



Audit Report

19/17

State Funds Provided for Targeted Support of Medical Research out of the Budget Chapter of the Ministry of Health

The audit was included in the audit plan of the Supreme Audit Office (hereinafter the “SAO”) for 2019 under number 19/17. The audit was managed and the Audit Conclusion was drawn up by SAO member RNDr. Petr Neuvirt.

The goal of the audit was to review the provision and use of funds provided from the budget chapter of the Ministry of Health for the targeted support of medical research and to evaluate the support in terms of effectiveness, efficiency and compliance with legal regulations.

The audit was carried out on the audited entities between July 2019 and February 2020.

The audited period was 2015-2018; both the previous and subsequent periods were also considered for contextual reasons.

Audited entities:

Ministry of Health (hereinafter the “MoH” or the “Ministry”);

Czech Health Research Council, Prague (hereinafter “CHRC” or the “Council”);

Brno University Hospital;

Olomouc University Hospital;

Institute of Physiology CAS, public research institution, Prague;

Institute for Clinical and Experimental Medicine, Prague;

Masaryk University, Brno;

Palacký University Olomouc.

The **Board of the SAO** at its 8th meeting held on 18 May 2020

approved by Resolution No 7/VIII/2020

the **Audit Conclusion** as follows:

Applied Medical Research

**CZK 6.5
billion**

Approved allocation to the
*Programme to support medical
applied research in 2015-2022*

546

Projects supported in 2015-
2019

16

Number of audited projects of
the beneficiaries

**CZK 4.2
billion**

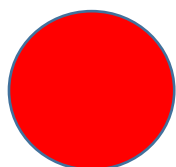
Support granted in 2015-2019

118

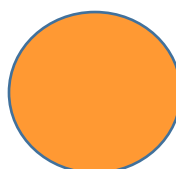
Number of completed projects
as of 31 December 2018

5

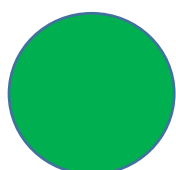
Number of audited projects
which cannot be evaluated as
fully effective and efficient



The set goals and indicators do not allow the evaluation of the medical applied research programmes. The contributions or impacts of the provided support are not monitored.



Administratively complex process for providing support.



Beneficiaries were selected in a transparent and non-discriminatory manner.

I. Summary and Evaluation

The SAO audited the state funds provided for the targeted support of medical research out of the budget chapter of the Ministry of Health. The targeted support is provided through applied research, development and innovation programmes.

The goal of the audit was to review the provision and use of funds provided from the budget chapter of the Ministry of Health for the targeted support of medical research and to evaluate the support in terms of effectiveness, efficiency and compliance with legal regulations.

In accordance with the approved concepts, the funds were expended for the specified purpose, i.e. the support of medical research. However, the effectiveness and efficiency of the overall support cannot be evaluated. The effectiveness of the support cannot be evaluated as the set sub-objectives, and the fulfilment indicators of such objectives do not indicate the achievement of the primary objective of the targeted support of medical research. Similarly, the efficiency of the overall support cannot be objectively evaluated as the Ministry did not monitor the contributions and impacts of the projects or the usability of the results. Therefore, it cannot be decidedly determined whether and to what extent the provided support contributes to the health of the Czech population and satisfies the current healthcare needs. In some cases, when providing support, the Ministry did not proceed in accordance with legal regulations and the conditions of public tenders.

The SAO discovered certain shortcomings, in particular, in setting up, monitoring and evaluating programmes for the targeted support of medical applied research, development and innovation. The targeted support programmes were announced by the Ministry of Health in accordance with the conceptual and strategic documentation, but the Ministry did not evaluate the achievement of the objectives. The Ministry of Health did not monitor or arranged for the monitoring of the effectiveness and efficiency of the provided funds in the completed RDP III programme.¹ The Ministry also did not carry out ongoing monitoring and evaluation of the current Programme². When setting the objectives, indicators and contributions of the new programme³ for 2020-2026, the Ministry did not set indicators in such a way as to allow the monitoring and evaluation of the real impacts of the used state funds.

The Ministry of Health set the indicators in all three programmes with an emphasis on the number of supported projects and the number of achieved results, not with respect to their actual usability in healthcare. The indicators for the implementation of the current Programme will not be fulfilled as the Ministry has not announced the last planned public tender.

The Czech Health Research Council has performed the tasks specified by the Ministry. The established method of communication between the Ministry and the Council led to increasing the administrative burden, time delays and other shortcomings. The projects were selected by the evaluating body of the Council in a non-discriminatory and transparent manner.

¹ *Research and Development Programme of the Ministry of Health III* implemented between 2010 and 2015 (hereinafter the “Completed RDP III” or “RDP III”)

² *Programme to support medical applied research in 2015 to 2022* (hereinafter the “Programme”).

³ *Programme to support medical applied research in 2020 to 2026* (hereinafter the “New Programme”).

The projects audited by the SAO did not show that the beneficiaries failed to fulfil the conditions for the support or that they used the funds in violation of legal regulations. However, the SAO could not evaluate some of the audited projects as entirely effective and efficient in terms of meeting the set objectives and achieving the expected results.

The overall evaluation is based on the following main audit findings:

1. The MoH did not monitor or evaluate the effectiveness and efficiency of the expended funds in the Completed RDP III

The set goals of the Completed RDP III, which were supposed to be achieved, were not evaluated. The indicators of achievement of the set goals were determined only quantitatively, not qualitatively. They were more representative of the quantity of the results of research activities than their quality. The MoH did not monitor the contributions of the Completed RDP III to the healthcare needs, therefore, the support cannot be evaluated in terms of effectiveness and efficiency.

The Completed RDP III programme was focused on the medical applied research, yet, it predominantly resulted only in publication results. The primary indicator of the results of the Completed RDP III, meaning the results applicable in practice, was fulfilled only at 0.5%, the secondary indicator of the programme results in the form of publication results was fulfilled at 1,636%. Ultimately, instead of the expected support of applied research, the support went to the research activities with the character closer to basic research.

2. The MoH did not monitor or evaluate the Programme or the Concept objectives on an ongoing basis⁴

The MoH did not evaluate the individual public tenders in the Programme and did not monitor the achievement of the sub-objectives and the primary objective on an ongoing basis. Therefore, the MoH did not evaluate the Programme on an ongoing basis. The Ministry also did not update the focus of the individual public tenders of the Programme in connection to the current healthcare needs. The Ministry did not even draw up the evaluation methodology⁵ for the Programme evaluation.

By not continuously monitoring and evaluating the Programme, the MoH could not respond to any current changes and needs in healthcare that would help achieve the set goals of both the Programme and the Concept.

The basic strategic document of the Ministry is the Concept, which is fulfilled through, inter alia, the programmes for the support of medical applied research. The interim report on the implementation of the Concept did not evaluate the set objectives of the Concept. The indicators of fulfilment of the set objectives did not have their initial or target status determined. Therefore, when evaluating the Concept, the achievement of such key objectives cannot be determined.

⁴ *Concept of medical research until 2022 (hereinafter the "Concept")*

⁵ The purpose of the evaluation methodology is the evaluation of the completed programme, and it contains the detailed instructions and criteria according to which the programme is to be evaluated.

3. Indicators for Programme implementation will not be fulfilled

The indicators of the Programme for the evaluation of the overall performance and success were set. The indicators were divided into the Programme implementation indicators, Programme result indicators and indicators of fulfilment of the Programme objectives.

To accomplish the objectives of the Programme, six public tenders were planned to be announced. By not announcing the last planned public tender, the MoH caused that the indicators of Programme implementation will not be fulfilled. These indicators were set as the aggregate value of the total number of supported projects and the number of projects evaluated as successful. Given the previous course of the Programme, it is clear that the implementation indicators, which serve to evaluate the programme, will not be fulfilled⁶.

4. The MoH emphasised only the quantity of results

The indicators of the Programme results were focused merely on the number of results and did not take into account their quality, i.e. the contribution intended to be realised by the support. Due to the fact that there is no connection between the primary objective and the set indicators, it is unclear how the evaluation of its performance will take place.

The evaluation of the Programme only through the quantitative indicators does not attest to its overall contribution to healthcare. As there is no follow-up monitoring of the utilisation of results in practice, the impact or contribution of this targeted support cannot be evaluated.

