



An outline of the history of the Oncology Institute in Warsaw, on the 90th anniversary of its opening

Janusz Meder, Aleksandra Towpik, Jan Walewski

Maria Skłodowska-Curie National Research Institute of Oncology, Warsaw, Poland

Ninety years ago, The Maria Skłodowska-Curie Radium Institute in Warsaw was officially opened. The ceremony was marked by Skłodowska's honourable presence as the author of the idea, the co-founder and patron of the Institute. The opening of the first modern institution which combined research and clinical activity was a breakthrough moment in the history of Polish oncology. This article presents an outline of the history of the Institute from the moment of the creation of the idea, through the hardships undertaken by the distinguished personalities involved in the organisational work during the first years of the existence of the centre, the busy period during its medical and academic heyday interrupted by the outbreak of the Second World War and then the period of restoration from the destruction that had previously ensued. The paper also presents the period when new oncological specialisations were created, which started at the Institute at Wawelska street and the invaluable role the Institute staff played in the creation of the structures of modern oncological care in Poland. The intellectual resources were created by a generation of the Institute staff on the foundation of the innovative concept laid down by Maria Skłodowska-Curie. She always emphasised the necessity of the continual connection between clinical work and research and the role of interdisciplinary work as the basis for progress in combating oncological diseases. These efforts consist of a unique and special value, which is also a commitment to and challenge for the future.

Key words: history of oncology, Radium Institute in Warsaw, the history of the Maria Skłodowska-Curie Institute of Oncology

Introduction

Ninety years ago, on Sunday, 29th May 1932 in Warsaw, at Wawelska 15, in the vicinity of the Lubecki Colony, the Maria Skłodowska-Curie Radium Institute was officially opened. The ceremony was marked by Skłodowska's honourable presence as the author of the idea, the co-founder and patron of the Institute. This event marks the beginning of modern institutionalised oncological care in Poland.

The creation of the Institute was by all means an exceptional effort – both on the part of the people directly involved in the creation of the Institute, among whom special attention should be paid to the sister of the great Polish researcher, doctor Bronisława Dłuska, and also the contributions of much of society which was involved in the creation of the Institute on an unprecedented scale, providing donations, buying shares (“bricks” to build the Institute) and taking part in numerous fundraising events.

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The building of the Institute was an unprecedented event, not only on the scale of an impoverished and devastated country, as Poland was, but it was also one of the most modern medical institutions in Europe, or perhaps even worldwide. This carefully planned and designed centre added new value, but failed to match the Polish reality with its potential initially unappreciated. Professor Franciszek Łukaszczyk, the first director of the institute, observed that this event was much ahead of the times, and the country was in fact not ready for such a modern institution [1]. Within a few years of the opening, however, great progress was being made. Its significance is seen even more clearly once we realise the hardship of the work and the contemporary challenges of the time that were being faced.

The beginnings of oncology in Poland

In 1921, Maria Skłodowska-Curie made her first journey to America. The main purpose of the trip was to accept, from the hand of President Warren Harding, one gram of radium for the Radium Institute in Paris. The purchase of this precious element was possible thanks to the fundraising action initiated by journalist and activist, William B. Meloney (proper name: Marie Mattingly Meloney) [1]. On 15th June, during a meeting with the representatives of the Polish diaspora, in Chicago, Skłodowska said:

Independent Poland, like any other country should have its own radium institute. The beginning of this Institute was in the radiological laboratory, started, on my initiative in Warsaw by the Warsaw Scientific Society. We need a large sum to transform this laboratory into an institute created not only for scientific research, but also for the treatment of patients, irrespective of their financial status. If the Polish Colony in America could set itself the goal of the creation of this Institute as fast as possible, this would be by all means an act of great merit... [2, 3].

With these words, Maria Skłodowska Curie, for the first time publicly, called for the support of the idea to create the institute in Warsaw [4]. Given, the time period, this was an extremely daring idea – as it was just a few months after the end of the Polish-Bolshevik war. The Polish Republic had been an independent country for only three years, whilst the restoration of the state after partition and after the destruction of the war was a tedious process, requiring a lot of time and effort. All state institutions had to be created from scratch and diverse administrative systems integrated. Divisions were also present and always increasing in society and the academic life; the currency was unstable, the quality of life much lower than in the West; whilst unemployment and inflation were on the continual rise. Not only was infrastructure lacking, there was also significant shortage of staff. People living in urban areas particularly had very poor access to healthcare, whilst the number of doctors insufficient. However, at the same time, civil attitudes and self-government were being coined, with intellectual elites playing a key role in their work towards a better society and the young developing state.

Maria Skłodowska-Curie, during her address in Chicago, mentioned the Miroslaw Kernbaum Radiology Laboratory, created at the Warsaw Scientific Society on Kaliksta street (currently Śniadeckich) in Warsaw; it was the first scientific institution on the Polish territories which was actively co-created by Maria Skłodowska-Curie. She agreed to manage the institution from Paris, sending to Warsaw two of her most talented assistants: Jan Danysz and Ludwik Wertenstein. In November 1913, she took part in the opening ceremony in person. Maria Skłodowska-Curie planned to pay regular visits to the laboratory, planning organisational and research undertakings [5–8] and in 1921 she donated the amount of 1000 dollars from the Polish diaspora in America, as it was initially assumed that this would be the basis for the Radium Institute [8].

Oncological diseases made up a significant issue from an epidemiological point of view for doctors in the mid-19th century; therefore at the turn of the 19th and 20th centuries, the first association which had as its objective cancer studies and treatment were created. [9]. The discovery of X-rays by Wilhelm Conrad Roentgen, and first of all, the discovery of radium by Maria and Peter Curie paved a new path in the fight against oncological diseases. Skłodowska-Curie laid the foundations for oncology as a science and a medical discipline [10].

In Poland, in 1906, upon the initiative of doctor Józef Jaworski and doctor Mikołaj Rejchman, the Committee for the Cancer Study and Control was set up. Their efforts were concentrated mostly on statistical research, prophylaxis and attempts to encourage the medical milieu to undertake scientific research. It was in 1912 that the idea was put forward of organising a department for the study of cancer in Warsaw [11]. Yet, it was only after regaining independence that a chance would come to create structural solutions. In 1921, the Polish Committee for Fighting Cancer (PKdZR) was founded by Henryk Barylski, Czesław Jankowski, Stefan Sterling-Okuniewski and Bronisław Wejnert [9]. The main task of the committee was to organise the structures for cancer treatment and research. The committee gathered epidemiological data, carried out educational initiatives and dealt with health education, as well as organised outpatient clinics for cancer patients. Soon, regional committees were to be founded in Krakow, Łodz, Poznan, Vilnius and Lviv. In 1923, the first issue of the *Journal of the Polish Committee for Fighting Cancer* was published (*Nowotwory* continue that heritage) as one of the first periodicals in the world devoted solely to cancer treatment [12].

