

Ex-post evaluation

National Emergency System II, Kyrgyzstan

Title	Establishment of a national emergency response system – Phase II		
Sector and CRS code	Medical services (CRS 12191) and medical training and education (CRS 12181)		
Project number	BMZ NO.: 200965699 (investment measure), 2009 70 160 (accompanying measure)		
Commissioned by	Federal Ministry for Economic Cooperation and Development, BMZ		
Recipient/Programme executing agency	Ministry of Finance of the Republic of Kyrgyzstan/ Ministry of Health of the Republic of Kyrgyzstan		
Project volume/ Financing instrument	EUR 2.3 million (investment measure), EUR 0.7 million (accompanying measure)		
Project duration	2012		
Year of report	2025	Year of random sample	2024

Objectives and project outline

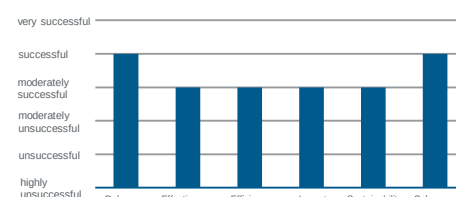
The outcome objective was to improve the quality of emergency care at the regional hospital in Jalal Abad. This was intended to reduce the impact on health. The previously decentralised provision of emergency care in the respective specialist departments was centralised through the construction and equipping of an interdisciplinary emergency department to ensure adequate acute care. In addition, medical staff in the emergency department and the ambulance service were trained and basic concepts for the organisation of emergency medicine were developed.

Key findings

The project paved the way for adequate emergency care at the hospital in Jalal Abad, but was unable to achieve the desired standards of care and is therefore considered only partially successful overall:

- Due to the decentralised nature of emergency care to date, the project was relevant for Jalal Abad and clearly aligned with national strategies.
- There is no clear coordination between donors in the field of emergency medicine, but the Ministry of Health centrally manages support. The few measures taken by German development cooperation fit well into the strategies and structures.
- Effectiveness is limited. The emergency room is used, but the desired standards of care are not being achieved. There is a lack of expertise and management of structural and process quality. The training courses were not coordinated with the investment and were also ineffective due to staff turnover.
- Efficiency was hampered by delays and cost increases, as well as by a lack of implementation of rationalisation measures at hospital level. The latter exacerbates the observed underutilisation.
- A reduction in the consequential damage to health in medical emergencies can be assumed to be plausible in some areas but cannot be measured. The emergency department serves as a model at national level and the concepts and experience gained have been incorporated into the current master plan.
- Sustainability is limited by a lack of capacity, particularly for maintenance and repair, and by high staff turnover.

Overall rating:
moderately unsuccessful



Conclusions

- The centralised emergency department improves accessibility and interdisciplinary care for emergency patients.
- The planned structures and processes could not be sufficiently established, partly because the training took place two years before the emergency department went into operation.
- The development of maintenance and repair capacities was unsuccessful, posing a high risk to sustainable operation.
- One-off training measures and the organisational concept for the emergency medical services were insufficient to achieve an improvement in pre-hospital care.

Ex-post evaluation – assessment according to OECD DAC criteria

Overview of the rating per criterion:

Relevance	2
Coherence	2
Effectiveness	3
Efficiency	3
Overarching developmental impact	3
Sustainability	3
Overall rating:	3

Abbreviations:

AK	Final assessment
GDP	Gross domestic product
BMZ	Federal Ministry for Economic Cooperation and Development
DAC	Development Assistance Committee
EMS	Emergency Medical Services
EUR	Euro
FZ	Financial cooperation
FZ E	FZ Evaluation
HDI	Human Development Index
ICU	<i>Intensive care unit</i>
INA	Interdisciplinary emergency room
MHIF	Mandatory Health Insurance Fund
MoH	<i>Ministry of Health</i>
PA	Project appraisal
PPB	Project appraisal report
PV	Project proposal
SDC	Swiss Agency for Development Cooperation
SWAp	Sector Wide Approach
TZ	Technical cooperation
USD	US dollar

Brief description of the project

The project aimed to strengthen emergency medical care in southern Kyrgyzstan, particularly at the regional hospital in Jalal-Abad. The establishment of an interdisciplinary emergency department (IED) was intended to enable centralised and integrated emergency care with appropriate triage and efficient and effective treatment. To this end, a new building was constructed, which is connected to the existing infrastructure and comprises a central emergency department, two fully equipped operating theatres, a procedure room and an intensive care unit (ICU). Previously, emergency patients were admitted to different buildings on the hospital campus depending on their specialisation, and outpatient care was not refinanced.