5. The MoH did not evaluate the plans for implementing the achieved results into practice and allowed for certain completed projects to be re-evaluated

The beneficiaries were obligated to submit the plan for the practical implementation of achieved results (the implementation plan) no later than with the final report on the project implementation. The MoH did not evaluate the project implementation plans for any of the projects completed before the end of 2018. Moreover, the Ministry did not require the information on the results and their practical use from the beneficiaries in any other way. Therefore, the Ministry does not have the knowledge of the contributions of the results achieved due to the targeted support and cannot evaluate its effectiveness and efficiency.

CHRC changed the evaluation of certain completed projects in the 2015 public tender. The MoH made it possible to re-evaluate the projects without exclusive dedication⁷ if it was carried out within 6 months from the completion of project implementation. In total, 49 out of 118 completed projects were re-evaluated, i.e. 42%. Out of the original 49 projects that were evaluated as not fulfilled, 45 projects met the condition of exclusive dedication after the re-evaluation.

⁶ For example, the number of supported projects was set at the minimum of 800, but only 546 projects were supported. The indicator will not be fulfilled by 254 projects. Similarly, the number of successfully completed projects cannot be achieved. With the total support of 546 projects, the set value of the indicator in the minimum amount of 600 projects evaluated as successful is unattainable.

⁷ The exclusive dedication is the achievement of at least one primary or one secondary result of research and development which is associated exclusively with the given project. Results are achieved in the course of the project, but not all are applied by the end of the project implementation. Application of a result means its announcement, protection in accordance with the special legal regulations or its implementation (e.g. publication, granting of a patent, pilot production, etc.).

6. The MoH did not emphasise the interconnection of the measurable indicators with the set objectives in order to evaluate the contributions of the New Programme

The MoH set measurable indicators for the evaluation of the New Programme. These indicators do not attest to the achievement of the primary objective or the sub-objectives of the New Programme. As in the previous programmes, the indicators were focused on the number of supported projects and the number of results. The New Programme is divided into two sub-programmes with the objectives and measurable indicators without defined target values. Therefore, it is unclear how the MoH will monitor or evaluate the success of the individual sub-programmes. The set objectives and indicators were not defined in such a way as to verify the contributions and impacts of the New Programme.

The expected results of the New Programme remain to a significant degree focused on the publication activities. The indicators of the primary and secondary results of the New Programme expect the achievement of the greatest number of results of the “article in an impact journal” type. In contrast, the number of results applicable in practice such as the methodology, medical procedure, patent or software is expected to be much lower, even compared to the number of achieved results of this type in the current Programme. The number of expected results of the New Programme is underestimated, considering the course of the previous programmes.

7. The cooperation of MoH and CHRC resulted in time delays and other shortcomings in the course of the support administration process

In some cases, time delays and other shortcomings occurred in the communication between the MoH and CHRC. Some amendments with the beneficiaries were concluded late. Until the SAO’s audit, the MoH provided the support to the beneficiaries late and did not guarantee the veracity and timeliness of the information provided through the information system for research, development and innovation⁸. From 2015 to May 2017, the MoH did not carry out any financial audits of the projects of targeted support for medical research. From May 2017, the financial audits of the projects were performed by the Council.

A greater administrative burden and shortcomings occurred between the MoH as the support provider and CHRC as its administrator due to the fact that competencies and responsibilities were not clearly delegated by the Ministry.

8. Some of the audited projects were not entirely effective and efficient

Out of the total number of 16 audited projects, the SAO evaluated 11 of them as effective and efficient. Two projects were evaluated as effective with minor shortcomings. One project was evaluated with limited effectiveness and one project was evaluated with limited efficiency. One of the projects was evaluated with limited efficiency and effectiveness. Therefore, five audited projects, i.e. 31% of the selected sample, cannot be evaluated as entirely effective and efficient.

The levels of effectiveness and efficiency according to the SAO evaluation (see Annex 1) were decreased in the cases where the audited projects did not achieve all the expected primary or secondary results in the intended implementation period. The SAO audit did not determine

⁸ The information system for research, development and innovation collects the information on research, development and innovation supported from public budgets in the Czech Republic hereinafter the “R&D IS”).

that the beneficiaries failed to fulfil the conditions for the support or that they used the funds in violation of legal regulations.

II. Information on the Audited Area

The Ministry of Health provides targeted support for medical applied research and institutional support for long-term conceptual development of research organisations. In addition, the projects of the targeted support in healthcare are also funded by other state administration bodies, such as the Technology Agency of the Czech Republic, Czech Science Foundation or the Ministry of Education, Youth and Sports. The audit focused on the targeted support of medical research out of the budget chapter of the Ministry of Health. The beneficiaries of targeted support for medical applied research were, in particular, universities and university hospitals.

The essential conceptual material for the support of medical applied research and development is the *Concept of medical research until 2022*. The Concept is thematically based in the government-approved R&D Priorities⁹ and covers the entire priority No 5: *Healthy population*. The basic and primary objective of the Concept is the assurance of the internationally comparable level of medical research and utilisation of its results in order to improve the health of the Czech population and to secure the needs of Czech healthcare. This Concept was approved by the government in 2014. The Concept is the overarching material for the programmes that are still ongoing.

Through the programmes, the Ministry of Health provided targeted support in the form of subsidies for the medical applied research on the basis of the R&D Support Act. The audit focused on the following support programmes:

1. Research and Development Programme of the Ministry of Health III for 2010-2015

As a part of the Completed RDP III, four public tenders were announced. 522 projects were supported with the total provided support in the amount of CZK 3.1 billion.

The essential objective of the Completed RDP III was the fulfilment of the R&D Support Act with the implementation of requirements of the Czech research, development and innovation system in healthcare, increase of the efficiency of used public funds in the medical applied research and practical use of the results of the research in healthcare.

2. Programme to support medical applied research in 2015 to 2022

Approved allocation to the *Programme to support medical applied research in 2015 to 2022* amounted to CZK 6.5 billion. Five public tenders were announced as a part of the Programme. By 2019, CZK 4.2 billion was disbursed to 546 projects.

The basic and primary objective of the Programme is the assurance of the internationally comparable level of medical research and utilisation of its results in order to improve the health of the Czech population and to secure the needs of Czech healthcare.

⁹ *National priorities of oriented research, experimental development and innovations* (hereinafter the “R&D Priorities”)

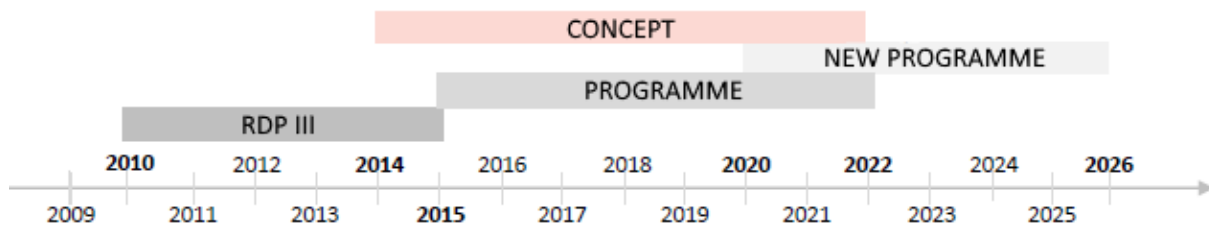
3. Programme to support medical applied research in 2020 to 2026

The first public tender was announced for the New Programme. The expected allocation to the New Programme amounts to CZK 5.5 billion for approx. 500 projects, depending on the possibilities of the state budget.

The primary goal of the New Programme is to contribute in the medium and long-term through results and contributions of the supported projects to the improvement of the health of the Czech population and to continue to secure the current needs of Czech healthcare. The supported projects will lead to new knowledge which will help improve the clinical procedures in diagnostics, treatment and prevention of the most common as well as rare or entirely new diseases. The objective of the New Programme is also to contribute to the level of medical research in the Czech Republic in order for it to be comparable to the developed countries of the European Union.

Overview of the essential conceptual materials for R&D in healthcare and their chronological order are listed in Diagram 1.