In 1924, the committee organised the First Polish Meeting for Fighting Cancer in Warsaw. During the meeting, some resolutions were passed, which now are regarded as the first Polish Cancer Control Program. This strategy defined three main objectives: scientific, clinical and epidemiological studies; dissemination of knowledge of cancers and health education; creation of oncological centres [13]. It was then that plans for the foundation of oncological centres in larger cities around the Poland of that time were laid down; the active process

of building the Radium Institute in Warsaw was begun. The centres existing up to that moment were widely dispersed and rather limited in size. Apart from a few university centres, also some smaller, either community or private hospitals were set up, they did not have any great success in radium therapy. According to estimate data, even before the creation of the Radium Institute, Poland had *circa* 3 grams of radium, yet the dispersion of this element and its quality, and foremost the lack of qualifications of the staff, paired with inadequate knowledge about radium's manner of action, lead to the fact that the treatment results were greatly unsatisfactory and purely incidental, whilst work with radium was also frequently hazardous for the doctors involved [8].

The opening of the Radium Institute in Warsaw – a modern institution combining academic and clinical activity – marked a ground-breaking moment in the history of Polish oncology. As designated, the institute promoted teamwork, whilst knowledge about cancers which previously had only a character of descriptive learning was transferred into modern clinical science, based on the knowledge of oncological processes and the command of treatment tactics and techniques [14].

During the visit which Maria Skłodowska-Curie paid to Warsaw in October 1921, the idea of creating an institute finally started to take shape. At the meeting with the representatives of women organisations, she said: *If you really want to give me proof of your friendship and respect, please see to the creation of the Radium Institute in Warsaw. This is a task for you as women since our experience so far shows that, especially in female patients, the treatment of malignant tumours with radium gives invaluable results* [15].

The scientist, not only gave the ideas but also started to act herself with full energy and determination, establishing contacts and writing numerous letters. It was in November that she wrote to Ignacy Paderewski: *I dare to ask you for the support of fundraising for a cause which I greatly desire to pursue. It is about the creation of a central Radium Institute in Warsaw which task would be to treat patients with radium and carry out scientific research related...* [16].

Since its very beginning, the Warsaw Institute was supposed to be a comprehensive institution, where patient treatment would be carried out together and in connection with scientific research. Skłodowska, on every occasion, would stress the double role of the future institute. The plans were getting their final shape at the moment when the institution in Paris was still struggling with a painful inadequacy of the hospital section, so while planning its sister institution, Maria wanted to create a comprehensive centre in which the two areas of activity would make up an organic whole. Such a type of centre was a completely different and novel solution [17].

The creation of the Radium Institute

It is impossible to name all the distinguished persons involved in the organisation of the institute. The driving force behind

contemporary social and scientific organisations, also extremely dynamic and determined female organisations and, finally, the ability to pursue such an important cause in spite of all divisions – these all make up an unprecedented example even today. The Institute would not have been created if it had not been for Maria's elder sister, doctor Bronisława Dłuska, and also her brother, doctor Józef Skłodowski had been involved in the creation of the Institute since its very beginning [3, 18, 19]. It was in December 1921 that he wrote to Maria stating that he *had submitted the project of an act of the Association of the Radium Institute, modelled on the statute Józef Mianowski Fund* [20]. The founding of the association under the honorary patronage of Curie-Skłodowska gave a formal framework to her dream, making it a point where there was no turning back.

In 1923 in France, the 25th anniversary of the discovery of radium was celebrated. On this occasion, on 26th December at Sorbonne University, an official celebration was held, whilst the French government awarded Maria with an extraordinary distinction – a lifetime grant of 40 000 francs per year. The Polish state could not afford such a gesture at that time. Subsequently, the Polish Committee for Fighting Cancer (PKdZR) made an appeal to Polish society to donate to the "National Gift for Maria Skłodowska-Curie", which was supposed to be the Radium Institute named after her [21].

In March 1924, the Committee of the Maria Skłodowska-Curie National Gift was created with the intention to found the Radium Institute in Warsaw. Its honorary presidency was entrusted to the President of Poland, Stanisław Wojciechowski, whilst the post of the President of the Management Board was conferred to the Speaker of the Senate, Wojciech Trąmpczyński; the Deputy President of the Committee was professor Antoni Ponikowski, the then rector of Warsaw Polytechnics and the secretary – Stefan Sterling-Okuniewski, who was the secretary of the Polish Committee for Fighting Cancer and current director of the committee's journal. The committee members also included members of the Board of Ministers, representatives of universities, scientific institutions and associations, and clergy of various denominations [3].

The institute creation was gaining momentum. The appeal garnered a wide and enthusiastic response. The University of Warsaw donated a plot of land at Wawelska street for the site. It was not only institutions and elites that responded to the call – a common cause and the prestige that Maria enjoyed united the society, irrespective of one's financial status and beliefs. It is remarkable that the stickers with an image of Skłodowska-Curie – which were the donation certificates with a nominal value of 10 groszes – were sold at the number exceeding one million and a half copies [3]. The committee was very active in publishing and advertising – brochures, Maria's portraits and postcards with donation certificates were sold. The branches of the committee were also active in other cities [22, 23].

And so, on 7th June 1925, the ceremony of placing the ground-breaking plaque for the construction of the Institute

was held with the participation of Maria Skłodowska-Curie, who came for this occasion from Paris; the President of the Republic of Poland, Stanisław Wojciechowski; representatives of the academic, political and cultural milieu and also residents of Warsaw who turned out in large numbers [24]. In 1926 construction started at full speed (fig. 1–3).

The Warsaw Institute was intended to be a sister institution of the Radium Institute in Paris. Its first architect was Tadeusz Zieliński, and, after his death in 1925, the work were continued by Zygmunt Wóycicki [3, 22]. At each stage, the project was consulted extensively with Maria Skłodowska-Curie and professor Claudius Regaud, a pioneer in radiotherapy and the head of the Pasteur Laboratory at the Paris Institute. In Warsaw, the undertaking was supervised by Maria's sister, doctor Bronisława Dłuska (fig. 4).

Skłodowska attached a lot of importance to the preparation of scientific workshops and looked over even the smallest details herself. However, with the course of time, in the face of chronic financial difficulties, it became clear that the scientific section of the institute would not be completed anytime soon [25].