The German FC funds were used for investments in new building infrastructure and non-medical equipment. The medical equipment for the various rooms was financed through basket funding for the implementation of sector reforms in the health sector (Sector-Wide Approach, SWAp), which is supported by the World Bank, German FC and Swiss cooperation (*Primary Health Care Quality Improvement Programme*). An accompanying measure provided additional technical support for the development of necessary concepts, the training of clinical and pre-clinical staff, and the strengthening of maintenance structures in the hospital.

The aim was to improve the quality of emergency care and reduce the health consequences of emergencies. The direct target group was the population in the hospital's catchment area and the emergency services. The concepts for the interdisciplinary emergency room and for better coordination of emergency care were also intended to serve as a basis for emergency care at the national level by the *Ministry of Health* (MoH).

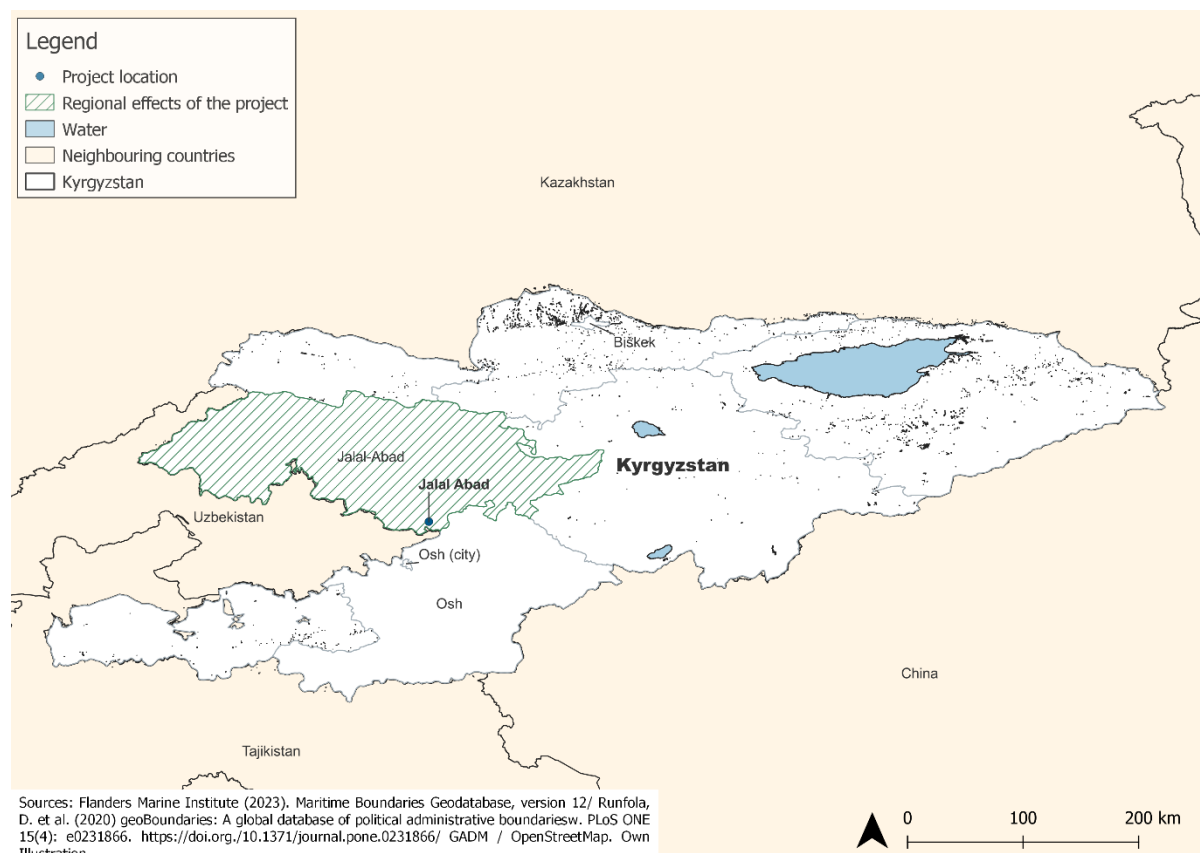
Breakdown of total costs

Due to the expanded construction option for the emergency room during the preparatory phase, the cost distribution has shifted compared to the review. The medical equipment, amounting to EUR 798,299.98, was financed through the Health SWAp, and EUR 76,489.75 was taken from the previous project (BMZ No. 2003 65 692). At the final review in 2022, the partner did not provide any proof of the costs of its own contribution, which is why the actual value of this item is assumed to be in line with the estimate.

