Appendix to the Senate Resolution no. 22/2021 dated 25.02.2021

Development strategy of the Medical University of Bialystok for the years 2021-2030

The development strategy of the Medical University of Bialystok is a roadmap that shows the Academic Community where we want to go in the next 10 years (until 2030), diagnoses the current state, projects future development and explains what methods we will implement to achieve this ambitious goal.

The European Commission has specified the European Union's priorities for the coming years. Some   
of the main challenges are: "European Green Deal", i.e. aspiring to be the first climate-neutral continent, the projects "Europe fit for the digital age" and the "Economy that works for people" include actions meant to employ young people and develop their potential. These directions will shape the science policy of individual countries,   
including Poland.

The foundations of the MUB's mission and development strategy: taking care of public health, the development of artificial intelligence (AI) for the development of   
medicine and the conduct of research in these fields, as well as the development   
and improvement of the education offer, fit perfectly into the objectives set by the European Commission.

An important element of the National Science Policy is the conduct of thoughtful science diplomacy, which gives an opportunity to play an important role as a link of knowledge between the east and the west. The science policy of Poland should also provide conditions   
for high-quality education of future generations at the academic level.   
The document prepared by the Polish state stipulates that science should also be an important element of our international policy.

In its operational strategy, the MUB, for many years, can boast about cooperation   
with dozens of leading western medical universities as well as universities   
from Belarus, Russia and Ukraine. It bears fruit in the form of joint grants, scientific conferences, staff recruitment for university hospitals, and cooperation in the development and creation of new fields of study.

The authors of the current SWOT analysis and development strategy of the Medical University   
of Bialystok are the Rector's and the Dean's authorities, the Chancellor, Student Government as well as young, distinguished scientists and academic teachers with the highest academic achievements. The document has been created as a result of the discussion among the community, based on the analysis and diagnosed challenges. It consists of: the mission, the diagnostic and forecasting parts defining the objectives (main, detailed and horizontal) as well as the implementation evaluation system.

The development strategy of the Medical University of Bialystok takes into account both the current state *(diagnostic part)* and plans for the future *(forecasting part)*. Regardless   
of the geographical location of the MUB, the problems we face today are global. Research is the key to meeting these challenges. That is why their quality, internationalisation of cooperation and effective use of time are so important for science to respond accurately and quickly to the needs of a changing world. In this context, the mission of our University has been redefined.

Mission of the University

The mission of the University is to serve the society through innovative education of professional medical staff, conducting research as well as development   
and implementation works at the highest international level in conjunction with the development of clinical activity in line with the progress of medical knowledge

# Summary of baseline diagnosis

1. The strengths of the MUB allowing to further **improve the quality of student and doctoral student education include**: high positions in Polish rankings of the pass rates for professional examinations, obtaining a distinctive grade for the *English Division* for the highest level of medical education in English in Poland, the presence of more than 400 students and doctoral students from 37 countries studying in English, more than   
   5,000 students studying in Polish, a rich offer of doctoral studies   
   (including international students), a very modern teaching infrastructure and a state-of-the-art clinical base and a significant scientific activity of students.

The main weaknesses were the lack of financial capacity to conduct part of the practical classes in small groups in a mentoring system. Further development in this area will be possible thanks to: the wide-ranging introduction of the "learning through active participation" method, i.e. the inclusion of students in conducting their own independent research, the possibility of using an expanded e-learning offer and methods based on virtual reality, the introduction of innovative subjects such as bioinformatics into the curriculum, the further expansion of education offer in English, the introduction of international doctoral dissertation procedures, the introduction of a system of scholarships for top high school graduates.

1. In terms of **increasing the impact of the University's scientific activity on the development of the world science**, the strengths of the University were significant commitment and advancement of work in the area of the so-called *big data*, that is the creation of the first comprehensive database in this part of Europe combining accurate clinical, environmental data with detailed analysis of the genome / proteome / metabolome of patients with the most common lifestyle diseases and population studies. The strengths also included staff, well-educated scientists, state-of-the-art research infrastructure, significant funding for research for the years 2019-2023, maintaining the highest global standards of biobanking, the country's largest experience in conducting studies of the whole genome, and unique equipment for PET-MRI studies (medical imaging with simultaneous use of positron emission tomography and MRI).