Figure 1. The Radium Institute at Wawelska street in Warsaw on its inauguration day (from the collections of the National Digital Archives)



Figure 2. Maria Skłodowska-Curie and the President of Poland, Stanisław Wojciechowski (first from the right) during the ceremony of laying the cornerstone for the construction of the Radium Institute. Above Skłodowska-Curie, there are (from the left), the Rector of the University of Warsaw and the President of the Association of the Radium Institute – Professor Franciszek Krzysztalowicz, doctor Bronisława Dłuska, doctor Kazimierz Dłuski and doctor Józef Skłodowski (from the collections of the National Digital Archives)

At the end of October 1929, Maria Skłodowska-Curie received from the hands of the President of the United States, Herbert Hoover, a symbolic check for 50 000 US dollars for the purchase of radium for the Institute in Warsaw. The money came from the fundraising actions among American women and the Polish diaspora. The *spiritus movens* of the entire undertaking was again William B. Meloney. The visit, however, was overshadowed by an event which impacted the fate of the entire world at that time – 24th October went down in history as “Black Friday”: the Wall Street stock market crash unleashed the greatest economic crisis in the history of the world, spre-

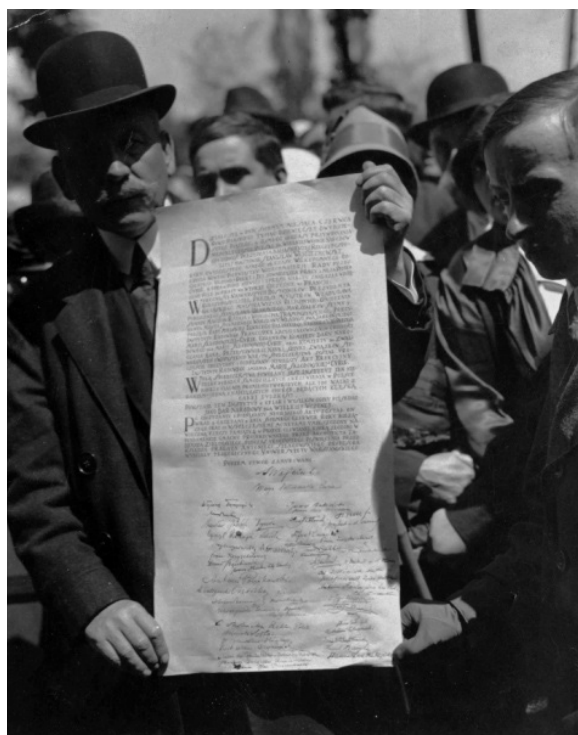


Figure 3. The founding act of the Radium Institute, 7th June 1925 (from the collections of the National Digital Archives)



Figure 4. Maria Skłodowska-Curie accompanied by President Ignacy Mościcki, Professor Stefan Pierńkowski (first from the right), doctor Bronisława Dłuska (first from the left) and Professor Franciszek Krzysztalowicz (second from the left) while visiting the construction site of the Institute, 4th October 1928 (from the collections of the National Digital Archives)

ading immediately to Europe; in Poland, it also deteriorated an already difficult economic situation, leading to a significant slow-down in the collection of money for the completion of the institute. That said, the drive to obtain resources for the purchase of radium was a starting point for another social initiative : an illustrated book presenting the state of the construction of the institute [22]. A donation certificate could be bought for 100 zloties and thus the benefactor could get the rights for a memorial plaque in the future institute. The cause was supported by the Ladies Club at the Polish Committee for Fighting Cancer. Also the Committee of United Female Associations was set up for the completion of the Maria Skłodowska-Curie Radium Institute. Michalina Mościcka and Aleksandra Piłsudska took the honorary patronage over the committee (fig. 5) [26].

Thanks to the funds brought from the USA on 12th April 1930, Maria Skłodowska-Curie signed a contract for the supply of radium to Poland with Union Minière du Haut-Katanga (an English-Belgian mining company that were active in Africa on the territory of the current Republic of Kongo) and 833.23 mg of radium was purchased for 54 574 dollars and 90 cents. Maria also received some part of this element as a gift from the company. Thanks to this, Skłodowska provided 1033.21 mg of radium for the Institute, in the form of platinum tubes and needles, labelled later on as RMS (Radium of Maria Skłodowska) [8, 27, 28].

In the end, given the incessant financial shortages, it was necessary to take out a financial loan for completion of construction [1]. On 21st January 1931, the Polish Parliament adopted a resolution on the donation of a state-owned estate at Wawelska street, to the Association of the Radium Institute for the *completion of construction and the fastest launch of the institute*, whilst the justification of the resolution stated that, *the benefits for the state in starting the institute are extremely great* [29]. Thanks to this it was possible to make a mortgage out at the Insurance Board for Academic Staff [1]. The clinic was thus equipped, yet the resources did not suffice for the completion of the research buildings (fig. 6–8).



Figure 5. The opening ceremony of the Second Cancer Meeting on 23rd March 1929 – Professor Franciszek Krzyształowicz presents the report from the activity of the Committee of the Radium Institute and the account of the progress in the conduction (from the collections of the editing office of the Maria Skłodowska-Curie National Research Institute of Oncology [MCSNRIO])

The first patients were admitted to the institute in January 1932. Work in the first months of the year was extremely difficult. The committee funds were lacking and the institute was severely in debt. Between mid-January and the date of the official opening of the institute, only 40 patients were hospitalised.



Figure 6. The building of the clinic of the Radium Institute during the completion works, a view from the side of the planned garden (from the collections of the National Digital Archives)



Figure 7. The building of the scientific laboratories of the Radium Institute – finishing works (from the collections of the National Digital Archives)

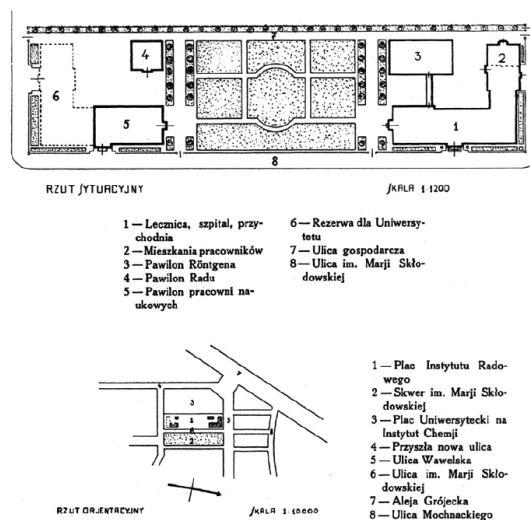


Figure 8. The views of the buildings of the Radium Institute as designed by Tadeusz Zieliński and Zygmunt Wóycicki – as in the brochure published in October 1929: *The State of the Construction of the Radium Institute...* [22]

Unfortunately, the official opening did not signify the end of the financial problems for the institute, which was supposed to be a self-sufficient centre which would earn money on treatment services provided, yet both the patients and the doctors were quite distrustful about the new methods of treatment. This is how the institute director, Franciszek Łukaszczyk, recollected the period: *It crossed my mind that Poland had been provided such an institution – at that time one of the few in the world – thanks to Maria Skłodowska-Curie. Yet it was too early for the current state of medicine development in Poland and thus the institute was isolated and without the appropriate resources...* [1].