In EUR million	Inv. (plan)	Inv. (Actual)	AM (Plan)	AM (Actual)
Total cost	2.45	3.33	0.7	0.7
Own contribution	0.15	0.15	0.00	0.0
External financing	2.3	3.18	0.7	0.7
<i>of which BMZ funds</i>	2.3	2.3	0	0
<i>of which SWAp funds</i>	0	0	0	0

Map of the project country including the project areas

Figure 1 – Map of the project region



Source: Own representation

Rating according to OECD DAC criteria

Relevance

1. Alignment with policies and priorities

With the country's independence, health care deteriorated due to the loss of allocations from the Soviet system. ¹With support from the World Bank, the Manas health reform (1996–2006) was developed and implemented. The follow-up reforms Manas Taalimi (2006–2011) and Den Sooluk (2012–2016, implemented 2014–2018) were implemented with support from the donor community. Kyrgyzstan's aim was to move away from a centrally planned system to a more financially sustainable and needs-based system and to improve the quality of care in addition to ensuring equitable access to health services. At the same time, the *Mandatory Health Insurance Fund* (MHIF)² was established. The current programme, *Healthy Person – Prosperous Country* (2019–2030), continues to pursue this reform path. However, donor support has become more focused in order to achieve specific goals. With a new edition of the basket funding under the leadership of the World Bank as a *Programme for Results*, the sector will continue to receive support, with the Federal Department of Home Affairs (FDHA) and the *Swiss Agency*

¹ The FZ support for the SWAp was evaluated in 2023 and deemed successful. The aim was to improve access to health services for all sections of the population, reduce the financial burden in the event of illness and improve the quality and efficiency of health services.

² Implementing agency analysis in PV: After the Mandatory Health Insurance Fund (MHIF) was established in 1997 to finance health services, significant achievements included the introduction of a state-guaranteed package of services in 2001 and the conversion of the MHIF into a single-payer system in 2006 (based on per capita and per case payments) by merging national and local budget allocations from tax revenues.

for Development Cooperation (SDC) remaining partners contributing through the *Multi-Donor Trust Fund* managed by the World Bank.

Following a directive from the Ministry of Health in 2004 to strengthen emergency medical care, the ***National Programme for Developing Emergency Medical Care (EMS) in the Kyrgyz Republic for 2008-2017*** was launched. The overall objective of this strategy was to strengthen emergency medical care at the primary level by improving the equipment and human resources (training measures) of the respective health care facilities. In addition, the aim was to improve access to emergency medical care by relocating ambulance stations or establishing new stations in rural areas. Emergency medical services in hospitals (secondary and tertiary level) were to be strengthened by setting up interdisciplinary emergency departments. Another focus of the National Strategy was on conducting prevention campaigns and improving communication between the various levels (especially between hospitals and emergency services) of the EMS system.

The current master plan (***Healthcare Delivery Optimisation Plan for the Kyrgyz Republic – towards integrated, patient-centred care, 2020***) confirmed the continuing precarious situation of emergency care and addressed the need for a structured approach. According to this master plan, most of the country's ambulances are outdated and do not have the necessary equipment for medical care and communication. There is also a lack of coordination, control and operations centres at regional and national level. Hospitalisation rates are low (15%) and the proportion of outpatient care is high. Emergency rooms are lacking in hospitals at the lower levels up to the regional level. Furthermore, there is no regulatory framework and funding from the MHIF is insufficient, as is the availability of personnel and continuous training. The lack of valid data has also been recognised; data is collected by the MHIF and the E-Health Centre, but its usability remains low and discrepancies are evident. Overall, the strategy revisits the core elements that were also addressed in part by the project.

