Appendix to the MUB Strategy adopted by the Senate Resolution no. 22/2021 dated 25.02.2021

Strategic diagnosis of the MUB – as of December 2020

# Summary of key achievements in the period 2016-2020

Didactics: in December 2020, almost 5,500 students studied at the MUB and this is the highest result in the history of the University. In the last 4 years, the number of students has increased by almost 800 people. In relation to the shortage majors for the health care system, the increase was 33% (medicine – studies in Polish and English) and 47% (nursing – 1st and 2nd degree studies), respectively.

There was also a significant increase (by more than 50%) in the number of international students and the number of doctoral students, which fits into the existing development strategy of the MUB and is an important factor for internationalisation and further improvement of the quality of conducted research.

A key element of the current strategy in the scope of didactics is the care for the quality of education. This results in high marks in the national final examinations every year. In the last autumn examination session of LDEK in 2020, once again MUB dentistry graduates took the first place in the country, and their colleagues from the medicine programme, in the LEK examination ranking, were just behind the podium. The construction of the Centre for Medical Simulation (opened in October 2017), which allows the acquisition of practical experience in conditions close to clinical reality, was also an important direction in the development of education. The development of practical training was ensured by the implementation of projects financed by European funds, which included, i.a. certified trainings, workshops and internship programmes for students.

**Science:** the greatest scientific success of the Medical University of Bialystok in 2020 was the 11th place among all higher education institutions and the second place among medical universities in the competition of the Ministry of Science and Higher Education for the research university – the MUB project received a very high rating of international experts and funding for the prepared development programme in the amount of PLN 50 million.

In the area of research in the period 2016-2020, the MUB researchers noted:

* 3-fold increase in the number of grants received
* 55% increase in the annual number of publications in the Web of Science database
* two-fold increase in the number of citations recorded by this prestigious scientific database – works of the MUB scientists have been cited nearly 12,000 times in 2019.

The Medical University of Bialystok is one of the few universities in Poland that is a project leader within the Horizon 2020 programme (Impress). Co-funding from the Ministry of Science and Higher Education and from the European Union funds in the amount of PLN 15 million was obtained for the implementation of international doctoral studies. In 2019, the MUB also received a grant from the Ministry of Health for the creation and development of the first Centre for Artificial Intelligence in Medicine in Poland. In 2020, the MUB received a prestigious grant of PLN 10 million from the Medical Research Agency for the implementation of the Clinical Research Support Centre – as one of the best clinical research centres in Poland.

Over the last 4 years, the MUB has obtained additional external funds totalling PLN 493 million for its research and teaching activities – which is 4 times the University's annual budget (including PLN 207 million for research grants, PLN 205 million for research and teaching infrastructure, PLN 52 million for teaching programmes and PLN 15 million for activities related to the University's social mission).

Clinical activity: in the years 2016-2020, the expansion of the MUB's clinical infrastructure was extremely dynamic. In 2019, the 11-year-long modernisation of the University Hospital located at ul. M. Curie-Skłodowskiej has been completed. In 2021, the extremely necessary investment in the Isolation Hospital at ul. Żurawia: Pulmonology Centre and Intensive Care Unit, has been completed.

In 2019, the construction of the Psychiatry Centre (comprising the Psychiatry Clinic for Adults and the Psychiatry Clinic for Children and Adolescents) started. Thanks to the PLN 40 million obtained from the Ministry of Health and the Regional Operational Programme, the modernisation of the University Children's Hospital continues.

The difficult epidemiological situation associated with the SARS-Cov-2 pandemic has highlighted the important role played by the Medical University of Bialystok and its university hospitals in the health care system in Białystok and the whole north-eastern region. Thanks to the involvement of the MUB scientists, RT-PCR testing was started – the only recommended method for confirming infection with SARS-CoV-2 coronavirus. In the voivodship, 80% of all tests are still performed by the MUB employees. The infectious disease clinics of the University Hospitals as the first in the region started receiving patients and still bear the main burden of caring for patients with COVID-19 requiring hospitalisation. The MUB was also the only one to organise temporary hospitals in the Podlaskie voivodship using its own infrastructure.