The beginnings of the Institute's activity

The opening ceremony of the Radium Institute was held on 29th May 1932 with the participation of Maria Skłodowska-Curie, The President of the Republic of Poland, Ignacy Mościcki, Prime Minister Aleksander Prystor and numerous representatives of the realms of science, politics and medicine (fig. 9–13). Skłodowska, when addressing the audience, said: *The Committee... took the right decision, I believe, to open the*

medical treatment department first in order to meet the obligation to offer high-quality therapy, which is ground-breaking and challenging, to Polish society. However, this therapy should always go hand in hand with research, without which no progress can be made. Therefore, I do hope that the launch of the research laboratories and workshops planned for the Institute, will take place shortly after the opening of the medical department... [3].



Figure 9. January 1932 – the meeting with the representatives of the press immediately after the admission of the first patient to the Radium Institute – doctor Bronisława Dłuska (standing in the middle), Maria Pierńkowska (on the left), Lucyna Kotarbińska (on the right); doctor Józef Laskowski (the second from the right) and doctor Franciszek Łukaszczyk (the third from the right); (from the collections of the National Digital Archives)



Figure 10. The opening ceremony of the Radium Institute on 29th May 1932. The ceremony was honoured by the of the President of Poland, Ignacy Mościcki; the Prime Minister, Aleksander Prystor, the Speaker of the Senate, Władysław Raczkiewicz, the Minister of Foreign Affairs, August Zaleski; the Minister of Industry and Commerce, Ferdynand Zarzycki, the Minister of Communication, Alfons Kühn; the Minister of Post and Telegraph, Ignacy Boerner, the Ambassador of France, Jules Laroche (from the collections of the National Digital Archives)

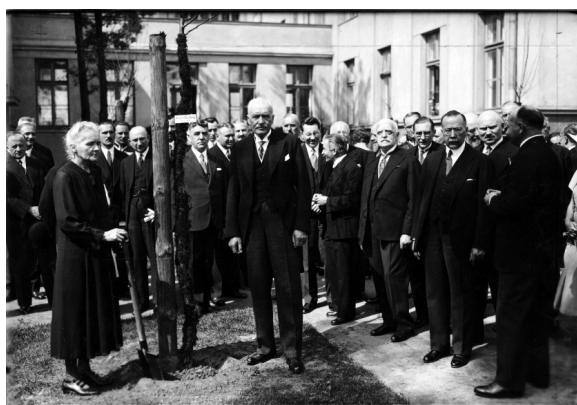


Figure 11. 29th May 1932 after the official opening of the Radium Institute, memorial trees were planted in the Institute's garden. In the front – Maria Skłodowska-Curie and the President of Poland Ignacy Mościcki (from the Collections of the Military History Office)



Figure 12. Doctor Franciszek Łukaszczyk in his office – the first Director and the Chief Doctor of the Radium Institute, 1936 (from the collections of the National Digital Archives)



Figure 13. The opening ceremony of the Radium Institute – from the left, there are standing, the Ambassador of France, Jules Laroche, Maria Skłodowska-Curie, doctor Franciszek Łukaszczyk and Professor Claudius Regaud (from the collections of the National Digital Archives)

This concern for research laboratories hindered Maria from basking in total enjoyment of the opening whilst her worries were not unjustified as the concept of a centre combining on equal terms, the research in the fields apparently remote from medicine with clinical activity was by all means a new thing [30].

The first director of the Institute, and, at the same time, the head of its clinical department was doctor Franciszek Łukaszczyk, who had been preparing for this role for many years, among others, under the supervision of Professor Regaud in Paris. The pathology laboratory was directed by doctor Józef Laskowski. During the first months of the Institute's activity, these were the only doctors in the Institute and were assisted by only one nurse. Soon the team was joined by doctor Halina Noblinówna. Despite his thorough training in foreign centres, young doctor Łukaszczyk saw many cases for the first time and had to think on his feet to find adequate solutions to the problems that appeared [1].

Sadly, Maria Skłodowska-Curie did not live to see the opening of the research laboratories. The physics laboratory was launched as late as 1936, with its head Cezary Pawłowski who was Skłodowska-Curie's student. While preparing for this position, he spent 4 years in the Paris laboratory. In October 1936, Irena Curie and Frederic Joliot-Curie came to Warsaw. They also visited the newly opened laboratory and, in recognition of its high level and meticulous organisation, they donated a precious electromagnet purchased with the money received from their Nobel Prize. In 1937, two other laboratories were opened in the physics laboratory: an X-ray showroom and a laboratory for measuring radioactive objects [30, 31]. Also in 1936, the biological laboratory was opened, which was directed by the talented and highly respected Zygmunt Zakrzewski [32].

In 1937, the number of hospital beds increased from 45 to 100. At that time there were 7 doctors employed: in addition to Franciszek Łukaszczyk, Józef Laskowski and Halina Noblinówna, the staff also comprised Adam Kukliński, Anna Madejczyk, Jerzy Szabunia and Józef Towpik. They all helped pave the way to previously unknown areas and created new standards. In the first years of the Institute's activity, mostly radiotherapy was used, and the relatively few surgeries that were undertaken were performed by surgeons from outside the Institute. An especially novel approach was initiated by Józef Laskowski, consisting of a close correlation between a microscopic image and clinical picture. Such an approach, combining histopathology and clinical radiotherapy, later on named the histo-clinical method, was highly innovative on a world scale. The collaboration between a pathologist and clinician allowed for tracing radiosensitivity and defining prognostic and predictive factors [33]. In addition, the creation of a modern department collecting medical documentation with archival data of typed patient histories where medical secretaries were employed was also a great achievement.

Having gone through difficult beginnings, the Institute started to develop dynamically. The number of patients was growing, results were improving, scientific laboratories started to operate and didactic activity was being organised. With great speed, original scientific papers were starting to be published (by 1939 more than 50 papers had been published) [1]. The number of beds in the clinical was increased to 120, and at the beginning of 1939, the average occupancy exceeded 90%. The average waiting period for a vacant bed was close to three weeks. On the eve of the war, the Institute was a fully organised and actively working treatment and academic centre (fig. 14–17).

