward users in relation to all the described areas. At the same time, we appreciate the possibility of obtaining improvement in other key areas for the functioning of the ward not indicated above. We are open to changes and we are looking for innovative, environmentally friendly solutions that will be so effective and universal that they can be implemented in other healthcare facilities facing similar difficulties.

We would like to emphasize – referring to the title of our project – that we care about truly innovative and durable solutions that significantly improve the results achieved so far.

Bearing in mind the need to ensure continuity of care for our patients, we would also like the renovation to have a minimal impact on the functioning of the entire hospital. We expect solutions that are economically effective (taking into account life-cycle costs), low-carbon (taking into account the conditions we mentioned at the beginning of the document) and promoting sustainable development (taking into account the need to face the challenges related to climate change and possible epidemic threats). The solution we choose should be flexible and universal enough to be used in other healthcare units.

With regard to the above-mentioned requirements we expect:

(1) **Temperature and air quality:** Ensuring optimal air parameters (including its appropriate humidity) has an impact on the treatment process, the comfort, safety and hygienic conditions of hospitalization and work of staff, and reduction in the number of hospital infections. Therefore, we will be looking for new solutions for air exchange, appropriately prepared depending on the season: cooled and dried or warmed, and, where required, also moistened, solutions that will improve the current conditions and increase the comfort of every user of the ward, taking into account the current, limited space of the ward.

(2) **Conditions in the wards and (3) places of rest for patients:** In addition to the right to treatment, patients should be provided with appropriate social conditions, places to talk to doctors with privacy, more space, intimacy and warmer interiors resembling a home. Therefore, we want solutions that will support the patient's treatment process and facilitate staff work, meeting the requirements for the functioning of hospital wards, subject to relevant regulations.

We want to change the model of care by enhancing and encouraging patient mobility, while creating the conditions in which it could take place. We want to implement patient-centric not bed-centric solutions. The scarcity of space, the real impossibility of expanding the ward and taking up more space, as well as the current way of functioning of the ward, make it impossible to create single-person rooms and a more spacious resting place for patients. Therefore, we are looking for solutions that will improve the current conditions and increase the comfort of stay for every user of the ward, taking into account the current, limited space of the wards.

**(4) The equipment and quality of sanitary facilities:** The facilities must be adapted to the needs of people with various degrees of disability. The solutions and equipment used should ensure maximum comfort of use for patients and allow them to be as independent as possible when using the above-mentioned facilities while ensuring privacy.

**(5) Facilitating communication:** We want to implement technologies enabling the organization of the work of the ward in such a way as to limit the participation of staff in the tasks that could be performed using new digital technologies. We want staff to deal with issues of key importance to clinical processes and be able to devote as much time as possible to patient care. We want to be able to remotely or automatically perform routine medical activities, such as: temperature measurement, consultation with the doctor on duty or contact with the nurse on duty, etc. The solution should also provide the patient with ongoing access to information on the results of at least basic tests or treatment plan, and also other information that may be crucial for him/her (e.g. hospital procedures regarding care or discharge from hospital, post-hospitalization recommendations, etc.)

**(6) Ward lighting:** We want the proposed solution to take into account the fact that lighting that is not adapted to the needs of people disturbs the circadian rhythm having consequences for health (patients, staff) and work efficiency (staff). We also want to be able to provide patients and employees with access to natural light as much as possible.

Summarising the above:

*"We need to make a change that will improve the organization of staff work and the stay of patients in the ward. We have identified critical areas, the improvement of which would greatly contribute to increasing the perceived comfort of work and stay. However, we are aware that a change made in only one area will not fully satisfy the above-mentioned needs, thus not leading to an improvement in the functioning of the ward to the satisfaction of its users. We expect a holistic solution that takes into account all problem areas indicated by us and universal enough to be successfully implemented in similar units."*

## What can you do next?

Thank you for taking the time to read this Statement of Demand. The project team is keen to identify and engage with other practitioners and healthcare providers that have the same or similar needs or may be aware of solutions before we start communicating with potential suppliers. At this stage, we have the flexibility to adapt the Statement of Demand to include particular needs that would increase the relevance for other interested healthcare customers.

Demonstrating that there is a wider potential market will better encourage potential suppliers to invest in developing innovative solutions that meet the unmet needs identified.

Your voice is vital to encourage suppliers to innovate to provide solutions. If you also believe that this is an unresolved issue or unmet need or would like to provide feedback, then please follow the link below. This will take you to a short survey which will help us to gather views and gauge interest.

[\*\*Click here to complete the survey.\*\*](#)

## About the buyer

Sucha Beskidzka Hospital is a medium sized public hospital, with 441 beds in 17 wards providing services for the general population located in Suski county, in the South-Western part of Małopolska voivodship (province), Poland.

The hospital opened in 1982 and is one of the largest and most modern in the region where it is perceived as a leader of change. Services performed by Sucha Beskidzka Hospital include hospital treatment, specialized outpatient care, emergency care, rehabilitation and diagnostic services. Annually around 15,000 discharges and over 100,000 outpatient specialist consultations are performed in the hospital.

The hospital employs around 200 doctors, over 340 nurses and midwives, and more than 300 other medical and non-medical staff.

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## About EcoQUIP+

EcoQUIP Plus ([www.ecoquip.eu](https://www.ecoquip.eu)) is a collaborative innovation procurement project in the healthcare sector. EcoQUIP Plus aims to demonstrate how pro-innovation procurement methods can improve the efficiency, quality and sustainability of healthcare and to increase the take up of much needed innovative solutions through collaborative actions.

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