2. Alignment with the needs and capacities of beneficiaries and stakeholders

Healthcare in Kyrgyzstan remains inadequate, particularly for the rural population, who often lack access to quality care. Emergency services do not adequately cover rural areas, and the various levels of care do not provide adequate emergency care. Emergency medical care is inadequate in both scope and quality, especially in rural areas, where the system ranging from emergency services to specialised hospitals does not function effectively and care depends on access to the lowest level of care available on site. Inadequate triage hinders efficiency when resources for individual care are scarce. Apart from Bishkek, Osh and now Jalal Abad, many regional and sub-regional hospitals still lack interdisciplinary emergency departments, which leads to an overlap between emergency and planned care and impairs both areas. The availability of qualified personnel is difficult overall, but particularly at the lower levels of care and in rural areas, where the challenges are even greater than in regional hospitals or in Bishkek. Low salaries are driving many skilled workers abroad or into the private sector.³

⁴In a 2010 review, cardiovascular disease (58%), traumatic injuries (10%) and respiratory diseases (9%) were among the leading causes of death in Kyrgyzstan. At the time of the evaluation, cardiovascular disease was still the leading cause of death, followed by liver and respiratory diseases. While Kyrgyzstan ranks poorly in global comparisons of cardiovascular disease, coming in 16th out of 183 countries, it ranks 107th in traffic accidents⁵. The mortality statistics are thus dominated by causes of death that could be influenced by improved emergency care.

Various ethnic groups live in the **Jalal-Abad region**, with Kyrgyz (approx. 72%) and Uzbeks (approx. 25%) making up the majority of the population. Other ethnic groups (Russians, Turks, Tajiks) each account for less than 1%. Due to ethnic conflicts and violent clashes in the south of the country in June 2010, the Ministry of Health proposed that the project focus on hospitals in Jalal-Abad and Osh () rather than continuing directly with the first phase. The BMZ also called for the measure to be designed in such a way as to mitigate conflict. After Osh had already been addressed in the first phase, the second phase focused on Jalal Abad. Jalal-Abad is one of seven administrative regions and the second largest oblast in Kyrgyzstan in terms of population. The region is located in the west of the country, is very mountainous and borders Uzbekistan. The capital, Jalal-Abad, has just under 120,000 inhabitants, and the region has around 1 million. The majority of the population lives in poverty. According to national figures (⁶), just under 30% of the population lived in poverty at the national level in 2023, with over

³ MoH Master Plan 2020

⁴ Information according to audit report

⁵ World Life Expectancy: [HEALTH PROFILE KYRGYZSTAN](https://data.who.int/dashboards/world-life-expectancy) (accessed on 17 April 2025)

⁶ National Statistical Committee of the Kyrgyz Republic: <https://stat.gov.kg/en/gendernaya-statistika/uroven-zhizni/uroven-bednosti/> (accessed on 16 April 2025)

36% in Jalal-Abad (around 20% in the Osh region and around 32% in the city of Bishkek). Osh city just under 14%, Bishkek city around 32%).

The catchment area of **the regional hospital in Jalal Abad** theoretically covers the entire region, which spans over 30,000 km², but access is difficult due to significant barriers (distance, including travel time and costs, accessibility), especially for the rural population in emergencies. The distance from remote areas to the regional hospital is up to 500 km. The 435-bed hospital serves the 180,000 inhabitants of the city and the 1.2 million inhabitants of the oblast as a second level of care. According to management, the number of people treated in general and the number of emergency patients has risen over the years, while bed capacity is still based on 1980 plans for a population of 80,000 and has not been adjusted since then. At the time of the audit, the hospital in Jalal Abad did not have a central emergency department, which meant that emergencies were admitted at six different locations in the hospital and had to be transported between different buildings for certain diagnoses or treatments. There was also no specialised staff for admitting emergencies. The ambulance service in the city was independent of the hospital and pre-hospital care was very limited, both in urban and especially in rural areas. There was a lack of structures, equipment and qualified personnel for adequate emergency care. Access was not adequate for the population, with barriers to access being even more significant in rural areas.