The times of the occupation

The outbreak of the Second World War put a stop to the Institute's undertakings [34–36]. It was on 5th September 1939 that director Łukaszczyk decided to discontinue treatment with radium, taking it out of Warsaw and hiding it a summer cottage belonging to doctor Dionizy Zuberbier in Jozefow. This was a many-hour long journey during which the doctor was exposed to an massive dose of irradiation, as the agent was transported without the correct protection. This would not be the last time this happened. The story of radium and the role of professor Łukaszczyk provide a good story for a film script [1, 8, 34, 37–39]

After the capitulation of Warsaw, the consent for the restoration of treatment was obtained, thanks to the efforts and



Figure 14. The operating theatre in the Radium Institute, 1936 (from the collections of the National Digital Archives)



Figure 15. The irradiation room at the Radium Institute, the late 1930s (from the collections of the National Digital Archives)



Figure 16. The memorial plaques commemorating the most generous benefactors of the Radium Institute placed in front of the main entrance, above the lift for the patients, 1936 (from the collections of the National Digital Archives)



Figure 17. The corridor on the ground floor in the main building of the Institute at Wawelska, 1936. On the wall on the right-hand side, there are plaques with the names of the Institute's benefactors (from the collections of the National Digital Archives)



Figure 18. The Radium Institute, with the name changed into the Municipal Cancer Hospital, in the period of the German occupation – the view from Wawelska street towards the West (from the collections of the Museum of Warsaw Uprising)

contacts of professor Łukaszczyk. The Institute was renamed to Municipal Cancer Hospital (fig. 18). Łukaszczyk brought the radium back to the Institute, but the element, kept in a safe, was confiscated by the Germans; however a part of the radium remained hidden in a secret place and in spite of the months-long investigation, the Gestapo were finally convinced that the radium had been taken out of Poland together with the valuable equipment of the operating theatre. The radium, saved from confiscation and hidden in the Institute, was used for the treatment of patients during the entire period of the Nazi occupation [1].

The Warsaw Uprising in 1944 brought complete annihilation to the Institute. At the end of July, many patients discharged themselves and the majority of doctors went to the sanitary points ascribed to them [34]. According to various accounts, at the Institute, there were about 80 patients remaining with a similar number of staff and their families. On 5th August 1944, the staff and the patients who were able to walk were forcibly removed. Other patients were murdered and the building was plundered and burnt by the soldiers of SS RONA. Only a few people survived the extermination of the Institute's staff [34]. These events span a period of almost 78 years, and until not

very long ago, these tragic happenings seemed both absurd in their cruelty and distant enough to be safe. Today, however, we see Ukrainian hospitals being fired at and war crimes committed by Russian soldiers on Ukrainian civilians; suddenly those images of the Institute from August 1944 turn out to be tragically contemporary and closer than ever.

On the 20th August 1944, director Łukaszczyk, having bribed German soldiers with his wife's bracelet, managed to reach the Institute in an armoured vehicle. He took the radium hidden there and brought it to Reguly, near Warsaw, and then to Poronin in the Polish mountains [8, 34, 38, 39].

The development of modern oncology

Most of the Institute was destroyed together with the equipment, including the priceless scientific documents. In spite of the immense damage and other urgent needs connected with rebuilding the entire country, it was in November 1945 that the decision to rebuild the Institute was taken by the government. At the end of the year the construction work started, including the development of the clinic's building and adding one more floor. In the year that followed the first patients were admitted, and one year later, the Institute, having already 240 beds, resumed its activity for good [40, 41]. Professor Franciszek Łukaszczyk became its director again, remaining in this post until his death in 1956. The reconstruction works were initially supervised by doctor Hanna Kołodziejska-Wertheim. At the end of 1945, she left for Washington to visit the seat of UNRRA (United Nations Relief and Rehabilitation Administration). Thanks to her efforts, a significant amount of radium, devices for X-ray therapy and teaching aids as well as the library collections were obtained [42, 43]. During that period, the reconstruction was supervised by doctor Tadeusz Koszarowski. The good political intentions and financial support of the state came as a great surprise, yet a key role was played by the enthusiasm and commitment of the Institute's staff [1].

Shortly after the war, the Institute was organised into three departments: radiotherapy, managed by Professor Franciszek Łukaszczyk; pathology, whose head was professor Józef Laskowski; surgery, managed by doctor Tadeusz Koszarowski, who had been at the Institute since 1941. Also the Radiology Department was created by doctor Janusz Buraczewski as its head. At the end of 1947, the Institute staff comprised also Zofia Chełchowska, Władysław Jasiński, Hanna Kołodziejska-Wertheim, Anna Madejczykowa, Irena Skowrońska, Jeremi Święcki and Ludwika Tarłowska (fig. 19–21) [43].

The first years after the war were devoted to organising and equipping the Institute, employing and training staff as well as drafting the plans for the years to follow. Three main directions of action were set: basic research, clinical studies and treatment activity as well as the organisation of cancer control [44].

In 1949 the Polish Anti-Cancer Society resumed its activity (later on changing its name to the Polish Society of Oncology)



Figure 19. Doctor Hanna Kołodziejska-Wertheim at work, the 1950s (from the collections of the editing office of the MSCNRIO)

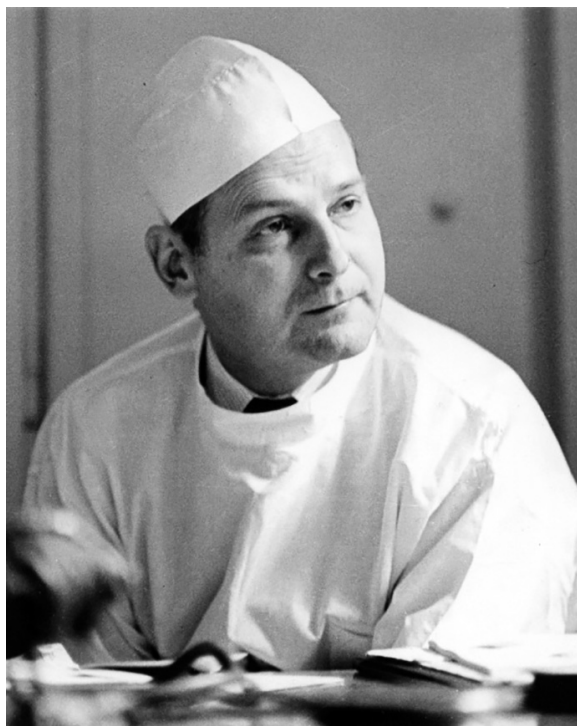


Figure 20. Professor Tadeusz Koszarowski (from the collections of the editing office of the MSCNRIO)

organising the Anti-Cancer Symposium, as first after the war. One year later, the Department of Cancer Biology, directed by doctor Stanisław Wislocki was created and then the Medical Physics Department – again under the supervision of Professor Cezary Pawłowski.



Figure 21. The visit of the Queen of Belgium, Elisabeth (at the microscope) at the Institute of Oncology 1955. Visiting of the Department of Pathology. First from the left: Professor Józef Laskowski, above the Queen: doctor Ludwika Sikorowa and doctor Maria Dąbska – distinguished pathologists; both of them later on received the professor degree (from the collections of the editing office of the MSCNRIO)

In 1951, on the basis of the resolution of the Council of Ministers [45], the Radium Institute was combined with the Oncology Institute in Krakow and the National Cancer Institute in Gliwice, thus creating the Maria Skłodowska-Curie Institute of Oncology with the departments in Krakow and Gliwice having the status of Research Institute.