Social mission: For the past 4 years, the Medical University of Bialystok has taken care of the "national goods" that are the property of the University: the renovation of the Great Hall and the former Royal Apartments in the Branicki Palace, where the Aula Nobilium was established – as a sign of recognition for graduates of the Alma Mater and people who rendered great service for the University   
and Białystok, was carried out. In the palace cellars, there is also a multimedia museum of the regional history. Mobile applications for Aula Nobilium, funded by the Polish National Agency for Academic Exchange, are also under development. The applications will present the history of MUB and include a database of the University graduates, including international ones.

The students of our University, united in 17 organisations and 87 science clubs, periodically carry out preventive actions for the benefit of the residents of our region, promote healthy lifestyle, organise many events not only of a scientific but also cultural nature, involving the entire academic community of the University, and also prepare numerous conferences that attract the attention of students from all over Poland – potential scientists and researchers.

To celebrate the 70th anniversary of the University, a special subsite was created on the MUB website with a virtual album about graduates and employees entitled "The MUB is us - tell us your story." It fills up successively with more stories.

## SWOT analysis of the Medical University of Bialystok – state as of 2020

### Objectives

**SWOT analysis was performed on the objectives that are the basis for evaluation in the competition "Excellence Initiative – research university”:**

1. increasing the impact of the University's scientific activity on the development of world science, in particular in priority research areas with high potential for development, in which the University plans to intensify scientific activity, hereinafter referred to as "priority research areas"
2. strengthening research cooperation with internationally renowned scientific institutions, in particular in priority research areas
3. improving the quality of education of students and doctoral students, in particular in the fields of study and scientific disciplines related to priority research areas, taking into account the need to involve students and doctoral students in the conduct of research, as well as the need to effectively compete for the best candidates for studies and doctoral schools (including ones from abroad) and talent management
4. preparation and implementation of comprehensive solutions for the professional development of the University staff, in particular young scientists (as defined in art. 360 of the Act – the Law on Higher Education and Science)
5. improving the quality of university management, including qualitative organisational changes.

### Methodology

**SWOT analysis was carried out in 3 stages:**

**Stage 1** Bibliometric analysis using the largest, neutral in source selection, database of abstracts and citations from peer-reviewed scientific publications, based on the assessment of independent experts from various fields – SCOPUS and the Web of Science database – one of the tools of Clarivate Analytics company, the research areas with the largest number of publications and the highest citations compared to the average values of the research area were identified. To analyse this database, the SciVal platform was used to visualize information about the effectiveness of scientific research and compare it   
with other institutions and researchers, as well as to establish cooperation and analyse trends in science.

The SCOPUS database analysis confirmed that the strongest priority research area is 'medicine', and 3 other areas were also selected due to their significant citation and development potential.

Figure 1. Publications of the MUB employees in the years 2013-2017 according to the *Web of Science* database

| **Subject Area** | **Publications**  **(2013-2017)** | **Citations**  **(2013-2017)** | **Field-weighted Citation Impact** |
| --- | --- | --- | --- |
| **Total MUB** | 2,279 | 20,210 | 1,06 |
| Medicine | 1,622 | 15,141 | 1.17 |
| Immunology and Microbiology, | 151 | 3,021 | 1.42 |
| Biochemistry, Genetics and Molecular Biology | 673 | 6,716 | 1.0 |
| Neuroscience | 81 | 946 | 1.7 |

It should be emphasized that in the priority research areas of the Medical University of Bialystok identified in the SCOPUS database according to the *ASJC all science Journal classification*, there is a significant "overlap" of research areas resulting from the interdisciplinarity of conducted research, mainly in the fields of: medicine, immunology/microbiology, biochemistry, genetics/molecular biology and *neuroscience*.

The analysis of publications of the MUB employees in 2013-2017 according to the *Web of Science* database showed a great variety using the division into *subject categories* (Figure 1) the SCOPUS *All Science Journal Classification* used in further analyses made it possible to demonstrate the homogeneity of the research areas of the University to a greater extent.

On the basis of the list of the most frequently cited publications in the identified research areas, 17 scientists were selected with the best scientific achievements (3-5 people from individual *Scopus ASJC*), taking into account the number of publications, the total number of citations and the Hirsch index, as well as 17 young scientists. The key and outstanding young MUB researchers usually represent several (priority) research areas.

**Stage 2A** Initial analysis of strengths, weaknesses, opportunities and risks done by the leaders of priority research areas and young distinguished scientists in these areas.