3. Adequacy of the concept

The establishment of an interdisciplinary emergency department (INA) for acute medical care was intended to centralise access for emergency patients at one location in the hospital so that, after adequate triage, appropriate diagnostics and therapy could be provided efficiently and effectively at this point of first contact, with the necessary exchange of information between the specialist departments. The organisation, structures and processes for acute care had to be set up accordingly, which is why it was appropriate to develop the concepts for this and train the personnel. In addition to the emergency room staff, the accompanying measures and Phase I included training regional emergency medical services personnel to improve the quality of pre-hospital emergency care. At the same time, the emergency medical services in Jalal Abad were to be restructured. Both pre-hospital and hospital care are crucial for adequate emergency care and must be well coordinated. It was therefore conceptually correct to include the emergency medical services in the project concept, even if only individual aspects of the emergency medical services were addressed, which is why the evaluation considers a widespread impact to be overly ambitious. The establishment of maintenance and repair structures and the training of maintenance personnel should ensure the sustainable use of the new capacities.

In addition, concepts for interdisciplinary emergency rooms and better coordination of rescue services should contribute to the national strategy for emergency care.

The outcome-level objective of the evaluation was that the population would use the improved emergency care at the regional hospital in Jalal Abad, thereby reducing the health consequences of poor emergency care in Jalal Abad (impact level). The original objectives were revised due to their overly ambitious nature: with the planned concept and measures, it was not possible to assume a contribution at the outcome level for the entire Jalal Abad region, nor could this be verified due to a lack of relevant data. The impact target for the review "Improvement of emergency care, especially in rural areas" and for the final review "Improvement of the health status of the population and contribution to peacebuilding" was also revised: Given the high turnover rate and limited capacities and equipment, it is not appropriate to focus on rural areas when setting targets based solely on one-off training measures for a limited number of rescue workers in rural areas. The dual objective is also not appropriate from today's perspective, as the project was not conceptually geared towards peacebuilding, even though Kyrgyz and Uzbeks live and work together in Jalal Abad; moreover, the project did not address the country's entire population, and the gap between emergency care and health status is considered too large. The indicators for measuring the achievement of objectives had not yet been finalised at the time of the audit. Due to a lack of monitoring, no quantitative indicators for measuring the quality of care and consequential damage could be collected during the evaluation, and only estimates of utilisation rates at the outcome level could be made. The project concept lacked the establishment and introduction of a clear monitoring system with relevant indicators for measuring and improving the quality of care. This could also have been transferred to emergency care at the national level.

4. Response to changes/adaptability

The expansion of measures from a "first aid access point" to an emergency room with attached operating theatres and intensive care capacities was fundamentally understandable and appropriate for rationalisation at

hospital level. The resulting increase in costs meant that the funds for medical equipment had to be financed through the SWAp.

Rating summary

The need to improve emergency care in both the clinical and pre-clinical sectors existed both at the time of the review and from today's perspective. The project concept was fundamentally suitable for improving patient care, although the level of quality required across the board must be considered overly ambitious. Due to the lack of quality management and monitoring structures to monitor the quality of care, the measurability of the objectives was limited from the outset. Nevertheless, the overall relevance is still considered good.

Relevance: 2

Coherence

5. Internal coherence

The project evaluated here builds on a previous project (BMZ No. 2003 65 692) to improve emergency care in Kyrgyzstan, which was implemented between 2007 and 2024. As part of this project, medical, radiological and laboratory equipment was procured for emergency care facilities in Bishkek, Osh City and Osh Oblast, and ambulances were purchased for the stations in Bishkek and Osh. As part of an accompanying measure, a "Concept for the Development of the Emergency Medical Care System in the Kyrgyz Republic for 2008-2017" was drawn up with the aim of improving the quality of emergency care. In addition, study tours were organised and training courses were held for around 1,000 emergency care workers. The previous project is not part of this evaluation, but the current project was able to build on some of the experience gained in the previous project.

A current FC project addresses the sustainability of investment measures in the health system by setting up an inventory system for medical equipment and infrastructure and associated training measures. This has the potential to contribute to the sustainable operation of the measures evaluated (see Sustainability).

German TZ is currently supporting the digitisation of emergency control centres in a second phase. While the control centre in Osh was supported in the first phase, the emergency services in Jalal Abad and Batken are now to be digitised. During the evaluation, the emergency control centre in Bishkek had already implemented a well-designed digital control system with impressive ownership. This not only improves the rapid deployment of vehicles and personnel, but also pre-hospital care through more accurate recording of emergencies and advice during emergency calls.

6. External coherence

Measures in the public health sector continue to be coordinated centrally by the MoH, although the MoH's capacity is very limited with only 75 employees – support is provided by consultants. A special coordination mechanism with and between donors related to emergency medical care could not be identified during the evaluation. Although no other donors were involved in emergency medical care at the time of the review, various cooperation arrangements appear to exist at present. During the evaluation, ambulance stations financed by the Kuwait Fund were observed and support from the Norwegian Red Cross was reported, but no further details are available.