Poland at that time was developing a new model of health service which was socially oriented. At the Institute, new and intensive works were initiated concentrating on structural and systematic solutions, based on hard epidemiological data and the scientific models of oncological care. The creation of the National Cancer Register in 1952 played a key role in this process. An obligation to report cases of malignant tumours [47] and data collection in the register (although initially underestimated and incomplete) gave rise to planning real needs with regards to infrastructure, the basis and staff training. This provided the foundation for drafting the cancer treatment plan.

The definition of oncology, formulated in the 1950s by Professor Tadeusz Koszarowski, which specifies this discipline as a science of *aetiology, pathology, epidemiology, prevention and early detection of malignant tumours, combined treatment of cancer patients, palliative care and the organisation of cancer control* became the basis of treating oncology as a separate field of medicine, the formulation of the objectives of the Second Cancer Control Program and defining formal principles for gathering epidemiological data and approval of oncology as separate specialisation [10, 44].

In 1952 Franciszek Łukaszczyk, Józef Laskowski, Władysław Jasiński, Hanna Kołodziejska-Wertheim, Tadeusz Koszarowski, Jeremi Świącki and Ludwika Tarłowska developed the Second Cancer Control Program. The document included the plans for the development of scientific basic and clinical research, cancer epidemiology and prophylaxis and the creation of treatment base in oncological network [48].

One of the most important points of the Program was the initiation of the data collection about the malignant tumour



Figure 22. The team of the Oncological Surgery, 1962. Standing from the left: doctor Marek Królikiewicz, doctor Jerzy Meyza, doctor Dorota Niemand (anaesthesiologist), Professor Tadeusz Koszarowski, doctor Hanna Werner-Brzezińska ("the Forewoman"), Maria Sowacka (secretary), doctor Tadeusz Lewiński, Danuta Krotkiewska (the scrub nurse and the chief of the operating theatre), doctor Albert Gerlach. Kneeling: doctor Andrzej Kułakowski and doctor Czesław Górski (from the collections of the editing office of the MSCNRIO)

incidence and mortality as well as of the epidemiological studies as the foundation of the modern organisation of cancer control. The Ministry of Healthcare and Social Protection issued an instruction for reporting the cases of malignant tumours to the register kept at the Warsaw Institute [47]. Within the Program also, the graduate and post-graduate training programmes were worked out, specialists were trained and multidirectional research was developed, also in collaboration with foreign centres. An intensive international exchange was carried out [48].

In 1953, at the Institute an Independent Surgical Department was created – under the supervision of Tadeusz Koszarowski [49], whilst one year later – the Department of Oncological Gynaecology managed by doctor Ludwika Tarłowska [50]. In 1957 the Isotope Laboratory, created by professor Władysław Jasiński was opened and, in 1965, doctor Janusz Szymendera set up the Radio-chemotherapy laboratory (fig. 22) [32].

In 1956, as a result of post-irradiation disease, professor Franciszek Łukaszczyk died and professor Józef Laskowski was appointed as the new director. In the years that followed, the Institute was managed by professor Władysław Jasiński (1961–1972), professor Tadeusz Koszarowski (1972–1985), professor Jan Steffen (1986–1991), professor Andrzej Kułakowski (1991–1998), professor Marek P. Nowacki (1999–2009), professor Maciej Krzakowski (2009–2011), professor Krzysztof Warzocha (2012–2015), and since 2016 – professor Jan Walewski.

New headquarters

Analysis of the epidemiology data suggested a dynamic growth in the number of oncological diseases of that time which means a necessity to expand the diagnostic and treatment base. In 1972, a decision was taken to enlarge the Institute providing it with a new seat in Ursynów, which was



Figure 23. The team of the Chemotherapy Department – at the front: doctor Józef Zborzil, to the right doctor Grzegorz Madej, from the left: doctor Maryna Rubach, doctor Feliksa Pieńkowska, doctor Jan Walewski, 1970s (from the collections of the editing office of the MSCNRIO)

supposed to be the central oncological hospital in Poland. The Institute's representative for the construction was Professor Tadeusz Koszarowski, who also took over the function of the Institute director [44, 48, 51].

At the end of the 1960s, at the Oncology Clinic on Wawelska, a Chemotherapy Team was created, and in 1974, the first Chemotherapy Clinic in Poland, which was subsequently managed for 20 years by doctor Józef Zborzil (fig. 23) [52, 53].

By the mid-1970s, the basic elements of the oncological network were created. Thanks to the data coming from the Central Cancer Register and from local registers, it was possible to monitor the efficiency of the adopted solutions and plan further development (fig. 24–25) [44].

Professor Tadeusz Koszarowski, together with his team, worked on developing the Third Cancer Control Program (governmental program No. 6 – *Cancer Control*). This program was pursued in 1976–1990 with the main objective being a change in the 5-year survival level from 25% to 50%. The program was co-ordinated and conducted by the Institute. At that time, 11 comprehensive cancer centres were organised with the number of beds increasing to 6000; moreover, in excess of 600 specialists in oncology were trained [44].

Professor Koszarowski worked on the cancer control program consisting of the creation of comprehensive cancer centres associating high class specialists in many fields and specialist equipment – the centres conducted diagnostics



Figure 24. The team of the Radiotherapy Department, 1977. Standing from the left: doctor Janusz Meder, doctor Danuta Gołębiowska, Professor Zofia Dańczak-Ginalska, doctor Zbigniew Malinowski, doctor Anna Skowrońska-Gardas, doctor Tadeusz Morysiński, doctor Gizela Nowak. At the front: doctor Teresa Więckowska-Starzyńska and doctor Anna Świerczewska-Strójwąs (from the collections of the editing office of the MSCNRIO)



Figure 25. Professor Tadeusz Koszarowski – the Head of the Institute in 1972–1985, with the team of his closest collaborators, 1976. Sitting from the left: Professor Zofia Dańczak-Ginalska – the Head of the Team for New Technologies in Radiotherapy, Professor Maria Dąbska – the Head of the Department of Cancer Pathology, Professor Tadeusz Koszarowski, Professor Ludwika Tarłowska – the Head of the Gynaecological Oncology Clinic, Professor Janusz Buraczewski – the Head of the Department of Radiological Diagnostics. Standing from the left: Professor Janusz Szymendera – the head of the Department of Nuclear Medicine, engineer Jerzy Rybicki – Deputy Director for Administration and Economics of the Institute and Economic, doctor Ryszard Sosiński – Deputy Director for Organisational Affairs, Professor Andrzej Kułakowski – the Head of the Oncological Surgery Clinic and Deputy Director for Clinical Affairs, Professor Jan Steffen – the Head of the Department of Immunology and the Deputy Director for Research Organisation and Co-ordination, Professor Helena Gadomska – the Head of the Department of the Research Information and Documentation, Professor Olga Mioduszewska – the Head of the Independent Laboratory of Pathomorphological Special Technologies, Professor Zbigniew Wronkowski – the Head of the Department for the Organisation of Cancer Control and Tumour Epidemiology (from the collections of the editing office of the MSCNRIO)



Figure 26. Fields in Ursynów, where the Oncology Centre is to be constructed – a visit of the team of the Surgery Clinic, 1974 (from the collections of the editing office of the MSCNRIO)



Figure 27. Professor Tadeusz Koszarowski presents the concept and the design of the Oncology Centre to the state authorities, first from the left: Edward Gierek (from the collections of the editing office of the MSCNRIO)

and treatment as well as research and prophylaxis which was regarded as the basis for cancer control [48].