Diagram 1: Overview of conceptual materials of the MoH



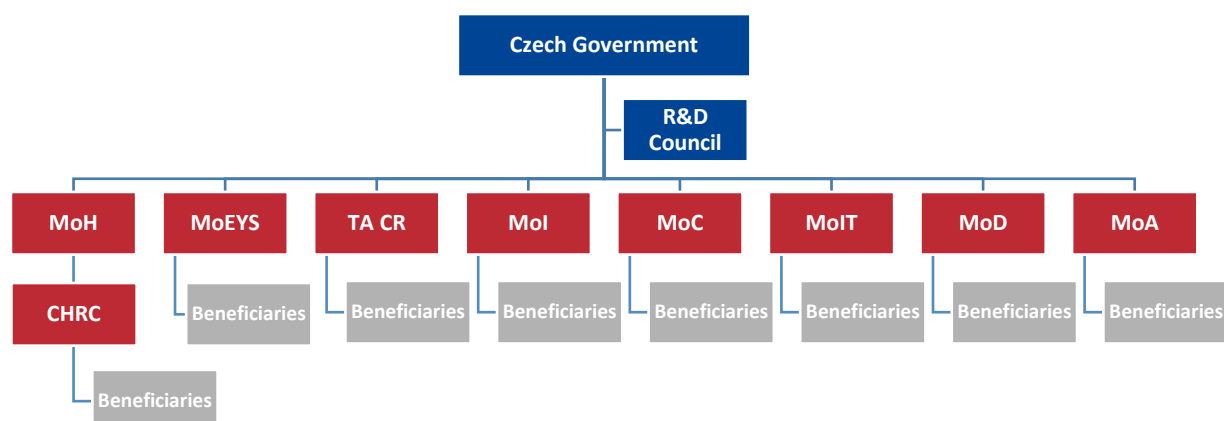
Source: information obtained in the audit; graphically processed by the SAO.

Projects proposed for funding out of the targeted support programmes must ensure the achievement of one or more sub-objectives based on the R&D Priorities. Implementation of the programme projects should annually bring new knowledge usable in diagnostics, treatment and prevention of diseases as well as results beneficial for the health policy. The results of the projects should cover the full range of medical fields and should contribute to the improvement of health and the quality of life of the population.

In the announced tenders, projects with the period of implementation of 3-5 years are selected. The final contribution of the project should be evaluated after the project completion on the basis of the final report. The results achieved in the individual projects and their compliance with the objectives of the announced programme should be evaluated after the completion of the relevant programme.

As the only provider, the Ministry of Health has established an organisational unit of the state (Czech Health Research Council) for the administration of targeted support, as shown by the following Diagram 2.

Diagram 2: Targeted support of applied research, development and innovation in the Czech Republic



Source: information obtained in the audit; graphically processed by the SAO.

The Czech Health Research Council (CHRC) was established by the measure of the MoH dated 1 April 2014. CHRC's goal is to support applied research in healthcare and fulfil the tasks and activities determined by the MoH.

As a part of its activities, CHRC performs, in particular:

- evaluation and selection of project proposals for the provision of targeted support for their implementation;
- expert and factual review of the implementation of supported projects;
- evaluation and review of the course of implementation, achievement of project objectives and review of the achieved results;
- assessment of the achievement of project objectives.

III. Scope of Audit

The subject of the audit was the state funds provided for targeted support¹⁰ of medical research out of the budget chapter of the Ministry of Health. The goal of the audit was to review the provision and use of funds provided from the budget chapter of the Ministry of Health for the targeted support of medical research and to evaluate the support in terms of effectiveness, efficiency and compliance with legal regulations. The period audited was 2015-2018 and, where relevant, the period preceding this and the period up to the completion of the audit.

The audited amount of funds at the system level amounted to CZK 4,235,417,662, which corresponds to the total amount of targeted support provided to medical research between 2015 and 2019 out of the *Programme to support medical applied research in 2015 to 2022*.

With the Ministry of Health, the audit was primarily focused on the way the system for providing targeted support was set up, the distribution of competencies and conceptual activities. Audit of CHRC reviewed its activities related to the administration of targeted

¹⁰ The subject of the audit was, during its course, specified as the targeted support. Approved at the XV meeting of the Board of the SAO dated 14 October 2019.

support. The audit of the beneficiaries of targeted support was focused on the fulfilment of conditions for the provision of funds and the effectiveness and efficiency of the projects.

Therefore, the system for targeted support was reviewed as a whole, i.e. from its management and setting through the activities associated with the administration of targeted support to the use of the targeted support by the beneficiaries. As a part of the conceptual activities on the provider level, the audit was focused, in particular, on the preparation and evaluation of the *Programme to support medical applied research in 2015 to 2022*. The SAO further investigated the announcement of the individual public tenders, selection method of the supported projects for all public tenders and CHRC's system for evaluation of completed projects in the 2015 public tender. The audit also focused on the *Research and Development Programme of the Ministry of Health III*, which was completed in 2015. The SAO further examined the evaluation and the contributions of the results of the Completed RDP III. At the MoH level, the setting of the *Programme to support medical applied research in 2020 to 2026* was also reviewed.

Six beneficiaries of targeted support were audited with respect to the subject of their activity, their financial significance and the number of completed supported projects. In the case of the beneficiaries, the compliance with the conditions for drawing support and expediency and effectiveness of its use were examined on a sample of 16 completed projects. Projects in the total amount of CZK 179,914,968 were audited.

Note: The legal regulations referred to in this Audit Conclusion are applied as effective in the audited period.

IV. Detailed Facts Ascertained by the Audit

1. The MoH did not monitor or evaluate the effectiveness and efficiency of the expended funds in the Completed RDP III

In the audited period, the MoH completed the RDP III, the main objective of which was to increase the efficiency of use of public funds in the medical applied research and the practically applicable results of research for the healthcare needs. The results of the research were meant to be usable in diagnostics, treatment of diseases, prevention of diseases and in the area of healthcare systems, development of IT and nursing. The MoH did not evaluate the primary objective.

In total, 522 projects with drawn targeted support in the amount of CZK 3,089,214,000 were supported out of the Completed RDP III between 2010 and 2015.

Both the MoH and the R&D Council perform the evaluation of the completed programmes. When evaluating the Completed RDP III, they base their evaluation primarily on the data available in the R&D IS¹¹ or its databases *Central register of R&D projects* (hereinafter the "CRP") and *Information Register of R&D results* (hereinafter the "IRR"). The MoH did not evaluate the set objectives for the Completed RDP III. The Programme had six set objectives, but none was evaluated. The indicators of the Completed RDP III focused only on the number of projects, number of results, percentage of young researchers and provided funds. The listed

¹¹ The R&D IS has 5 modules, namely **CRP** – *Central register of R&D projects*, **CRA** – *Central register of activities*, **IRR** – *Information Register of R&D results*, **RPT** – *Register of Public R&D tenders*, **CRR** – *Central register of research proposals*.

indicators of the Completed RDP III did not attest to the achievement of the set programme objectives.

None of the primary indicators of the Completed RDP III were fulfilled. One of the secondary indicators was not fulfilled as well. Overview of the Completed RDP III indicators and their fulfilment is shown in Table 1.

Table 1: Indicators of Completed RDP III

	Indicator	RDP III – plan	MoH evaluation	Completed
		Number	Number	
	Indicators of RDP III implementation			
1.	Minimum number of total selected (supported) projects	500	522	YES
2.	Minimum number of total successfully completed projects	375	502	YES
	At least 75% of the projects are successfully completed			YES
	Primary indicators of the RDP III results			
3.	Minimum number of certified methodologies and procedures	40	2	NO
4.	Minimum number of proven technologies	375	0	NO
	Minimum number of applied programme results	415	2	NO
	Secondary indicators of RDP III results			
5.	Minimum number of specialist books	80	38	NO
6.	Minimum number of articles in scientific journals	100	2,907	YES
	Minimum number of publication results of the programme	180	2,945	YES
	Incentive effect indicators			
7.	Support of “young researchers”	10%	13%	YES
8.	Financial rewards for extraordinary results	5	8	YES
	Financial indicators of the RDP III			
		in CZK million	in CZK million	
9.	Total programme costs	4,447	3,122	
10.	Targeted funds from the MoH budget – Provider	4,359	3,089	
11.	Other public resources	89	33	

Source: Programme document for the Completed RDP III and MoH evaluation.