The project is directly related to the financing of medical equipment through the SWAp. Furthermore, it can be assumed that SWAp measures generally strengthen healthcare structures, especially at the primary level, and thus also benefit emergency care. At the time of the evaluation, the World Bank had approved an additional USD 11.45 million for the sector-wide *Primary Health Care Quality Improvement Programme*.

Rating Summary

Overall, coherence is assessed as successful. Within the framework of German development cooperation, the two projects to improve emergency medical care are relatively isolated solutions but are embedded in the overall commitment without duplication. External coherence is ensured, even though there is no clear coordination

structure between the donors in cooperation with the MoH. Here, too, no countervailing measures could be identified, and it can be assumed that the MoH is aligning the measures as a whole with its strategy.

Coherence: 2

Effectiveness

7. Achievement of (intended) objectives

The objective adjusted as part of the EPE was for the population to use the improved emergency care at the regional hospital in Jalal Abad. Due to a lack of data on the development of emergency care and the quality of care, the achievement of the objective at the outcome level can only be estimated on the basis of spontaneous collection of usage data from the various units:

Table Target achievement outcome:

Indicator	Status at PA	Target value	Actual value at EPE
(1) Number of patients treated per year	No data	25,550 ⁷	20,440 Partially fulfilled
(2) Completed units of the new INA in use On the ground floor: 1. INA including triage, monitoring beds, shock room, plaster room, procedure room 2. Radiology 3. Emergency laboratory 4. Ultrasound 5. CT room On the first floor: 6. Intensive care unit 7. 2 operating theatres 8. Sterilisation	0	8	6 (not in use: sterilisation and CT room) Partially fulfilled
(3) Number of operations in the 2 emergency operating theatres	0	2,700 ⁸	1,642, ⁹ (of which 840* are emergency operating theatres) Partially fulfilled
(4) Maintenance and repair structures for buildings and equipment are used ¹⁰ : 1. Equipment Hospital workshop 2. Training on maintenance procedures 3. Training of medical technicians	0	3	0 Not fulfilled

*Calculated number per year from the INA/OP registration books for January 2025

During the evaluation mission, the interdisciplinary emergency department (INA) made a bright and clean impression, and the staff appeared committed and friendly in their dealings with patients and relatives. Staff and management were very satisfied with the new building and the structures created by the project. According to management, there were no patient complaints, although no structured patient satisfaction survey had been

⁷ Service Organisation Concept: Expected annual patient volume excluding children and cardiology

⁸ Rationalisation Concept, page 12 – Emergency cases from all departments except ophthalmology – 1,350 per operating room on the second floor of the Emergency Department.

⁹ According to verbal information provided during the evaluation, between 2 and 7 procedures are performed per day in the two operating theatres, with an average of 1,642 (4.5*365).

¹⁰ Main measures according to the audit report

conducted. Overall, the capacities created are being utilised; only the maintenance and repair structures could no longer be found.

- (1) According to the INA, the planned **number of emergency patients** has almost been reached. It was reported that more people are receiving outpatient care than are being admitted, and that the majority of patients arrive at the INA by their own means – according to the information provided, only 10–30% of patients are brought in by the emergency services.
- (2) The **new units built and equipped as part of the project** are largely in use. The INA, with its triage area, monitoring beds, plaster room, room for minor surgical procedures and shock room, appeared to be in use, as did the radiology department, the emergency laboratory¹¹, the ultrasound diagnostics department, the intensive care unit and the two operating theatres on the first floor. Sterilisation was not in operation, but this did not affect the operation of the other functional rooms due to capacity in other areas. Similarly, the CT scanner procured with MoH funds after the project was completed was out of order. According to the visual inspection during the evaluation, most of the medical equipment is functional and is being used to a greater or lesser extent, although its potential is not being fully exploited and a lack of maintenance and servicing is already restricting its use in some cases.
- (3) The **capacity of the two operating theatres** on the first floor is far from being fully utilised. The number of emergency operations recorded in the books for January 2025 revealed a glaring underutilisation of the new operating theatre capacity, with an estimated 840 operations per year instead of 2,700. In addition, however, the operating theatres were used for planned procedures, for which there are no valid data despite intensive enquiries. On site, verbal reports ranged from 2 to 4, and sometimes 6 to 7 operations per 24 hours. It was confirmed that other operating theatres in the hospital continued to operate contrary to the rationalisation plans. No structures for operating theatre management to ensure efficient use, including of the capacity created by the project, could be found.