**Stage 2B** Independently, as part of the project entitled "Strategy of excellence of the Medical University of Bialystok the Research University of the future" an analysis of the research potential of the MUB was carried out, identifying strengths and weaknesses of the University by the Investin Sp. z o. o. company (the analysis was carried out between 16.04.2019-13.05.2019). The aim of the analysis was to prepare guidelines and recommendations in line with the provisions of the Act on *the Law on Higher Education and Science* and the provisions implementing the Act on the evaluation of scientific units and the classification of fields of science and scientific disciplines.

**Stage 3** the employees of the MUB Department of Science took care of the collection and systematisation of data for individual purposes, while the authorities of the University (Rector, Vice-Rectors) took care of the identification of the most important issues.

# Summary

Within each area of the analysis, aspects identified as the most relevant were highlighted.

**Regarding objective 1**, it is to improve the quality of MUB's scientific activity by increasing its impact on the development of world science. Listing the strengths of the University, the high scientific position of the MUB in the country, the dynamic development of research infrastructure until now and the acquisition of significant funding for the years 2019-2023 were highlighted. Analyses of the SCOPUS database identified the following as the key research areas: medicine, immunology, neuroscience and biochemistry /genetics/molecular biology with a higher than average *(field-weighted citation impact in the range of 1.16-1.7*) and a high percentage of scientific articles published in international cooperation (21.4-38.8%). Among scientists of key research areas with the highest scientific achievements (1.5-10.5 thousand citations with the Hirsch index 20-45) the most common are people in their 40s and 50s and with high development potential. Noteworthy is the high achievements of young scientists (most under the age of 30), whose work has been cited several hundred times (Hirsch index 7-13). The SWOT analysis highlights the growing interest in the "OMICS" sciences and the increase in coordinated large-scale activities in the field of these studies – from the preparation of databases, through standardized procedures for obtaining clinical material, biobanking and laboratory analysis to large-scale analysis of biomedical data using methods and technologies of *machine learning and artificial intelligence*, while representing the key opportunity to implement a coherent and well-prepared programme for the development of HD (high-definition) medicine.

In particular, the analysis highlights the preparation of infrastructure and personnel for applying for external funding, including the Medical Research Agency, due to the presence of qualified personnel and unique scientific units in the country: Clinical Research Centre, Biobank, Department of Population Medicine, Regenerative Medicine Centre, Innovative Research and Personalized Medicine Centre, Centre for Artificial Intelligence in Medicine and the concentration of areas and research teams.

Regarding **objective 2**, the chances of increasing the international importance of the MUB's activity are in the creation of a cooperation network with international scientists through joint programs for doctoral students and internships of young scientists, the start of education in the fields of study conducted in international cooperation (such as biostatistics), applying to key international scientific consortia, hiring university professors and scientists   
from renowned centres around the world for projects, and setting up *Advisory Boards* of world-renowned scientists to implement programmes of scientific development strategies in priority areas.

Improvement of the quality of student and doctoral student education **(objective 3)** i.a. through the Interdisciplinary Doctoral School promoting research in priority research areas, introduction to the curricula of subjects in the field of research methodology, biostatistics, bioinformatics and through conducting doctoral dissertation procedures in international cooperation (international supervisors, co-supervisors and auxiliary supervisors) in English. It is also crucial to implement a system of scholarships for high school graduates with the best results in the secondary school final examination and winners of nationwide subject competitions, and to create a transparent system of employment in the MUB for the best students and doctoral students.

Part of this goal will be to obtain significant funding for student training abroad in the implementation of the most modern diagnostic and therapeutic methods.

The professional development of the MUB employees **(objective 4)**, in particular young researchers, should be achieved by staff trainings in the best scientific centres in the world, creating a system of own teams for outstanding young scientists with the provision of research infrastructure, creating opportunities to combine professional and scientific development with financial success (commercialisation of research, clinical trials) and by implementing a flexible choice of academic career path.

When analysing the prospects for improving the quality of university management **(objective 5)**, the attention was drawn to the need to improve the IT management system, to create a system for promoting groups/leaders who attract key National and European research projects, to create a team of competent administrative managers at the University supporting the management process. Project management courses (PRINCE) and training for leaders (Rector's authorities, Dean's authorities and Chancellor's authorities) organised with acquired project funds can be a key element of improvement in this area.