The main risk identified is the lack of a stable financial situation limiting its long-term activities. An ambitious plan to continue and increase the quality of work related to the development of a comprehensive IT platform called the **Polish High-Definition Medicine Database**, which forms the basis for the development of the first **Centre for Artificial Intelligence   
in Medicine** in the country and this part of Europe, was considered the greatest opportunity for the MUB.

1. In terms of actions to **improve the international position of the MUB**, the strengths were: high level of cooperation with significant scientific centres, creation of an internationally recognized model of complex database integration and a modern equipment base, which arouses interest on the international arena.

Too few joint grant applications with international partners and joint projects and publications with scientists from the world's leading universities were considered as weak points.

The greatest opportunities were: plans to integrate MUB's existing activities into international research networks (*Global Cancer Database, ELIXIR Deposition Databases for Biomolecular Data, COST, Horizon*), create international research consortia preparing applications for competitions organized by European and domestic institutions, use MUB's active position as a national leader in genomic research and high-quality biobanking in Poland to create new cooperation networks (i.a. The Polish Biobanking Network established by the BBMRI consortium). The possibility of organizing joint research in the field of lifestyle disease prevention and research in oncology can also be mentioned as an opportunity.

1. The strengths of the MUB in **terms of creating solutions for the professional development of the University staff, in particular young scientists, are**: a large and dynamically developing research staff; an attractive system for obtaining relatively high financial awards for scientists with a high publication record and winners of grant competitions; transparent rules for competitive procedures for positions and criteria for scientific evaluation that allow for quick promotion of young scientists,an attractive scholarship system for students and doctoral students as well as access to a modern clinical and research facilities.

Weaknesses include, among others, obstacles to the scientific development of clinical staff due to the burden of hospital bureaucratic obligations, the lack of financial opportunities to create an effective incentive system for mentoring young scientists.

Opportunities for the development of this area will be created by: implementing a flexible choice of academic career paths, creating organisational facilitations for physicians conducting research, focusing the distribution of funding and institutional efforts on the further development of young scientists in priority areas, and creating a system of dedicated research teams composed of outstanding young scientists.

1. In terms of **improving the quality of university management**, the strengths include a competent and committed University administration and well-defined rules for advancement and criteria for scientific promotion.

One of the most serious weaknesses was the lack of the possibility to change the slow-functioning public procurement system.

The greatest opportunities of the University in this area were: the planned creation of a system for promoting groups/leaders, especially those involving students   
and acquiring key research projects, the conduct of project management courses among the leaders of the administration, and the creation of a system of external and internal audits assessing the quality of the management process, efficiency   
and work comfort of staff.

# Main and specific objectives of the MUB Strategy

Objective 1: MUB as the leader in education quality

* 1. Improvement of the teaching process and development of the education offer
  2. Development of internationalisation
  3. Computerization of teaching processes

Objective 2: MUB as an international research University

2.1 Increasing the impact of research activity of the University on the development of the world science

2.2 Strengthening research cooperation with internationally renowned research institutions

2.3 Further increasing the participation of students and doctoral students in high-quality research

Objective 3: MUB as the University friendly to researchers, students and staff

3.1 Professional development of MUB employees, in particular young researchers, and improvement of the quality of infrastructure

3.2 Professionalisation of the University management

Horizontal objectives

Objective 1. MUB as the leader of the high definition medicine (HD Medicine)

Objective 2. MUB brand recognizable in the country and in the world

Objective 3. MUB as the leader in social development

## Objective 1. MUB as the leader in education quality

**Indicators**:

* Results of medical final examinations (LEK) and medical-dental final examinations (LDEK)
* Students' assessment of the quality of the conducted classes
* Participation of graduates willing to choose the MUB again