The largest investment of the PR-6 program was the construction of the new seat of the Institute of Oncology in Ursynów district in Warsaw (fig. 26–27). The promotor and real founder of the new seat was professor Koszarowski, who not only worked on the new concept, but also, thanks to his great diplomatic skills and charisma, was able to convince the current authorities to pursue this idea and win the support of numerous milieus – often with rather opposing ideologies. The social committee for the construction of the Oncology Centre was set up, including, apart from prominent representatives of the ruling party, members of the Polish Academy of Sciences, the clergy (Cardinal Stefan Wyszyński) and also the press, radio and television, trade unions and diverse medical groups [51].

And thus, on 19th July 1977, the founding bill was laid under the new seat which was an immense success given the

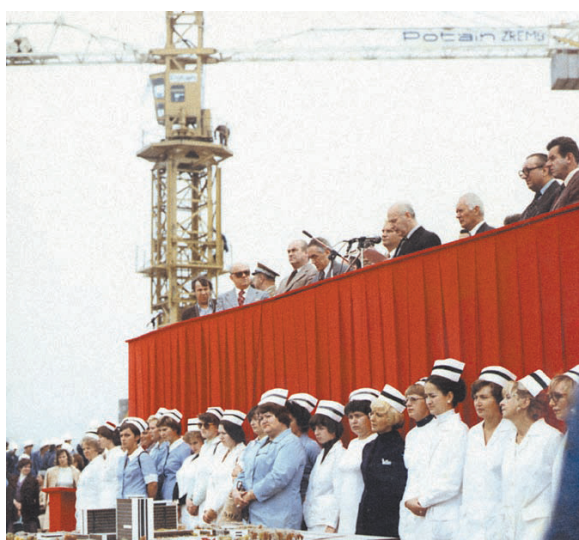


Figure 28. The ceremony of laying the cornerstone for the Oncology Centre in the fields of Ursynów, the speech of Professor Tadeusz Koszarowski, 19th July 1977 (from the collections of the editing office of the MSCNRIO)



Figure 29. The construction of the new seat of the Institute of Oncology in Ursynów, the late 1970s (from the collections of the editing office of the MSCNRIO)

politically complex and economically fraught period (fig. 28) [54]. However, the construction took almost 20 years and faced numerous obstacles. Even the Polish Film Chronicle which usually presented an optimistic image of the Polish reality of that period, provided such a comment: *The Warsaw Oncology Centre in Ursynów was supposed to grow fast and in a modern way. The dreams were supposed to come true thanks to a dedicated company, Budopol, created for this purpose; but then the whole amusement park with the Ferris wheel of material supplies, the roundabout of deadlines and the staff house of mirrors began* [55]. The next titles speak for themselves: *Delay* (1986), *Construction Crisis* (1987) or *Reverse Drive* (1989). It was only in the film from 1993 titled *From the Institute to the Centre*, did Professor Andrzej Kułakowski, the current director, proudly present the completed clinical building. The investment was completed as late as 1997 (fig. 29–31) [51, 54–62].



Figure 30. The construction of the new seat of the Institute of Oncology in Ursynów – the scientific building is constructed (from the collections of the editing office of the MSCNRIO)

The complex in Ursynów is now awaiting another development which is its urgent need, in spite of the fact that at the moment of its opening it was one of the most modern oncological centres in Europe [51, 62]. The concept of organ-related clinics was then many years ahead of the later concept of units of excellence which is today regarded as the optimum solution in the case of key cancers.

The completion of the Third Governmental Program of Cancer Control was followed by a period of stagnation [63]. There was no intention on the part of the decision makers to invest in oncology. During that period there were many cases of negligence and glaring underinvestment, paired with gradual wear and tear of the infrastructure and apparatus base in all oncological centres in Poland. In the following years there were attempts to implement the next Program of Cancer Control, yet each time the authorities refused. Nevertheless, on 22nd September 1999 the draft version of the Fourth National Program of Cancer Control was filed again in the health committees of the Polish Parliament and Senate and the desideratum was then sent to the government. In order to gain support and intensify actions, in December 1999, upon the initiative of professor Marek P. Nowacki and doctor Janusz Meder, support also by professor Tadeusz Koszarowski, the idea of the creation of the Polish Union of Oncology (PUO) was coined (fig. 32) [63]

Oncology Institute in the 21st century

In January 2000 the founding father of the PUO sent a letter to the President of Poland with a request to support their actions. The founding meeting was attended by the representatives of both chambers of the Polish Parliament (Sejm and Senate), the Ministry of Health, directors of oncological centres, the head of academic chairs in medicine, national experts in oncology, haematology and related disciplines, the presidents of many medical scientific associations and patient societies [63].

On 3–4th February 2000 the World Summit Against Cancer for the New Millennium was held in Paris under the patronage of UNESCO. During the summit the Charter of Paris was drafted and signed not only by the prominent academics and oncology doctors, but also the President of France Jacques Chirac and the UNESCO Secretary General, Koichiro Matura, and, together with them – the representatives of governments, academic centres and NGOs from the entire world. The participants called upon the world leaders to support their joint efforts for the creation of the National Cancer Control program in each county and to respect the Paris Charter together. Among the postulates included in the Charter there were, among others, the protection and increase of the rights of a cancer patient, an increase of financial support for the purchase of infrastructure of international research (both basic and clinical), the elimination of differences in the standards and access to professional medical care and the implementation of the social policy which could promote cancer control by all the world countries. In the wake of these events, in June 2000, the Polish Cancer Control Summit was organised during which the Polish Oncology Union was officially set up with the main objective being to carry out intensive work for passing the parliamentary act on the National Program for Oncological Diseases Control (NPZChN) and providing financial resources for its execution. In the next years, several meetings took place with the participation of the management and scientific council of the Polish Oncology Union, held in the office of the Polish President and the Prime Minister in the Health Committees of the Polish Parliament and Senate; here the draft act was processed and prepared for legislation. Finally, after 6 years of intensive and tedious work, on 6th July 2005, at the plenary session of the Polish Parliament, the Act on the National Program for Oncological Diseases Control was unanimously passed with the President signing it on 20th July 2005 [63].