The MoH evaluated only the quantity of the project results, not their quality or contribution leading to the achievement of set objectives. The Completed RDP III programme was focused on the medical applied research, yet, it mostly resulted only in publication results. The Completed RDP III had the primary result indicator “*minimum expected number of applied results of the programme*” set at 415 results, but only two such results were achieved by the implementation of projects in the Completed RDP III, as indicated by the MoH in the evaluation of the Completed RDP III. In contrast, in the secondary result indicator “*minimum number of publication results of the programme*”, 2,945 publication results were achieved instead of the expected 180. The primary indicator of the results of the Completed RDP III, namely the results applicable in practice, was fulfilled only at 0.5%, in turn, the secondary indicator of the programme results in the form of publication was fulfilled at 1,636%.

The MoH did not monitor the contributions of the projects in the Completed RDP III in any way. In the Completed RDP III, the MoH concluded an agreement on utilisation of results with all the beneficiaries. The SAO reviewed the sample of the concluded agreements on the utilisation of results of this programme. The aforementioned agreements do not attest to the applicability and usability of the results in practice in any way and only satisfy a formal requirement of the R&D Support Act.

Due to the shortcomings in the setting of the evaluation system mentioned above and with respect to the failure to monitor the use of the results, the effectiveness and efficiency of the provided funds of the Completed RDP III could not be determined. The MoH as the budget chapter administrator did not systematically monitor and evaluate the effectiveness and efficiency of the use of the funds for the targeted support of medical applied research, thus violating the budgetary rules¹².

2. The MoH did not monitor or evaluate the Programme or the Concept objectives on an ongoing basis

The essential conceptual documents of the MoH concerning medical research are the Concept and the Programme. The Programme was one of the implementation tools of the Concept and followed the already Completed RDP III. The Programme period was set for 2015-2022.

The primary objective of the Programme was the assurance of the internationally comparable level of medical research and utilisation of its results in order to improve the health of the Czech population and to secure the needs of Czech healthcare. The Programme had the key objectives for each of the 21 sub-areas and 43 sub-objectives set in accordance with the Concept. The indicators for measuring the fulfilment of the primary objective, key objectives or sub-objectives were not set in the Programme. Therefore, it is unclear how the MoH plans to evaluate the achievement of the Programme objectives.

The indicators of the Programme intended for the evaluation of its overall performance and success were set. However, with the presently set indicators (see Table 2) the evaluation of the Programme and the objectives after its completion will not be possible. The indicators do not indicate the achievement of the set objectives of the Programme.

¹² Act No 218/2000, on the budgetary rules and amending certain related acts (the budgetary rules). Pursuant to Section 39(3) of Act No 218/2000 Coll.: *“The administrator of the budget chapter monitors and evaluates the economy, effectiveness and efficiency of spending within its budget chapter. If the founder is an organisational unit of the state or public-benefit corporation, or if performing the function of the founder, it acts in its management in such a way as to make the expenditure as economical, effective and efficient as possible.”*

Table 2: Programme indicators

Indicator	Number
Indicators of Programme implementation	
Minimum number of total selected (supported) projects	800
Minimum number of total successfully completed projects	600
At least 75% of the projects are successfully completed	
Programme result indicators	
Minimum number of primary Programme results	600
Minimum number of secondary Programme results	600
Minimum number of other Programme results	2,400
Indicators of achieving Programme objectives	
At least 65% of sub-objectives of the Programme are achieved	

Source: Programme – criteria for achievement of Programme objectives.

The MoH did not evaluate the individual completed public tenders in the Programme and did not continuously monitor the achievement of the sub-objectives and the primary objective. Therefore, the MoH did not perform the regular evaluation of the Programme. The Ministry also did not update the focus of the individual public tenders of the Programme in connection to the current healthcare needs. The Ministry also did not draw up the evaluation methodology for the Programme evaluation.

The indicators listed in the Concept for the achievement of the individual key objectives of the sub-areas of the national priority No 5: *Healthy Population* were not measurably set. The initial and target status of the indicators was not set. Therefore, when evaluating the Concept, the achievement of such key objectives cannot be determined.

The SAO's audit also examined the interim report on the implementation of the Concept submitted by the MoH to the R&D Council. The interim report does not evaluate the achievement of the Concept objectives. With the interim report on the Concept implementation, the MoH merely formally complied with the government's request.

3. Indicators for Programme implementation will not be fulfilled

A total of six public tenders were to be announced as a part of the Programme, however, the last public tender for 2020 was not announced. The public tender for 2020 was announced as a part of the New Programme for 2020-2026. The MoH did not announce the last public tender in order not to reduce the period for project implementation to 2.66 years compared to the implementation period of three years guaranteed by the Programme. At the same time, the projects supported in the last public tender in the Completed RDP III had a reduced period of implementation.

As a result of not announcing the last public tender, the indicators of Programme implementation will certainly be unfulfilled. In total, 546 projects were selected for support and implemented in all public tenders. It can already be stated that the Programme indicator "*minimum number of total selected (supported) projects*" set at 800 will not be fulfilled. Therefore, this indicator will not be fulfilled by 254 projects. The "*minimum number of total successfully completed projects*" indicator set at the absolute value of 600 will not be fulfilled either. In the evaluation of the Programme, the indicator of "*at least 75% of successfully completed projects*" will likely not be fulfilled as it is unknown whether the evaluation will be

based on the number of actually supported projects or the number of originally expected projects to be supported.

Table 3 shows the setting of quantitative implementation indicators in all three programmes of the MoH. The Table clearly shows that the same indicator values for programme implementation were set for the Completed RDP III and the New Programme; in contrast, the Programme was set with more ambitious values which it does not achieve.

Table 3: Set quantitative indicators for the implementation of targeted support programmes of the MoH

Indicator of programme implementation	RDP III	Programme	New Programme
Minimum total number of selected projects	500	800	500
Minimum number of total successfully completed projects	375	600	375
Percentage of successfully completed projects	At least 75%		

Source: programme documents for the audited programmes.

4. The MoH emphasised only the quantity of results

Indicators intended for the monitoring of progress and evaluation of the overall performance and success of the Programme were set for the achievement of the Programme objectives. Indicators of Programme's results were set in the Programme.

The primary results of the Programme include:

- F – utility model, industrial model,
- G – prototype, functional sample,
- J_{imp} – peer-reviewed expert article in an impact factor journal,
- N – certified methodology, medical procedure, specialised maps,
- P – patent,
- R – software,
- Z – pilot production, proven technology.

The secondary results of the Programme include:

- B – specialist book,
- C – chapter in a specialist book,
- D – paper in an anthology,
- J – peer-reviewed expert article in a non-impact journal.

In connection with the set objectives, the projects which could be reasonably expected to achieve at least one primary and one secondary R&D result were supported. Achievement of at least two primary results was also acceptable.

With the indicators set in such manner, the MoH monitored only the number of results of implemented projects but did not monitor the impacts of such results on the sub-objectives of the Programme or the primary objective of the Programme. By setting such indicators, the MoH will not be able to objectively evaluate the contribution of the implemented projects, i.e. the achievement of the primary objective of the Programme.

The evaluation of the Programme only through quantitative indicators does not attest to its overall contribution to healthcare. As there is no follow-up monitoring of the utilisation of results in practice, the impact or contribution of this targeted support cannot be evaluated.

The purpose of the targeted support of medical applied research is to ensure the practical usability of the results in such a way as to achieve the primary objective of the Programme.

The following Table contains the overview of achieved results of the Programme and the Completed RDP III. According to the number of results published in the R&D IS RIV database thus far, it is likely that the Programme will fulfil the set result indicators. However, it is unclear how the MoH will evaluate the contribution of the individual results, projects and Programme sub-objectives with such indicators.

Table 4: Overview of achieved results published in R&D IS – RIV as of 26 November 2019

Type of result	RDP III	Programme
V – Research report containing classified information or summary research report	1	8
A - Audio-visual production	22	6
B – Specialist book	48	20
C – Chapter in a specialist book	144	68
D – Paper in an anthology	265	147
F – Results with legal protection (utility model, industrial model)	7	20
G – Technically implemented results (prototype, functional sample)	9	33
J – Article in a scientific journal (Jimp, Jsc and Jost)	3,597	1,679
M – Conference organisation	4	3
N – Methodologies, medical procedures	1	3
O – Other results that cannot be included in any of the defined types of result	231	275
P – Patent	7	8
R – Software	22	20
W – Workshop organisation	20	7
Total sum of results published in RIV	4,378	2,297

Source: prepared by the SAO based on the R&D IS data – as of 26 November 2019.