### 1.1 Improvement of the teaching process and development of the education offer

### Planned actions:

* More effective cooperation with students, graduates and employers   
  in order to improve the education offer and improve the quality of individual classes
* Gradual analysis of student surveys evaluating academic teachers – the survey filled in anonymously after the end of each cycle of classes
* Development of the Doctoral School in order to educate future research staff
* Implementation of the OSCE *(Objective Structured Clinical Examination)* to better evaluate learning outcomes
* New fields of study and areas of education: bioinformatics (processing of large and variable data - the so-called *Big Data* in medicine), radiopharmacy, English-language subjects at the Faculty of Pharmacy with the Division of Laboratory Medicine and at the Faculty of Health Sciences
* Implementation of modern methods of academic teaching, including computerization of teaching processes and the use of computer technology in dentistry
* Further development of education in the field of pharmaceutical care, clinical pharmacy and effective communication between employees of different medical professions
* Supporting the development of teaching career - rewarding the didactic achievements of academic teachers (i.a. outstanding authors of academic textbooks, teaching innovations), conducting trainings in effective teaching methods, mobilizing   
  for participation in specialized courses and trainings enhancing teaching competence and improving the salaries of teaching staff
* Further development of postgraduate studies and social education, including preventive measures
* Introduction of the "learning through active participation" method, i.e. involving students   
  in conducting their own experiments in the disciplines belonging to the priority research areas - Genetics, Biochemistry, Immunology, Microbiology
* Further expansion of the MUB teaching facilities with the use of external resources, including the creation of the Preclinical Teaching Centre, an increase in the number of lecture halls, specialist laboratories and the expansion of the Centre for Medical Simulation
* A significant increase in the number of comprehensive clinical scenarios involving students during the acquisition of knowledge in the Centre for Medical Simulation
* Increasing the clinical facilities for fields of study at the Faculty of Health Sciences   
  and the Faculty of Medicine with the Division of Dentistry and Division of Medical Education in English - cooperation with local government hospitals and non-public medical centres
* Expansion of the teaching infrastructure of the University Hospital   
  and the University Children's Hospital (renovation of the auditorium, construction of teaching rooms)
* Necessary repairs and upgrades
* Development of a scholarship system for student candidates with the best results in the high school final exam and winners of Polish nationwide subject competitions
* Implementation of a system of incentives and incentive tools for physicians conducting specialisation training for continuing professional and research development in the University hospitals of the MUB
* Launch of a food point on the University campus/Hospital premises
* Development of the Interdisciplinary Doctoral School promoting research in priority areas
* Creation of a special system of so-called Summer and Winter Schools in the disciplines belonging to the priority research areas (biochemistry, genetics, medicine) and interdisciplinary interdepartmental courses allowing the free transfer of knowledge between world experts, doctoral students and students
* Increasing the interest of the socio-economic environment in cooperation with the MUB   
  and the commercialisation of knowledge
* Implementation of projects improving students' professional practical skills and their social competences

### 1.2 Development of internationalisation

**Planned actions**:

* Expansion of education offer in English
* Effective use of funds obtained for student trainings abroad  
   in the scope of implementation of the most modern diagnostic and therapeutic methods (i.a. in dentistry)
* Education of doctoral students in international cooperation in English (foreign supervisors and auxiliary supervisors)
* Participation in international programmes (NAWA, Erasmus+)
* Obtaining further international accreditations
* Development of the offer for apprenticeships/ internships abroad
* Participation of international staff in education and research, including organisation of webinars with global experts
* Creation of a coherent information collection system that enables reliable reporting of data to the most important global ranking institutions*,* thereby highlighting the MUB's position in international rankings: *Times Higher Education World University Rankings (THE), QS World University Rankings (QS), U-Multirank, UniRank and SCImago Institutions Rankings (SIR)*
* Increase in the number of international agreements, obtaining the ASPIRE international accreditation in the *Student Engagement* category
* Exchange of staff, students and doctoral students of the MUB   
  within the scope of cooperation with prestigious institutions abroad

### 1.3 Computerization of teaching processes

**Planned actions**:

* Introduction of virtual and augmented reality methods into the study programmes to further increase the quality of medical education in surgical disciplines (surgery, gynaecology, orthopaedics, endoscopy) and central nervous system sciences
* Launch of the University Postgraduate Education Centre
* Introduction of a new IT system in the scope of e-learning, computerization of the student and student candidate services (Virtual Dean's office), the preparation of schedules, the settlement of teaching loads, the use of teaching rooms)
* Significant increase in the existing e-learning offer and the use of   
  online education (i.a. *webinars* with the participation of world experts from abroad, a platform for students to access teaching materials)
* Development of ICT infrastructure necessary for the further development of such fields of study as: biostatistics, bioinformatics, big data analysis.