**The conducted SWOT analysis is the starting point for the development of proposals for the strategic objectives of the MUB.**

**The SWOT analysis of the MUB as part of the Project "Initiative of excellence – research university"**

1. **Improvement of the quality of the scientific activity of the MUB**   
   Increase of the impact of the University's scientific activity on the development of world science,   
   in particular in priority research areas with high potential for development, in which the University plans to intensify scientific activity, hereinafter referred to as "priority research areas"

| **Strengths** | **Weaknesses** |
| --- | --- |
| * High scientific position of the MUB in the country – as one of 3 medical universities in Poland received the status of the Leading National Research Centre KNOW (2012-2017) * The only institution in eastern Poland participating in the competition for the "research university” * The current dynamic development of research infrastructure (more than PLN 250 million was raised in 2007-2018) and the raising of significant funds for the development of research infrastructure for the years 2019-2023 (i.a. under the Territorial Contract, approx. PLN 150 million) * According to the SCOPUS database, the number of citations above average in key research areas (field-weighted citation impact): in medicine 1.16, in immunology 1.42, in neurosciences 1.7 * Acc. to SCOPUS database, the percentage of scientific articles published in international cooperation in key research areas: medicine 21.4%, immunology 38.8%, neurosciences 34.6%, biochemistry/genetics/molecular biology 24.7% * Development and implementation of modern technologies unique in the country: metabolomics, genomics, epigenomics, proteomics (Mobit grant from the Strategmed programme PLN 20 million) * Coordinated activities in the field of large-scale omic research – from the preparation of databases, through standardized procedures for obtaining clinical material, biobanking and laboratory analysis, to large-scale analysis of biomedical data using *machine learning and artificial intelligence* methods * Young (up to 30 years of age) dynamically developing staff with significant scientific achievements (Hirsch index: 7-13) * The largest number of foreign professors employed in the country in recent years (in terms of the total number of research employees) * Creation of a unique database in the field of the genome/metabolome of lung cancer, population studies (Białystok PLUS), cohort studies in the field of metabolic diseases (1000PLUS) * MUB is the only university in the country with a certificate of compliance with the principles of Good Laboratory Practice (GLP) in the field of testing toxic properties on animals  in the Experimental Medicine Centre * Unique imaging infrastructure (i.a. PET-MRI scanner) and continued development of theranostics (Molecular Imaging Laboratory) * Start of education in Biostatistics – training of research support staff | * Insufficient (but growing) number of research grants, including international ones * Significant fragmentation of research areas – insufficient interdisciplinary cooperation between researchers in different faculties * Too little (but growing) funding for student-led research * Too few international scientists conducting research at the MUB * Insufficient number of scientists working in the field of biostatistics and big data analysis * Too long waiting times for reagents due to public procurement procedures * Insufficient number of scientists who are in international scientific institutions, grant awarding institutions, *editorial boards* of prestigious international journals * Insignificant scientific cooperation with large companies with global reach in the field of biotech and big-pharma * Limited financial resources in attracting the best graduates to scientific work and stay at the University * The current lack of flexibility in choosing a career at the University - the need to combine scientific and teaching work (or scientific and clinical - in the case of physicians). |
| **Opportunities** | **Risks** |
| * Coherent and well-prepared programme for the development of HD Medicine (high definition) (2019-2024) – received a grant from the Polish Prime Minister (PLN 50 million) * Preparing infrastructure and personnel for applying for funding from the Medical Research Agency, due to the presence of unique scientific units in the country: Clinical Research Centre, Biobank, Department of Population Medicine, Regenerative Medicine Centre, Innovative Research and Personalized Medicine Centre, Centre for Artificial Intelligence in Medicine – the concentration of areas and research teams. * Unique in the country infrastructure of animal testing with GLP certificate (Experimental Medicine Centre) * Use of the newly created company Genomika Polska to achieve the position of the leader of genomic research in Poland * Use of scientific  and infrastructural potential for commercialisation of research and increase revenues of the University from research and implementation activity * Creation of an international scientific network – including international PhD students from the Impress project under the Horizon 2020 programme * Planned 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 and artificial intelligence methods  in the analysis of biomedical data * Introducing flexibility in university career choices – opportunities to focus only on science * Increase in the employment of foreign professors from world-renowned institutions * Creation of a permanent fund for training and scientific internships (abroad) – possibility to develop the laboratory workshop, a good source of new scientific ideas, possibility to establish scientific cooperation | * No sustained significant increase in funding for scientific development in the absence of "research university status" * Overloading innovation and scientific development leaders with other responsibilities at the University, including teaching and organisational activity * Too small research teams in priority research areas * Low financial attractiveness of scientific career among physicians (scientists) * Lack of support from local/ central authorities to maintain the leading role of university hospitals as a key location for the development of clinical medicine * Increase in costs of maintaining facilities where scientific activities are carried out * Departure of successful scientists to centres that can offer better financial conditions * Small number of regional business partners able to implement innovative solutions and able to finance research in medical fields |