Table 5 shows the setting of quantitative result indicators in all three programmes of the MoH. This Table clearly indicates that the Programme and the New Programme have the result indicator values set in direct relation to set indicators of implementation of the programmes. This is due to the fact that both programmes expect to achieve at least one primary and one secondary result for each supported project. By contrast, the indicators of the Completed RDP III were set differently.

Table 5: Overview of set quantitative indicators of results of audited programmes

Programme result indicators	RDP III	Programme	New Programme
Minimum number of primary results	415	600	500
Minimum number of secondary results	180	600	500
Minimum number of other results	–	1,200	1,000
Minimum number of results	–	2,400	2,000

Source: programme documents for the audited programmes.

5. The MoH did not evaluate the plans for implementing the achieved results into practice and allowed for certain completed projects to be re-evaluated

As of 31 December 2018, 118 projects were completed. Based on the instructions of the MoH and CHRC, the beneficiaries were expected to prepare the final reports on the project implementation and send them to the support administrator (CHRC) by 31 January 2019. The beneficiaries were to attach a plan of implementation of achieved results into practice, i.e. the

implementation plan, to the final report. The implementation plan had to include, inter alia, the overview of results for the entire period of project implementation, expected date of implementation, manner of using the achieved results and possible commercial use of the results. The MoH did not monitor or evaluate the implementation of results according to the implementation plans. Moreover, the Ministry did not require the information on the results and their practical use from the beneficiaries in any other way.

In the case of the completed projects with the “immediate” date of implementation, the MoH did not verify the implementation of results into practice as it lacked the methodology for monitoring the fulfilment of implementation plans. Although the Programme started providing support already in 2015, the Ministry of Health did not prepare the methodology even before the completion of the implementation of the first projects at the end of 2018. Therefore, the MoH did not react to the projects being completed by setting a system for monitoring the fulfilment of the implementation plans in order for it to be able to evaluate the practical application of results and the impacts of results achieved during the project implementation.

The final report included, inter alia, information on the beneficiaries, data on the total costs, analysis of project implementation and a summary of achieved results. Final reports on project implementation had to be sent to the support administrator by 31 January 2019, while 118 projects were completed as of 31 December 2018. Each final report was evaluated by the expert evaluation body of CHRC, which evaluated the project implementation and the achieved results. The final report listed the achieved and, where applicable, the applied results. In accordance with the R&D Support Act¹³, the provider allowed the beneficiaries to submit the information on additionally applied results within 180 days as of the completion of the implementation. After the evaluation, the projects were separated into four categories of success, namely:

- E = excellent project results (with international significance, etc.);
- P = passed according to the assignment;
- C = assignment was not met, but the agreement was complied with;
- S = assignment not met, sanction provisions of the agreement apply.

According to the R&D Support Act¹⁴, the provider had to publish the final evaluation of the project by 30 June in R&D IS.

¹³ Act No 130/2002 Coll., on the support of research, experimental development and innovation from public resources and amending certain related acts, (hereinafter the “R&D Support Act”).

Pursuant to Section 9(1) of Act No 130/2002 Coll.: *“The provider will conclude a written agreement on the provision of support for the implementation of the selected project with the beneficiary of the targeted support for grant or programme project. The duration of the agreement includes the period of project implementation and the following period necessary for the evaluation of results of project implementation including the settlement of the funds provided under the budgetary rules, but no longer than 180 days as of the date of completion of project implementation.”*

¹⁴ Pursuant to Section 31(2) of Act No 130/2002 Coll.: *“The procedure for the communication of information on the announced public tenders in research, development and innovation and their evaluation by the provider to the operator is regulated by implementing legal regulation.”*

Pursuant to Section 8(1) of government resolution No 397/2009 Coll., on the information system for research, experimental development and innovation: *“The provider shall submit to the operator (...) the information on the evaluation of the projects in accordance with Section 2(1) (i) and the information on the actual costs of the project, which the provider shall submit to the operator no later than 6 months from the beginning of the calendar year following the year of completion of project implementation.”*

The first evaluation of the completed projects was performed by the expert evaluation body of CHRC in the first half of 2019. The evaluating body has determined that approximately one-third of the completed projects did not meet the Programme condition, namely the application of at least one result with exclusive dedication. For this reason, one-third of the projects was evaluated as unsuccessful. However, these projects were previously evaluated by reporters and opponents in most cases as successful and rated in E and P categories.

The issue concerning the third of unsuccessful projects was discussed at CHRC during the approval of the final project reports evaluation. CHRC’s expert evaluating body did not consider it appropriate for these projects to be evaluated as unsuccessful as other excellent results were achieved in the course of these projects. Therefore, CHRC subsequently re-evaluated the projects without exclusive dedication if the application of results occurred within 180 days from the completion of project implementation.

In accordance with legal regulations, the MoH had to submit the final evaluation of the projects by 30 June in the R&D IS along with the third of the projects evaluated as unsuccessful. Subsequently, the MoH changed the rating of these projects in the R&D IS following their re-evaluation.

The expert evaluating body of CHRC re-evaluated a total of 49 out of the 118 completed projects, i.e. 42% of the projects. After the re-evaluation, only four projects did not meet the exclusive dedication condition, but none of the projects was evaluated as unfulfilled, and the sanction provisions were not applied. According to Table 6, after the final re-evaluation, 10 projects were rated as “C – complying, no sanctions”, of which 4 projects did not meet the exclusive dedication result.

Table 6: Overview of evaluation of final project implementation reports after re-evaluation

Evaluation	E – excellent	P – passed	C – complying, no sanctions	S – not complying, sanctions	Total
Number	68	40	10	0	118

Source: MoH website: https://www.mzcr.cz/Odbornik/dokumenty/hodnoceni-zaverecnych-zprav-projektu-mz-crCHRC-crukoncenyh-k-31-122018_17795_2021_3.html.

Based on the facts listed above, the MoH and CHRC should consider adjusting the set system of the final evaluation of the projects. The change of the final evaluation of the projects is not regulated in the relevant legal regulations.

6. The MoH did not emphasise the interconnection of the measurable indicators with the set objectives in order to evaluate the contributions of the New Programme

The set indicators for the monitoring of the New Programme were not interconnected with the objectives of the strategic documents (the R&D Priorities and the Concept). The indicators of the New Programme did not correspond to the set primary objective of the New Programme or the key objectives or sub-objectives. The key objectives and sub-objectives of the New Programme did not have any measurable indicators set.

The New Programme is divided into two sub-programmes through which the objectives of the New Programme will be completed.

The primary objective of sub-programme 1 is: *“to further develop the current platform of medical applied research in the Czech Republic, with the need to focus more on the improvement of conditions for the development of international cooperation.”*

Sub-programme 1 has, aside from the primary objective, other objectives, an overview of which is provided in Table 7.

Table 7: Indicators for the objectives of sub-programme 1 of the New Programme

Target	Indicator
1) Support the development of preventive measures and procedures in healthcare (focusing on all types of prevention, i.e. primary, secondary and tertiary)	Number of programme results
2) Support the development of new diagnostic and treatment methods	Number of results of type methodology, medical procedure, patent
3) Support the development of international cooperation in medical applied research	Number of synergetic international projects implemented by the beneficiaries
4) Support the multidisciplinary cooperation in medical applied research	Number of projects implemented by organisations from different fields of medical research
5) Support the excellence of the results achieved in the field of medical applied research	Number of Jimp type publications
6) Ensure that the achieved results of the medical applied research are used as inputs for the creation and updating of recommended clinical practice in the Czech Republic	Number of results applied in recommended clinical practice in the Czech Republic

Source: Programme document for the *Programme to support medical applied research in 2020 to 2026*

The primary objective of sub-programme 2 is: *“to support the development of young researchers in their research activities and the associated rejuvenation of the medical research community to maintain the continuity of medical applied research for future generations”.*

Sub-programme 2 has, aside from the primary objective, other objectives, an overview of which is provided in Table 8.