## Objective 2. MUB as the international research university

**Indicators**:

* Impact Factor value (up to > 4500)
* Number of highly ranked scientific publications in prestigious journals and publishing houses (up to 1200 per year)

Number of research projects in partnership with entities abroad

Revenue from commercialisation, including R&D activity

Number of students and doctoral students conducting research

**Specific objectives**

### 2.1 Increasing the impact of research activity of the University on the development of the world science

**Planned actions:**

* Development of leading scientific disciplines through multidisciplinary research activity and the creation of international research teams
* Continuation of the unique works on the creation of the first (in this part of Europe) and one of   
  the few in the world, the most in-depth and detailed of all databases created so far (Polish High-Definition Medicine Database)
* Integration of the MUB's research activity in the scope of creation of comprehensive databases and artificial intelligence into European research networks, including *ELIXIR Deposition Databases for Biomolecular Data, Global Cancer Database*
* Use of the MUB's active position as a Polish leader in high-quality biobanking to create new cooperation networks within the European BBMRI consortium
* Use of the University potential in priority research areas, i.a. Genetics, Biochemistry, Immunology, Microbiology, Oncology to attract more scientific and commercial partners to cooperate, among others, using a unique infrastructure for high-quality preclinical research (Experimental Medicine Centre with a certificate of *Good Laboratory Practice*)
* Use of subsidiaries of the MUB, including the newly created company Genomika Polska, whose employees have the largest experience in conducting WGS *(whole genome sequencing)* research in the country, to attract further research   
  and commercial partners from abroad, individuals and enterprises
* Creation of an international research network – including the international PhD students from the Impress project studying at the MUB
* Start of education in the medical bioinformatics field of study – attracting young scientists by combining medical knowledge and data analysis
* Use of the role as the national leader in the implementation of large-scale projects in the field of large-scale research and population genomics using *machine learning (artificial intelligence)* methods in the analysis of biomedical data
* Increase in the employment of university professors from world-renowned institutions
* Development of a financial incentive system for research activity: incentive bonuses for the best 10-20% of scientists, a progressive system of the Rector's awards for scientific publications (i.a. high awards for publications of 200 points), additional remuneration for acquired grants/ research funds (Grant PLUS)
* Development of modern research centres fulfilling the role of *Core Facilities*, cooperating with clinicians/basic sciences, open access to biobank data and biological materials
* Development of research in the field of *High-Definition Medicine* using artificial intelligence methods
* Creation within the *Futuri Centre*: Genome Centre, Centre for Prevention and Personalised Medicine, Regenerative Medicine Centre
* Creation of the Biobank and the Data Analysis Centre
* Creation of the Białystok Molecular Imaging Centre   
  with the Radiopharmaceutical Laboratory (premises of the Białystok Science and Technology Park)
* Increase in the number of available radiopharmaceuticals to enable the development of personalised medicine based on multimodal molecular diagnostics, including projects leading to the development of theranostic methods, i.a. innovative treatment of prostate cancer carried out in a few leading oncology centres in Europe
* Development of new post-processing techniques for the development of data obtained from PET/MRI (radiomic) images using AI (artificial intelligence), in order to conduct research projects that increase the potential of molecular imaging techniques
* Establishment of the Centre for Counteracting the Health and Social Effects of Ageing (*Collegium Floridum*)
* Support of the development and financing of non-commercial research and commercial research, through the introduction of the Clinical Research Support Centre and the further development of the Clinical Research Centre
* Creation of a system for more effective transfer of research results to the economy