1. **Increase in the international importance of the MUB's activity** Strengthening research cooperation with internationally renowned scientific institutions, in particular in priority research areas

| **Strengths** | **Weaknesses** |
| --- | --- |
| * Innovative research topics on the use of large-scale techniques in high-definition medicine (HD), population and clinical studies * Existing cooperation with prestigious scientific centres in the world, inter alia, *NIH Bethesda, USA; Mayo Clinic, USA; University of Pennsylvania, USA; INSERM France; University of Zurich, Switzerland; University of Copenhagen, Denmark; Heidelberg University, Germany, CEMBIO Madrid, Spain; Hasselt University, Belgium; China Agriculture University, China* * Developed cooperation in research – 21.7% of publications were published in cooperation with international centres (2013-2017) according to the Web of Science * Joint projects in the scope of the *Centre of Innovative Research CEMBIO Madrid, Univ of Haselt*, acquired under the Horizon 2020 * *Białystok PLUS* population studies conducted jointly with the *University of Greifswald* (SHIP project) in accordance with the standards of the national cohort in Germany * Cooperation with leading international centers in the field of research on diabetes prevention, nutra- and pharmacogenomics *(Lund University, Karolinska Institutet, Harvard University)* * Scientific and financial cooperation with Indivumed GmbH – global partner in Personalized Oncology (50:50 investment in research infrastructure €4 million) * Modern MUB facilities, attracting international interest * Good command of English among academic teachers * Growing prestige of the MUB journal *"Advances in Medical Sciences" (Elsevier)* | * Insufficient cooperation with leading research centres in Europe and the world * Low number of joint grant applications with international partners at the European level * Low number of joint projects and publications with scientists from the world's leading universities (Top50) * Low academic mobility of young staff – lack of motivation for trips abroad * Lack of experience in coordinating large international research projects * Lack of MUB scientists in the authorities of European scientific societies * Insufficient recognition of the MUB as a scientific centre with global potential * Low number of prominent international scientists invited to conferences or symposia organised by the MUB * Large fragmentation of research topics (more than 500 statutory projects per year) |
| **Opportunities** | **Risks** |
| * Networking with international researchers via joint programmes for doctoral students and internships for young researchers (Cross-sectoral doctoral studies - ImPRESS and interdisciplinary, international doctoral studies in medical biology and pharmaceutical sciences at the MUB) * Start of education in Biostatistics field of study in cooperation with Hasselt University, Belgium – training of staff dedicated to research * Organisation of joint research in the field of lifestyle diseases prevention and research in oncology – the development of cooperation with Indivumed GmbH * Creation of the Map of Research Potential of the MUB – increasing visibility on the Internet and increasing the opportunity to attract international partners * Establishment of the International Cooperation Department and adoption of the MUB internationalisation strategy * Joining strong international scientific consortia * Hiring scientists from renowned centres around the world for projects * Creation of the *Advisory Board* composed of world-renowned scientists to evaluate programmes of scientific development strategies in priority areas * MUB website in 9 languages (Polish, English, German, Chinese, Swedish, Norwegian, Spanish, Russian and Finnish) | * Departure of the most talented scientists to international centres due to significantly higher salaries abroad * Unequal competition with centres from other countries, where the development of science and cooperation is considered a priority by the authorities of the country * Insufficient increase in the number of scientists and technical staff executing international projects * Lack of a coherent and long-term system for supporting science in Poland * Peripheral location of Białystok and the lack of a regional airport |