The most recent history of the Institute deserves a separate paper. Here we will only list the recent changes and key events from the perspective of its organisation and the role in the system of oncological care. The regulation of the Council of Ministers of 17th October 2019 gave the Institute the status of National Research Institute, defining its new and more extensive tasks [64]. The process of reorganisation is closely connected with the implementation of the National Oncology Network (KSO) and the adoption of the National Cancer Strategy (NSO) [65–67]. Under the new name – the Maria Skłodowska-Curie National Research Institute of Oncology, the Institute plays the coordination and monitoring role within the new strategy. The document worked out under the supervision of professor Piotr Rutkowski has the character of a complex cancer plan, setting out new directions for the development of the oncological care system, pointing to 5 strategic clinical areas of key significance for the improvement of the efficiency of cancer therapies and the adaptation of the system's solutions to meet the needs of the patients. Thanks to the introduction



Figure 31. The construction of the new seat of the Institute of Oncology in Ursynów was completed in 1997 (from the collections of the editing office of the MSCNRIO)



Figure 32. The meeting of the representatives of the Polish Oncology Union with the President of Poland, Aleksander Kwaśniewski, concerning the project of the National Program for Oncological Diseases Control; second from the left: Professor Tadeusz Koszarowski, further: Professor Kazimierz Roszkowski-Słiz and doctor Janusz Meder (from the collections of the editing office of the MSCNRIO)

of the new benchmarking methods and tools and financial frameworks, the strategy draws from the achievement of system solutions worked out for decades under the auspices of experts from the Institute and also from the thorough analysis of the needs of the system of cancer care worked out upon the initiation of the Polish Society of Oncology, Jacek Jassem by almost 200 specialists and scientific associations.

Among all the changes of key importance for the realisation of the strategic tasks, which are also closely related to the development of the Institute of Oncology – the role of the modernisation of the National Cancer Registry must be stressed (eKRN+ Project); for 50 years it has been the core of the

structured cancer control actions. Last but not least, the Institute now enters a new decade at the moment when the works connected with the revitalisation of the hospital complex and the construction of the new clinic's building in Ursynów, are in progress which will significantly improve the conditions of patient treatment and work in the Institute. The beginnings of the work on these objectives were undertaken during especially difficult times: the pandemic posed new obstacles for oncology, uncovering weakness in the system and having a negative impact on the execution of plans. However, we are all in agreement in stating that such an intellectual potential, so meticulously worked out, together with the widely understood organisational and logistic infrastructure must be fully and consistently used in the timely pursuit of the tasks and goals defined in the National Cancer Strategy, which also fit within the framework of the European Beating Cancer Plan. Our hopes and determination are inextricably connected with opening up a new chapter in the history of the Institute with the support of the greatest decision-makers in Poland, including the President and Prime Minister.

Conclusions

The Institute of Oncology at Wawelska street was the cradle of modern specialisations and research fields in Polish oncology. It is impossible to name everyone who contributed to this development. The list presented here is by all means incomplete and selective, yet these names – of teachers and mentors of many future generations cannot be omitted.

The basic research was developed by: Zygmunt Zakrzewski, Stanisław Wislocki, Kazimierz Dux, Adam Michałowski, Jan Steffen, Janusz Siedlecki, Przemysław Janik, Zygmunt Paszko,

Alina Czarnomska. Medical physics is represented by: Cezary Pawłowski, Barbara Gwiazdowska, Jerzy Tołwiński, Marian Dworakowski, Wojciech Bulski, Paweł Kukołowicz. Oncological pathology: Józef Laskowski, Ludwika Sikorowa, Maria Dąbska, Olga Mioduszevska, Anna Nasierowska-Guttmejer and Klara Zakrzewska. Epidemiology was developed thanks to: Zbigniew Wronkowski, Helena Gadomska and Witold Zatoński. The pioneers of nuclear medicine were Władysław Jasiński, Janusz Szymendera and Izabela Kozłowicz-Gudzińska. Radiotherapy was developed thanks to: Franciszek Łukaszczyk, Anna Madejczykowa, Hanna Kołodziejka-Wertheim, Władysław Jasiński, Jeremi Świątek, Danuta Gajl, Czesława Leszczyk, Joanna Makólska-Kowalska, Janina Schayer-Malinowska, Michał Wasilewski, Maria Wróblowa, Zofia Dańczak-Ginalska, Zbigniew Malinowski, Teresa Więckowska-Starzyńska, Władysław Nowakowski, Janusz Meder, Barbara Puchalska. The development of oncological surgery can be attributed to: Tadeusz Koszarowski, Hanna Werner-Brzezińska, Tadeusz Kołodziejki, Witold Rudowski, Andrzej Kułakowski, Czesław Górski, Tadeusz Lewiński, Jerzy Meyza, Włodzimierz Ruka, Grzegorz Luboiński, Marek P. Nowacki. Reconstructive surgery was developed by Andrzej Kułakowski, Edward Towpik and Sławomir Mazur. Ludwika Tarłowska initiated gynaecological oncology as a separate specialisation which was creatively developed then by Bożena Sablińska, Jerzy Haruppa, Jan Zieliński, Elżbieta Ploch and Zofia Kietlińska. Janusz Buraczewski laid the foundations of radio-diagnostics in oncology, developed later by Jadwiga Zomer-Drozda, and then – Marta Kaczurba and Janina Dziukowa. The foundations of chemotherapy and the first treatment standards in Poland can be attributed to: Anna Madejczykowa, Anna Żelechowska, Feliksa Pieńkowska, Józef Zborzil, Piotr Siedlecki, Maryna Rubach, Grzegorz Madej, Jan Walewski, Tadeusz Pieńkowski, whilst the core bases of oncological rehabilitation were created by Krystyna Mika and Hanna Tchórzewska-Korba [10, 28].

At the close of this, definitely incomplete outline of the history of the Institute, let us quote the words of professor Tadeusz Koszarowski, in which, as it seems, the idea planted more than 90 years ago by Maria Skłodowska-Curie, who determined the final shape of the Institute and the development of Polish oncology is rightly reflected: *Maria Skłodowska-Curie gave Polish society 1 gram of radium... Polish society, impoverished and destroyed by the war, reciprocated the gift of this Eminent Scholar by pursuing her "greatest dream" – the creation of the Radium Institute in Warsaw. This is a widely known and discussed fact. However, a much more precious, in fact priceless gift often goes unnoticed – this was her creative knowledge and the belief that the progress of learning and its application is not coined within the narrow limits of the science disciplines, but by means of combining and connecting them which leads to their mutual interpenetration* [68].

Conflict of interests: not reported

Janusz Meder

Maria Skłodowska-Curie National Research Institute of Oncology
 Scientific Editor's Office
 ul. Roentgena 5
 02-781 Warszawa
 e-mail: Janusz.Meder@pib-nio.pl

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