### 2.2 Strengthening research cooperation with internationally renowned research institutions

**Planned actions:**

* Organisation of joint research in the field of lifestyle diseases prevention and research in the field of oncology – the development of cooperation with Indivumed GmbH
* Inclusion of the MUB, in the next three years, in the *Global Cancer Database* network which allows to compare the results of analyses of the Polish HD Medical Database on patients with cancer in the priority research areas, such as high-quality medicine (i.a. Genetics, Biochemistry, Immunology, Microbiology)   
  with the results of large-scale studies from other parts of Europe
* Meeting the criteria and integrating the MUB into the network of the leading European Bioinformatics Research Centres (ELIXIR) in the coming years
* Transfer of know-how in the field of high-quality biobanking to international partners within the framework of the BBMRI and who are candidates for scientific cooperation
* Use of the MUB's active position as a leader in high-quality biobank in Poland to create new cooperation networks within the European BBMRI consortium in the fields related to the priority research areas, i.a. Medicine, Genetics, Biochemistry, Immunology
* Creation of international research consortia preparing applications for competitions organised by European and domestic institutions
* Creation of networks with researchers from abroad currently involved in co-management of the unique PhD programme entitled *"International Interdisciplinary PhD studies in Biomedical Research and Biostatistics”* financed by Horizon 2020 programme
* Start of education in Biostatistics II degree field of study in cooperation with Hasselt University, Belgium – training of staff dedicated to research
* Creation of the *International Advisory Board* composed of prominent world scientists conducting long-term evaluation of scientific development strategy programs in priority research areas
* Further development and international promotion of the Map of Research Potential of the MUB – increasing visibility on the Internet and increasing the opportunity to attract international partners
* Constant updating of information in the Polish Medical Platform, which complements the Map of Potential
* Recruitment for research projects of university professors and scientists from renowned research centres in the world

### 2.3. Increasing the participation of students and doctoral students in high-quality research

**Planned actions:**

* Support for the development of young scientists, doctoral students in priority research areas (participation in research projects, conferences, courses and trainings, additional individual scientific awards for young researchers)
* Increase in student involvement in research (student projects, education in fund-raising, writing research publications)
* Process of integration of research programmes (joint large projects, the possibility   
  of using data generated by population projects (Białystok+, ONCO database, Biobank, registers of lifestyle diseases)

## Objective 3. MUB as the University friendly to researchers, students and staff

**Indicators:**

* Number of persons who have acquired qualifications/competences after completion of education
* Number of high-quality IT processes implemented to improve the functioning of the University

**Specific objectives**

### Objective 3.1 Professional development of MUB employees, in particular young researchers, and improvement of the quality of infrastructure

**Planned actions:**

Implement a flexible choice of academic career path (research/ research-didactic/ didactic) depending on the predisposition and decisions of employees, especially those involved in work in priority research areas

Introduction of a strategy to recruit the best University graduates to work at the MUB

Effective implementation of the standards of the *European Human Resources Strategy for Researchers*

* Creation of opportunities to combine professional and scientific development with financial success (conducting application research, commercialisation of research results, clinical trials)
* Creation of opportunities for young researchers to choose research teams in which they would like to continue their careers
* Creation of the START GRANT system for scientifically committed graduates planning research in priority research areas
* Focus of financial resources and institutional efforts on activities to stimulate the development of research groups composed of young researchers working   
  in priority research areas
* Creation of a system of special research teams created by and for outstanding young scientists with the provision of research infrastructure for the implementation of assumptions in priority research areas
* Ensuring continued access to external funding for the training of academic staff in the best research centres in the world
* Institutional support in the path of professional advancement to the most outstanding researchers effectively involved in strategic research projects of the University
* Creation of a financial system to promote research groups involving students in their research work
* Provision of training in mentoring, writing scientific articles, public speaking and preparing presentations during conferences
* Implementation of an extensive training program for researchers in the ethics of conducting research and the principles of personal data protection of patients enrolled in strategic research programmes carried out at the University
* Implementation of language courses for employees as well as intercultural and interpersonal communication workshops
* Further development of the GRANT+ system guaranteeing high financial prizes for researchers raising funds for research in the framework of grant competitions
* Conduct of classes in the field of counteracting the phenomena of occupational burnout, mobbing, sexual harassment, discrimination
* Introduction of organisational amenities for physicians conducting research enabling efficient and comfortable combination of clinical and research work
* Provision of opportunities to improve the competence of the University staff
* Development of the infrastructure to encourage students to spend their free time (recreation space in dormitories, construction of a multipurpose field near the dormitory, renovation of the sport hall)

### Objective 3.2 Professionalisation of the University management

**Planned actions:**

* Optimisation of administrative processes, i.a. continuous review and update of the internal regulation of the University in order to adapt to the changing socio-economic environment
* Implementation of new IT services to improve the functioning of the University
* Increase in the efficiency of project acquisition by improving organisational solutions
* Improvement of the quality of procedures using management control tools
* Continuous improvement of the qualifications of the University staff, in particular through participation in training courses