1. **Improvement of the quality of education at the MUB**   
   Improving the quality of education of students and doctoral students, in particular in the fields of study and scientific disciplines related to priority research areas, taking into account the need to involve students and doctoral students   
   in the conduct of research, as well as the need to effectively compete   
   for the best candidates for studies and doctoral schools (including ones from abroad) and talent management

| **Strengths** | **Weaknesses** |
| --- | --- |
| * 1st-3rd places in Poland in the rankings of the pass rates for professional examinations  in subsequent editions of the Medical Final Examination (LEK) and the Medical-Dental Final Examination (LDEK) * Distinction for the English Division for the highest level of medical education in English in Poland (Commission for Education Conference of the Rectors of Academic Medical Universities KRAUM, 2019) * 5 doctoral programmes, including one for international students – *International Interdisciplinary PhD studies in Biomedical Research and Biostatistics. Supporting the career and training in omic-based research and biostatistics by inter-national and –sectoral mobility” (ImPRESS)* * Financing grant competitions for students under the KNOW funds and the MNiSzW grant * Over 400 students from 37 countries: Norway, Sweden, Germany, Spain (and others) studying in English * Over 5500 students studying in Polish * Open expert lectures by professors and other researchers from institutions abroad * Modern teaching infrastructure: Centre for Medical Simulation, Euroregional Pharmacy Centre, Health Sciences Centre and a state-of-the-art clinical infrastructure (completed expansion of the University Hospital in 2019) * Co-organisation of the MUB Technotalenty competition for young scientists conducting research in the field of medical sciences | * Narrow range of education offer in English (only medicine), no admission process in the field of pharmacy, no English-language education offer in the field of health sciences. * Insufficient e-learning offer and the use of online learning. * Limited opportunities for further development of clinical training due to insufficient cooperation with local government hospitals. * Inability to conduct all practical classes in suitably small groups. * Too few students implementing individual courses of study ensuring possibility for scientific trips and conducting research. * Too low scholarships for international students (except for ImPRESS PhD students) |
| **Opportunities** | **Risks** |
| * Implementation of a scholarship system for high school graduates with the best results in the high school final exam and winners of Polish nationwide subject competitions * High scientific activity of students (17 organisations and 87 science clubs!) and doctoral students - i.a. organisation of the annual *Białystok International Medical Congress for Young Scientists* (about 400-600 participants) * Conducting doctoral dissertation procedures in international cooperation (foreign supervisors) in English * Introduction to the curricula classes in the scope of research methodology, biostatistics, bioinformatics * Development of student guides with descriptions of individual subjects included in the study programmes * Raising PLN 9 million for student trainings in Switzerland and Italy in the implementation of the most modern diagnostic and therapeutic methods in dentistry (2019-2022) * Interdisciplinary Doctoral School promoting research in priority areas * Creation of a transparent system of employment in the MUB for the best students and doctoral students * Actions to promote the brand and prestige of the MUB at home and abroad in order to compete more effectively for the most talented student and doctoral school candidates * Plans to expand the teaching infrastructure (PLN 30 million from the Ministry of Science) and use the local government clinical infrastructure * Construction of a new teaching centre with large lecture halls and specialist laboratories * Free specialist education courses, including English courses for teaching and research staff * Creation of a platform bringing together all recorded and made available materials for students as part of the education using e-learning methods | * No improvement of geographical attractiveness due to the lack of proximity to the airport and high-speed rail connections * Outflow of young doctors and academic teachers to other employers due to the relatively low wages at the University and in the University Hospital * Risk of losing the right to conduct education at the Faculty of Medicine in the event of obtaining a low grade in the next evaluation of the Ministry of Science |

1. **Professional development of MUB employees** Preparation and implementation of comprehensive solutions for the professional development of MUB employees, in particular young scientists (persons engaged in scientific activity) Who: 1) are doctoral students or academic teachers – and do not have a doctor's degree, or 2) have a doctor's degree, but no longer than 7 years and are employed at the MUB