Table 8: Indicators for the objectives of sub-programme 2 of the New Programme

Target	Indicator
1) Support the development of new preventive, diagnostic and treatment methods	Number of programme results
2) Motivate young researchers to be more interested in the research, development and innovation activities in healthcare	Number of projects led by young researchers
3) Support the inclusion of young experts in both domestic and international research and practical medicine, thus slowing down their outflow from the Czech Republic	Number of young researchers involved in project implementation
4) Increase the number of job opportunities for young researchers	Number of young researchers involved in project implementation
5) Rejuvenate the healthcare research community and support young researchers to pursue further vocational education	Number of young researchers involved in project implementation
6) Expand the staff base of research organisations dealing with medical applied research	Number of newly recorded authors of project results

Source: Programme document for the *Programme to support medical applied research in 2020 to 2026*.

The sub-programmes had their objectives and measurable indicators of their fulfilment set, but their target values and the way to determine them were not stipulated. Therefore, it is

unclear how will the MoH monitor or evaluate the successful achievement of objectives of the individual sub-programmes.

The MoH set the indicators for monitoring the contributions to the New Programme, for which it did not determine their initial and target values. The method for future evaluation of contributions of the New Programme according to Table 9 through indicators set in such manner is unclear.

Table 9: Method for monitoring the contributions of the New Programme

Contribution of the New Programme	Indicator
Improving the health of the Czech population	<ul style="list-style-type: none"> – increasing the number of early diagnosed metabolic, cardiovascular, neurological and other serious diseases and cancer, – reduction of mortality from cardiovascular diseases, – reduction of mortality from cancer, – stopping the increase in the number of patients with diabetes, – shortening of the hospitalisation or reduction of re-hospitalisation of persons with mental illness, – reducing the incidence of infectious diseases, etc.
Contributions of newly applied methods and procedures	<ul style="list-style-type: none"> – quantitative and qualitative evaluation of streamlining of clinical procedures.
Quality of medical research	<ul style="list-style-type: none"> – quality of publications (citation index), – international recognition, – membership in international bodies.
Increasing the international prestige of medical research	<ul style="list-style-type: none"> – quantity and volume of international cooperation, – number and quality of co-publications with international organisations, – membership in international bodies.
Strengthening the personnel base of medical research	<ul style="list-style-type: none"> – number and quality of research results implemented by young researchers.
Strengthening interdisciplinary cooperation in medical research	<ul style="list-style-type: none"> – intensity of interdisciplinary research activities.
Long-term development of research activities	<ul style="list-style-type: none"> – number of projects directly related to the projects implemented in the programme.

Source: Programme document for the *Programme to support medical applied research in 2020 to 2026*.

The New Programme will be difficult to evaluate as it does not have indicators determined in such a way as to objectively evaluate the set objectives. When setting the New Programme, the MoH did not emphasise the interconnection of set objectives with the indicators of their fulfilment. The MoH also did not determine the method for monitoring and evaluating the contributions and impacts of the support.

The MoH set measurable indicators for the evaluation of the New Programme. These indicators do not attest to the achievement of the primary objective or the sub-objectives of the New Programme. As in the previous programmes, the indicators were focused on the number of supported projects and the number of results. It is unclear how the regular monitoring and final evaluation of the New Programme will be carried out.

Table 10 indicates the overview of indicators of the New Programme, which should be used to evaluate the achievement of the primary objective and the sub-objectives of the programme.

Table 10: Indicators of the New Programme

Indicator	Number
Indicators of programme implementation	
Minimum number of submitted project proposals in public tenders	2,000
Minimum number of total selected (supported) projects	500
Minimum number of total successfully completed projects	375
Minimum number of projects implemented in cooperation with enterprises and research organisations	25
At least 75% of the projects are successfully completed	
Programme result indicators	
Minimum number of primary programme results	500
Minimum number of secondary programme results	500
Minimum number of other programme results	1,000
Minimum number of all programme results	2,000
Primary programme result indicators	
J _{imp} – original article in a peer-reviewed scientific journal which is listed in the Web of Science database as “Article”	460
N – methodology, medical procedure	20
P – patent	10
R – software	10
Secondary programme result indicators	
J _{imp} – article in a peer-reviewed scientific journal which is listed in the Web of Science database as “Review” or “Letter”	300
J _{sc} – original article/review in a peer-reviewed scientific journal listed in the SCOPUS database as “Article”, “Review” or “Letter”	150
B – specialist book	25
C – chapter in a specialist book	25
Indicators of scientists' motivation	
Number of projects for young researchers	50
Minimum number of awards for extraordinary results	15
Indicators of achieving programme objectives	
We presume that 65% of programme sub-objectives will be implemented in the projects	

Source: Programme document for the *Programme to support medical applied research in 2020 to 2026*.

The expected results of the New Programme remain to a significant degree focused on the publication activities. The indicators of the primary and secondary results of the New Programme expect the achievement of the greatest number of results of the “article in an impacted journal” type. In contrast, the number of results applicable in practice such as the methodology, medical procedure, patent or software is expected to be much lower, even compared to the number of achieved results of this type in the current Programme. The number of expected results of the New Programme is underestimated, considering the course of the previous programmes.

7. The cooperation of MoH and CHRC resulted in time delays and other shortcomings in the course of the support administration process

The basic requirement of expedient and effective provision of targeted support is a clear definition and fulfilment of competencies and responsibilities of the bodies responsible for setting the conditions for support, method for project selection and administration of support. CHRC performs the administration of support for the MoH since its establishment in 2014. In some cases, time delays and other shortcomings occurred in the communication between the MoH and CHRC. As a result of the unclear delegation of competencies and responsibilities associated with the preparation and provision of support, there was an increased administrative burden and an increased risk of errors.

Preparation of Agreements

CHRC prepared the draft agreements for provision of support. These drafts were then sent to the Ministry of Health, which approved them or returned them with comments. Subsequently, CHRC sent the agreements to the individual beneficiaries for signing. The beneficiaries always signed two counterparts of the agreement and sent them back. After receiving the signed agreements from the beneficiaries, CHRC handed them over to the MoH for signing. After the signing of the agreements, the MoH entered all agreements in the Register of Contracts and returned them to CHRC. The Council sent one copy of the given agreement to the beneficiaries and kept the other copy.

This lengthy process caused in some cases in the 2015 public tender that the beneficiaries received the signed agreements late. Therefore, they could not conclude further agreements with the project co-researchers within the deadlines in accordance with the tender dossier for the 2015 public tender¹⁵. In accordance with this dossier, the beneficiary was obligated to conclude an agreement on partial implementation of the project with each co-beneficiary within 30 calendar days from the effective date of the agreement on provision of support. The agreement between the beneficiary and the co-beneficiary had to include the attached signed agreement between the beneficiary and the provider. In all 16 audited projects in the 2015 public tender, the beneficiaries could not comply with this deadline as CHRC sent the signed agreement after the period of 30 calendar days.

Project Change

CHRC did not prepare the amendments to the agreements on change of project implementation within the required deadlines. The beneficiary may request the provider to approve the changes which occurred in the course of the project implementation. The R&D

¹⁵ Tender dossier for the first public tender in research, experimental development and innovation. The provisions of Annex 8 part 1.1(5) of the tender dossier stipulate: *“If the project implementation involves one or more other participants, the beneficiary is obligated to conclude an agreement on partial implementation of the project in accordance with the conditions set out in the agreement on provision of support with each such participant within 30 calendar days as of the effective date of the agreement on provision of support and deliver such agreement with all annexes to the provider within such deadline; this agreement is concluded for the entire period the other participant participates in the implementation.”*

Support Act¹⁶ and the tender dossier¹⁷ stipulate an obligation to inform the provider of project changes within 7 days as of the date the beneficiary becomes aware of such changes. If the provider approves the beneficiary's request, the provider will conclude an amendment to the agreement on provision of targeted support within 60 days as of the date it received such request.

Changes in project implementation of projects in the 2015 public tender were reviewed. 13 requests for change in project implementation out of the total of 69 requests submitted were selected. On the sample of requests, the SAO verified the date of receipt and the date the need for project change was discovered. With 10 requests, the deadline of 7 calendar days was not met. Despite the fact that the beneficiaries did not meet the set deadline, CHRC accepted their requests and agreed to prepare the amendment on change of project implementation. However, CHRC did not prepare the amendment for signing in a manner that would allow the provider to make a decision within the set deadline of 60 days in all of the 13 audited cases. The MoH concluded the amendments to the agreements with the beneficiaries only after the expiry of such deadline.