Improvement of the management staff and team leaders in the scope of interpersonal skills and innovative attitudes

Optimisation of mechanisms that increase the efficiency of the use of assets at the disposal of the University

* Close cooperation between the University authorities and the management staff of the University hospitals and related entities as places of teaching and clinical research
* Maintenance of economic indicators at a level that ensures the achievement of the planned objectives of the MUB

## Horizontal objectives

Objectives that support, and often even condition, the achievement of all three main objectives. Strong, stable position of university hospitals and constant cooperation   
with the University is a prerequisite for improving the quality of teaching, research and specialisation training. The high level of teaching, research potential, but also the quality of working  
 and studying are directly dependent on the clinical activity, the image of our University, as well as its impact on the environment. These objectives have therefore not been assigned to any main objective but have been identified as horizontal objectives.

### Horizontal objective 1. MUB as the leader of the high definition medicine (HD Medicine)

**Planned actions:**

* Support for the development of the health services offered by University hospitals and the entities set up by the MUB to strengthen the position of the leader of the most modern health care institutions in the region, providing highly specialised medical services
* Support for the development of the clinical facilities in the following areas:
* psychiatry for adults as well as children and adolescents, including: construction of the Psychiatry Centre with teaching and research infrastructure
* infectious diseases and internal diseases – including modernisation and renovation of infectious disease clinics and the department of internal medicine in the Isolation Hospital
* oncology in the scope of diagnostics, therapy (including targeted immunotherapy, radiotherapy and oncology surgery), in particular through the improvement of laparoscopic procedures
* hematology – by establishing the Bone Marrow Transplant Department on the basis of the University Hospital Hematology Clinic
* geriatrics - by intensifying cooperation with other constituent entities in the preparation of a comprehensive clinical and education offer in the field of care for the elderly and dependent.
* Support for the development of clinical research via the establishment and organisation of the Clinical Research Support Centre
* Adaptation of the clinical facilities of the University Children's Hospital to the latest standards
* Organisation of the Oncology Surgery Clinic and the development of oncology diagnostics and therapy in the University Hospital (i.a. purchase of a mammography unit)
* Commercialisation of the MUB know-how

### Horizontal objective 2. MUB brand recognizable in the country and in the world

**Planned actions:**

* Systematic and long-term *(in the perspective of years)* promotion of the MUB's scientific and teaching potential and achievements on the Internet, including social media and in traditional media *(local, domestic and abroad)* both in Polish and English
* Continuous image building and maintaining the position as the leader in the field of health care and support of the university hospitals and entities created by the MUB in shaping health policy in the region
* Maintenance and development of the MUB website in 9 languages (*Polish, English, German, Chinese, Swedish, Norwegian, Spanish, Russian, Finnish)* and adaptation of the website to the needs of people with disabilities
* Posting attractive multimedia content *(videos, photos, graphics)* from the life of the University on the MUB website, in the Medyk Białostocki, Facebook, Youtube, Twitter
* Organisation and participation in social, health and educational events
* Building the image of a socially responsible University
* Supporting relations with the MUB alumni associations, as well as the development of a system of incentives for Polish youth living abroad to study in Poland
* Building the University's expert image in medicine and science (*by promoting the staff and their scientific, clinical, grant achievements, etc.)*
* Building a positive image of the MUB in the business community as an open university for cooperation, commercialisation and patents *(preparation of a modern movie with the offer, potential and commercialisation achievements)*
* Participation of university representatives in educational fairs and meetings, as well as webinars, online seminars for high school graduates and students of secondary and primary schools
* Activities aimed at placing the MUB in international rankings, building the internationalisation infrastructure *(mobile applications, adapting the university structure to the growing internationalisation processes)*
* Co-organisation of the Podlaskie Festival of Science and Art – promoting the social responsibility of science

### Horizontal objective 3. MUB as the leader in social development

**Planned actions:**

* Promoting tolerance, respect and expertise in the media
* Organising initiatives aimed at the society, with special attention to children and seniors *(Academy of the Young Scientist, University of the Healthy Senior, University of Psychogeriatric Prevention),* preventive actions organised by the student organisations
* Participation of the University in the process of improving the competences of students and teachers outside the higher education system
* Participation in the development and co-implementation of regional health policy programmes and participation in nationwide preventive health programmes, in particular in the scope of lifestyle diseases
* Further revitalisation of the Branicki Palace, which is the seat of the University
* Development of the activity of the Museum of the History of Medicine and Pharmacy
* Promoting innovations in the citizens' involvement in cohort research, which assesses the occurrence of a specific endpoint in groups (cohorts) of people exposed and not exposed to a given factor, through *responsible research and innovation* and by *crowdsourcing* the University initiatives.