| **Strengths** | **Weaknesses** |
| --- | --- |
| * Large, dynamic, young staff (under 30 years of age) with significant academic achievements (Hirsch index: 7-13) * Numerous winners of competitions of the Ministry of Science for Outstanding Young Scientists (scholarships of the Minister, "Generation of the Future”) * Transparent rules for competition procedures for posts and criteria for scientific evaluation enabling fast promotion of young scientists * Pro-quality research scholarships for students and doctoral students * Possibility to apply for MUB own funds for projects dedicated to young scientists * Active participation of MUB academic teachers and students in international cooperation - more than 1200 trips a year to international conferences, trainings, internships, workshops, symposia, congresses, etc. * Numerous programmes for research scholarship trips within the framework of obtained external funds for young scientists, students and doctoral students * Modern clinical and research infrastructure (acquired approx. PLN 400 million non-budgetary funds for infrastructure) | * Too few external grants for young scientists and doctoral candidates * No incentive system for hiring the best students and doctoral students at the University after graduation * Difficulties in combining full-time clinical work with scientific work requiring significant time commitment * No effective incentive system for Mentors/ Supervisors of young scientists * No incentive system for young scientists to undertake internships and training abroad |
| **Opportunities** | **Risks** |
| * Ensuring continued access to external funding for the training of scientific staff in the best research centres in the world * Encouraging young physicians to participate in the programme of the Minister of Health for off-site trainings in prestigious American centres * Creation of a system of own research teams for outstanding young scientists with provision of research infrastructure * Focus of the distribution of funding and institutional efforts on the further development of young scientists in priority areas * Creating opportunities to combine professional and scientific development with financial success (commercialisation of research, clinical trials) * Introducing a flexible choice of academic career path (research/didactic/research-didactic) * Provision of training in mentoring, writing scientific articles, public speaking and preparing presentations during conferences * Free language courses for young employees as well as intercultural and interpersonal communication courses * Implementation of the GRANT+ financial award system for obtaining external grants | * Possibility of the outflow of young outstanding scientists due to better financial and research offers of international centres * Declining interest in research and academic careers - outflow of young physicians and other academic teachers to other employers due to relatively low salaries at the University and the University Hospital * Limiting the possibility of additional employment of doctoral school students while offering relatively low scholarships * Elimination of the requirement of doctoral promotion when applying for the title of Professor by the new legislation |

**5. Improving the quality of MUB management** increasing the quality of MUB management, including qualitative organisational changes

| **Strengths** | **Weaknesses** |
| --- | --- |
| * Strong position of the University authorities * Competent and committed University administrative staff * Effective Promotion Office and Press Officer: a wide flow of information to staff and students  about current University affairs, planned changes (e-mails, updated website, interviews and articles in Medyk, social media i.a. Facebook, Twitter) * Defined rules for promotion and criteria for scientific promotion (habilitation, professorship) * Good and substantive relations between the University authorities and the student and doctoral governments – numerous direct consultation meetings * Implemented incentive system of awards for publications and obtained grants * Creation of a motivational algorithm for allocating internal funds for the so-called statutory research * Implementation of assessment surveys of academic teachers for the evaluation of research and teaching * Implementation of the Integrated Quality Management System * Functioning of IT tools to support all branches and areas of activity of the MUB (teaching, administration, surveys, etc.) * Efficient system for raising additional funds for investment and development programmes | * No "professional" management education of Rectors and Deans - functions exercised by elected academic teachers * No comprehensive salary differentiation system to increase motivation and reward the best employees * No system for the evaluation of administrative staff and no defined rules for the promotion of administrative staff * IT system failures in some areas related to teaching * Excessive burden on certain administrative departments due to insufficient staffing * Public procurement system operating too slowly, resulting in long waiting times for reagents |
| **Opportunities** | **Risks** |
| * The Act 2.0 The Law on Higher Education and Science increasing the scope of the Rector's power and enabling more efficient management of the University * Creation of a system to promote groups/leaders for key domestic and European research projects * Creation of a team of competent "administrative managers" at the University to support the management process * Conducting PRINCE project management courses for the management administration * Raising project funds in 2019 for training of the management staff (Rector's, Dean's and Chancellor's authorities) * Good cooperation between the University authorities and the management staff of the University hospitals as places of teaching and clinical research | * Possible lack of continuity of the University's development strategy related to rotation of the University authorities * Potential expectations of lower academic and teaching requirements by academic teachers hindering the development of the University and lowering the level of education * Excessive bureaucracy of administrative processes, which increases the time required to complete tasks * Low salaries of the University administrative staff – lack of proper administrative support * Instability of organisational and legal solutions related to the health care and the functioning of university hospitals * Insufficient funding of health services, which may adversely affect the financial performance of university hospitals and salaries of the employees of clinical units |