Retention of Documentation

According to the R&D Support Act¹⁸, the MoH must keep the documentation on public tenders for at least 10 years as of the date of announcement of results of the public tender in research, development and innovation. Documentation for the projects in public tenders was kept by the MoH in the internal *Information system for management of research projects*, the physical copies of the agreements, amendments and other documents were kept by CHRC.

The MoH did not keep the physical documentation on the individual projects and public tenders announced in the Programme. The MoH also did not transfer the obligation to keep the documents on individual projects and public tenders to CHRC. The MoH did not proceed in accordance with the Act on archiving and records management¹⁹ or in accordance with its

¹⁶ Provisions of Section 9(8) of Act No 130/2002 Coll. stipulate: *"The beneficiary is obligated to inform the provider in writing of any changes occurring during the effective period of the agreement on provision of support or during the period of enforceability of the decision to provide support related to its legal person, information required to prove eligibility or information that could affect the project within 7 calendar days as of the date the beneficiary became aware of such a fact."*

¹⁷ Tender dossier for the first public tender in research, experimental development and innovation. The provisions of Annex 8 part 5.1(3) of the tender dossier stipulate: *"If the provider approves the beneficiary's request, the provider will conclude with the beneficiary an amendment to the agreement on provision of targeted support or issues a decision on the change of the decision on the provision of targeted support within 60 calendar days as of the date the provider receives such a request."*

¹⁸ The provisions of Section 26(1) of Act No 130/2002 Coll. stipulate: *"The records of a public tender in research, development and innovation including all submitted project proposals are maintained by the provider for the period of at least 10 years as of the announcement of results of a public tender in research, development and innovation."*

¹⁹ Act No 499/2004 Coll., on archiving and records management. The provisions of Section 68(1) and (4) of Act No 499/2004 Coll., on archiving and records management, stipulate: *"(1) All processed files and other documents of a designated originator are stored in the registry for the period of retention. (...)*

(4) The building where the registry or administrative archive is located must meet the following conditions:

- a) document storage area must not be endangered by floods,*
- b) fire safety documentation must be prepared for such area, and it must be equipped with hand fire extinguishers; (...)*
- c) document storage area must be secured against the harmful effects of elements and effects caused by human activity, (...)*

own record-keeping and shredding rules. No obligation to keep the documentation on the individual projects and public tenders is even imposed on CHRC.

Provision of Targeted Support

The MoH must provide the support to the beneficiary within 60 calendar days²⁰ as of the effective date of the agreement. From a selected sample of 24 projects²¹ in the audited period of 2015-2019, the SAO discovered that, in the case of 17 agreements and 15 amendments, the support was provided after more than 60 calendar days. The support provided late amounted to CZK 83,695,000.

Data Transfer to R&D IS

The R&D IS is intended to ensure the collection, processing, provision and use of the data on research, development and innovation. The purpose of this public administration system is to provide information to the government, the providers and the public with the goal, in particular, to inform about the announced public tenders and their results. It is also meant to inform about the research projects and activities and their results, audit the provision and use of the targeted or institutional support and evaluate the results of the research organisations and programmes.

In the 2015 and 2016 public tenders, the MoH did not comply with the statutory²² deadline for the submission of data on projects supported out of the budget chapter 335 – *Ministry of Health* in the R&D IS CRP database. In 2015 and 2016, the Ministry did not meet the deadline by 24 calendar days and 7 calendar days respectively.

The MoH had the information from the beneficiaries in the form of interim and final reports at its disposal, but it did not verify this information in the CRP and IRR databases and did not examine any irregularities. One of the conditions for the provision of targeted support is the input of the information on results in the R&D IS by the beneficiary. Therefore, the provider was supposed to verify the compliance with this condition when evaluating the completed projects. Therefore, the MoH did not ensure the veracity and timeliness of the provided information through the R&D IS within the meaning of the R&D Support Act²³. Nevertheless, the MoH based its evaluation of the programmes on the information in these databases.

In four cases out of 118 projects, no results were entered in the R&D IS CRP database for the completed projects in the 2015 public tender. One of the four projects was rated as excellent,

d) document storage area must be equipped with document storage racks,

e) document storage area must be secured against unauthorised entry."

²⁰ Provisions of Section 10(1) of Act No 130/2002 Coll. stipulate: "... the provider is obligated to start providing support within 60 calendar days as of the effective date of the agreement on provision of support or as of the date the decision on the provision of support is issued..."

²¹ 24 projects: Of 16 projects of the beneficiaries audited, 4 projects were randomly selected from the 2016 public tender, 4 projects were randomly selected from the 2017 public tender.

²² The provisions of Section 31(4) (b) of Act No 130/2002 Coll. stipulate: "The provider shall submit the data on the projects or activities pertaining to research, development and innovation supported out of its budget chapter to the operator within 50 calendar days

b) as of the effective date of the agreement on provision of support or date of enforceability of the decision to provide support for newly launched research, development and innovation projects or activities.

²³ The provisions of Section 12(1) of Act No 130/2002 Coll. stipulate: "Support may only be provided subject to the publication of true and timely information on the conducted research, development and innovation and its results through the research, development and innovation information system by the beneficiary and the provider."

two “passed” and one “did not comply with the assignment”. The R&D IS CRP database also showed results twice, for example, the same result was indicated for several providers and projects.

The shortcomings listed above clearly show that the data in the R&D IS CRP database cannot be considered as entirely accurate and correct. The evaluation of the individual programmes and the overall level of R&D in the Czech Republic is based primarily on the R&D IS data. For that reason, the SAO brings attention to the risk of misrepresentation of the R&D results in the Czech Republic.

Based on the above-mentioned facts, the SAO recommends specifying the tasks and activities of the provider of the administrative support (CHRC), in particular, with respect to archiving and handling of documents of the MoH. At the same time, the SAO recommends streamlining the information and communication tools used for administration.

Absence of Financial Audits of Projects

Pursuant to the R&D Support Act, the MoH is obligated to carry out audits of the beneficiaries for at least 5% of the overall support provided in the given calendar year.

On 16 May 2017, the MoH delegated the obligation to carry out financial audits to CHRC. Before May 2017, the MoH did not perform any financial audits of the projects. Thus, the MoH did not comply with the R&D Support Act²⁴.

CHRC carried out audits since May 2017, and in the given year it audited 4.25% of the allocated funds. Therefore, in 2017, the minimum percentage of audited funds in accordance with the requirements of the R&D Support Act was not complied with. The data presented in the following Table clearly show that the set minimum percentage of audited funds of 5% was complied with in 2018 and 2019.

Table 11: Financial audits performed by CHRC

Year	Amount of support (in CZK)	Audited volume (in CZK)	Percentage of audited funds from allocated support
2017	981,174,000	41,722,522	4.25%
2018	1,186,214,000	80,949,000	6.82%
2019	1,089,079,000	63,183,000	5.80%

Source: CHRC information, processed by the SAO.

In 2017, 14 projects of 7 beneficiaries were audited, in 2018, 27 projects of 16 beneficiaries were audited, in 2019, 21 projects of 12 beneficiaries were audited.

In accordance with its statute, CHRC has been conducting on-site expert, factual and financial audits of the supported projects of the beneficiaries of targeted support since May 2017 in accordance with the approved audit plans of CHRC.

²⁴ The provisions of Section 13(3) of Act No 130/2002 Coll. stipulate: “The provider is obligated to carry out financial audits of beneficiaries in accordance with special legal regulations for at least 5% of the overall targeted and institutional support provided by the provider in the given calendar year.”

8. Some of the audited projects were not entirely effective and efficient

16 selected completed projects from the first public tender were subjected to the evaluation of expediency and effectiveness. The total support provided to these projects amounted to CZK 179,914,968.