# Implementation and evaluation of the MUB development strategy for the years 2021-2030

Given the multifaceted nature of the University's development strategy, it is necessary to evaluate this process. Effective monitoring of the implementation of the document is therefore a necessary task to achieve the ultimate success. It is assumed that the implementation of the strategy will be subject to continuous monitoring, at least once a year, while its evaluation will take place in the middle of the implementation period. Those responsible for the efficient and effective implementation of the strategy are: the rector's authorities, the dean's authorities, the chancellor and the entire MUB community.

The qualitative approach will be crucial in this respect, which will allow to check the actual progress in achieving the goals and indicators set out in the MUB development strategy. Monitoring of the implementation of the University's strategy should be carried out on several levels – at the level of the Senate, the Rector, Vice-Rectors, Deans and Chancellors. Progress towards the implementation of the objectives of the Strategy, including the specified indicators, will be reviewed   
at least once a year by the Senate and the University Council.

The time horizon for the development of the University described in the strategy is 10 years. Adjustments and verification of the included assumptions may be necessary *(change of the law and the scientific policy at the level of the ministry and the Parliament of the Republic of Poland, unforeseen events, e.g. pandemic, etc.)*. A key element of the evaluation will be the periodic assessment of changes in the conditions and   
environment of the MUB. This will be due both to the update of the challenges before the Medical University of Bialystok, science and higher education, the financial capabilities of the state, as well as the response to changes and global events.

The specified set of priorities is not static and can be modified, both under the influence of external factors and the conclusions drawn from monitoring of the implementation of the MUB development strategy. This is also due to the conduct of scientific research, the final results of which can not be predicted. However, any changes in this area will be focused on improvement and will take on a rather evolutionary character, and the sustainability of the priorities set out in the document will guarantee the stability of the reference point in the framework of research and education.

## Indicators for monitoring the achievement of the objectives of the Strategy

| **No.** | **Indicator** | **Initial value (year 2020)** | **Target value (2030)** | **Source of data collection** |
| --- | --- | --- | --- | --- |
| 1 | Results of the Medical Final Examination (LEK) | Place 4 | Place 3 | Medical Examinations Center |
| 2 | Results of the Medical-Dental Final Examination (LDEK) | Place 1 | Place 1 | Medical Examinations Center |
| 3 | Students' assessment of the quality of the conducted classes  The whole University  The Faculty of Medicine  The Faculty of Pharmacy  The Faculty of Health Sciences | 4.46  4.34  4.33  4.71 | 4.6  4.5  4.5  4.7 | Survey at the end of the course cycle |
| 4 | Tendency of graduates to re-choose the MUB  The whole University  The Faculty of Medicine  The Faculty of Pharmacy  The Faculty of Health Sciences | 76%  69%  80%  77% | 85% | Graduate satisfaction survey |
| 5 | Impact Factor value | 2288 | 4500 | Database "Bibliography of publications of the MUB employees" |
| 6 | Number of highly ranked scientific publications  in prestigious journals  and publishing houses | 636 | 1200 | Database "Bibliography of publications of the MUB employees" |
| 7 | Number of research projects  in partnership with entities abroad | 43 | 80 | Development  and Evaluation Department |
| 8 | Revenue from commercialisation  (including R&D activity)\* | 115 mln. | 300 mln. | Bursar |
| 9 | Number of students and doctoral students conducting research | 224 | 500 | Development  and Evaluation Department |
| 10 | Number of persons who have acquired qualifications/competences after completing various forms of training | 481 | 500 | Bursar |
| 11 | Number of high-quality IT processes implemented to improve the functioning of the University | 0 | 10 | Section  of the Integrated University Management System |

\**The base value as the sum of revenues from 2016-2020. The target value is the sum of revenues in the period 2021-2030.*

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