Out of the total number of 16 audited projects, the SAO evaluated 11 of them as effective and efficient. Two projects were evaluated as efficient, but effective with minor shortcomings. One project was evaluated as efficient, but with limited effectiveness. One project was evaluated as effective, but with limited efficiency. One of the projects was evaluated with limited efficiency and effectiveness. Therefore, five of the audited projects were not evaluated as entirely effective and efficient. The detailed evaluation of the projects is attached as Annex 2 of this Audit Conclusion.

None of the audited projects indicated that the beneficiaries failed to fulfil the conditions for the support or used the funds in violation of legal regulations. The projects were selected by the evaluating body in a non-discriminatory and transparent manner.

The effectiveness was evaluated primarily on the basis of the achieved expected results of the projects and their use and contribution to the achievement of objectives of the medical applied research programmes. The relative importance of each result was taken into consideration. A four-point scale was used for the evaluation (project: 1. is effective, 2. is effective with minor shortcomings, 3. has limited effectiveness, 4. is not effective), see Annex 1.

The efficiency was evaluated based on the use of the public funds achieving the best possible scope, contribution and quality of the performed tasks with the amount of funds available for their accomplishment. When evaluating the efficiency, same as in the case of effectiveness, a four-point scale was used (project: 1. is efficient, 2. is efficient with minor shortcomings, 3. has limited efficiency, 4. is not efficient), see Annex 1.

List of Abbreviations

CAS	Czech Academy of Sciences
CHRC, Council	Czech Health Research Council
CRP	<i>Central register of R&D projects</i> (one of the five R&D IS modules)
CR	Czech Republic
R&D IS	<i>Information system for research, development and innovation</i>
Concept	<i>Concept of Medical Research until 2022</i>
Conclusion	Audit Conclusion
MoC	Ministry of Culture
MoD	Ministry of Defence
MoIT	Ministry of Industry and Trade
MoEYS	Ministry of Education, Youth and Sports
Moi	Ministry of the Interior
MoH, Ministry	Ministry of Health
MoA	Ministry of Agriculture
SAO	Supreme Audit Office
New Programme	<i>Programme to support medical applied research in 2020 to 2026</i>
R&D Priorities	<i>National priorities of oriented research, experimental development and innovations</i>
Programme	<i>Programme to support medical applied research in 2015 to 2022</i>
IRR	<i>Information Register of R&D results</i> (one of the five R&D IS modules)
RDP III	<i>Research and Development Programme of the Ministry of Health III.</i>
R&D Council	Research, Development and Innovation Council
TA CR	Technology Agency of the Czech Republic
Completed RDP III	<i>Research and Development Programme of the Ministry of Health III</i>
R&D	research, development and innovation
R&D Support Act	Act No 130/2002 Coll., on the support of research, experimental development and innovation from public resources and amending certain acts (the R&D Support Act)

Annex 1 of Audit Conclusion: Four-point scales for evaluating the effectiveness and efficiency of the projects supported in the Programme

1. Effectiveness Evaluation

Level of project effectiveness	Definition of effectiveness level
1. Project is effective	The project has achieved all the expected results. It is assumed that the results of the research bring a real contribution to the relevant field of healthcare.
2. Project is effective with minor shortcomings	Nearly all the expected results were achieved. Failure to achieve some of the expected results does not have a significant impact on the success of the project and its use in healthcare.
3. Project shows limited effectiveness	In terms of the number of results, the project predominantly did not achieve the expected results, but the potential reception or the possibility of use in the solution of the issues listed in the project is likely to affect the development in the field.
4. Project is not effective	The expected results were not achieved at all, e.g. due to their unrealistic nature.

2. Efficiency Evaluation

Level of project efficiency	Definition of efficiency level
1. Project is efficient	The expected objective of the project was achieved with the corresponding amount of funds expended.
2. Project is efficient with minor shortcomings	Some of the prerequisites set for the efficiency of the project are not entirely met. For example, an uneconomical expenditure of a small part of the project costs (e.g. higher than usual price) was found.
3. Project shows limited efficiency	A significant part of the provided funds (more than 50%) was found to be expended uneconomically, or some of the expenditures are significantly uneconomical.
4. Project is not efficient	The project and its implementation have major shortcomings with respect to the cost-effectiveness of the expenditures. The project is always rated as inefficient if it is evaluated as ineffective.

Annex 2 of Audit Conclusion: Overview of projects selected for evaluation effectiveness and efficiency

Project number	Project name	Audited beneficiary	Funds drawn (in CZK)	Evaluation of effectiveness and efficiency
Programme to support medical applied research in 2015 to 2022				
15-30657A	Proteomic analysis of medulloblastoma molecular subgroups: discovery of novel clinically relevant markers	Brno University Hospital	7,366,000	The project was evaluated as showing limited effectiveness and efficiency as it did not achieve all the expected primary and secondary results in the allotted time.
15-25809A	National study of leukaemia cell mutations and clonality in patients diagnosed with acute myeloid leukaemia	Brno University Hospital	14,427,000	The project was evaluated as effective and efficient with minor shortcomings due to the failure to achieve all secondary results.
15-33686A	The study of the relation between Epstein-Barr virus infection and development of IgA nephropathy	Olomouc University Hospital	6,427,000	The project was evaluated as effective and efficient and achieved all the expected results.
15-31921A	Prevalence of spasticity in patients suffering from ischaemic stroke in the internal carotid artery territory	Olomouc University Hospital	3,579,000	The project was evaluated as effective and efficient and achieved all the expected results.
15-32497A	Bioactive nanostructured surfaces for histocompatible implants	Institute of Physiology CAS	19,477,000	The project was evaluated as effective and efficient and achieved all the expected results.
15-27431A	Effect of acute hyperinsulinemia and postprandial hyperglycaemia on endothelial function in patients with type 2 diabetes mellitus and healthy subjects	Institute for Clinical and Experimental Medicine	9,944,000	The project was evaluated as effective and efficient and achieved all the expected results.
15-28745A	Nutrition-based therapy of liver disease of different origin: effect of n-3 PUFA	Institute for Clinical and Experimental Medicine	15,806,182	The project was evaluated as effective and efficient and achieved all the expected primary results.
15-27178A	Quantitative mapping of the myocardium and flow dynamics using MRI in patients with non-ischemic cardiac disease - methodology improvement	Institute for Clinical and Experimental Medicine	9,664,786	The project was evaluated as effective and efficient and achieved all the expected primary results.
15-34405A	Identification of novel therapeutic targets in chronic myeloid leukaemia via systematic analysis of BCR-ABL interactome	Masaryk University	11,982,000	The project was evaluated as showing limited effectiveness and efficiency as it mostly did not achieve the expected primary and secondary results in the allotted time.

Project number	Project name	Audited beneficiary	Funds drawn (in CZK)	Evaluation of effectiveness and efficiency
Programme to support medical applied research in 2015 to 2022				
15-32484A	New biotechnologies in prevention and treatment of biliary tract stenosis	Masaryk University	17,000,000	The project was evaluated as showing limited effectiveness and efficiency as it did not achieve all the expected primary and secondary results in the allotted time.
15-27726A	Technologies of nano-tubes and nano-silver for antibacterial surface treatment of orthopaedic implants	Palacký University Olomouc	16,023,000	The project was evaluated as effective and efficient and achieved all the expected results.
15-28659A	Prognostic factors of organ and tissue damage in selected systemic autoimmune diseases	Palacký University Olomouc	10,483,000	The project was evaluated as effective and efficient and achieved all the expected results.
15-29021A	Identification of novel diagnostic, prognostic and predictive biomarkers in meningioma patients using comprehensive genomic approach	Palacký University Olomouc	10,326,000	The project was evaluated as effective and efficient and achieved all the expected results.
15-31604A	Targeted damage of the DNA repair mechanisms as a tool for cancer therapy	Palacký University Olomouc	17,562,000	The project was evaluated as effective and efficient and achieved all the expected results.
15-32198A	Construction of recombinant mimotopes for induction of neutralizing antibodies against HIV-1 gp120 glycoprotein using high-affinity binders approach	Palacký University Olomouc	6,200,000	The project was evaluated as effective and efficient with minor shortcomings, achieved the expected results.
15-32715A	Familial aggregation of neurodegenerative parkinsonism with dementia in Czech Republic-clinical, molecular - genetic and morphological study (HORPARK)	Palacký University Olomouc	3,648,000	The project was evaluated as effective and efficient and achieved all the expected results.
Total			179,914,968	