In the **intensive care unit**, 7 of the 8 intensive care beds were occupied at the time of the assessment, but not with seriously ill intensive care patients, but with a mixture of different patients, only some of whom required monitoring. The analysis revealed that the beds were used by various surgical disciplines as pre- and post-operative monitoring beds, as additional intensive care bed capacity when other departments were short of beds, and as a recovery room for the two new operating theatres. Although information was provided on the number of patients and patients in the intensive care unit in January 2025¹², no clear bed occupancy rate or other valid indicator can be derived from this, which is why a quantitative assessment is not available.

- (4) **Maintenance and repair structures** were completely lacking, and even after enquiries, no plans could be found (see 8. Contribution to the achievement of objectives below).

While the infrastructure provided the basis for structural quality, on-site assessments showed that the structures and equipment of the new INA were **not (always) used as intended** and that service provision was (in some cases) **below the desired standard**, as the following examples show:

- The triage concept for the rapid categorisation of patients according to the severity of their illness was no longer available to staff and management, and the patient flow did not correspond to the planned concept. These shortcomings did not have a negative impact on patient care during the observation period, as the INA's utilisation rate was low to moderate. Nevertheless, significantly more effective care could have been achieved with a structured triage and the planned patient flow concept. In general, however, the centralised categorisation of patients is a major advantage as it improves resource allocation – this was also highlighted by the MoH.
- The shock room for treating the most serious emergencies lacked basic equipment for rapid emergency medical treatment. Even when treating emergency patients in the INA's monitoring room, the necessary equipment had to be gathered from various rooms in the emergency department.
- Monitors for monitoring all vital parameters were used, if at all, only to monitor oxygen saturation. In the monitoring room with seven beds, the acoustic (warning) signals of the monitors were switched off, even though these are intended to enable the staff to react immediately. The ECG function was not used, even to monitor

¹¹ The blood bank was not used; instead, another blood bank approximately 100 metres away was used. The operation of the blood bank in the emergency department was considered inefficient by the staff.

¹² A total of 205 patients were reported for January 2025, including 70 post-operative patients from the two adjacent operating theatres for monitoring, 30 post-operative patients from other operating theatres, and 105 other patients for other reasons.

anaesthetised patients during surgery. Common standards were therefore not fully implemented. In addition, considerable uncertainty was observed in the use of the equipment on emergency patients: during the time-critical initial treatment of a seriously ill patient, for example, the staff were unable to connect the patient to the monitor and use this device for his benefit. This confirms the observations already made by the AK.

- A portable ultrasound device was procured by the project, but even seriously ill patients were carried across the building to the stationary ultrasound device instead of bringing the portable device to the patient.
- No ventilators were in use during the assessment, neither at the monitoring beds nor at the newly created intensive care beds. However, a brief inspection of the maintenance and preparation of the existing devices revealed considerable deficiencies that made their effective use on patients appear questionable, to say the least.

The positions according to the staffing plan for the new INA appeared to be filled. However, in interviews, the issue of individual employees being overworked was raised several times, although this could not be verified during the on-site assessment. It was also pointed out that employees cannot be sent on training courses due to staff shortages. Staff turnover is enormous, and there have been frequent changes in the management of the INA in particular, which places enormous demands on capacity.

Access to emergency medical care appeared to be available to all sections of the population, regardless of ethnic origin. Nevertheless, the MoH pointed out that emergency care is free for the 70% of the population who are insured – uninsured sections of the population have to pay. Locally, it was pointed out that transport from remote areas remains an unresolved problem. There were also reports of various situations in which patients had to pay at least part of the cost of necessary treatment.

8. *Contribution to the achievement of objectives*

In addition to investments in the construction and equipping of the interdisciplinary emergency room, including accompanying consulting services, necessary concepts were developed as part of the accompanying measures:

- The **organisational concept** for the INA envisaged centralised care for all emergencies in one location. However, changes were made during the construction phase, which led to specific patient groups being treated separately outside the INA: during evaluation, cardiological, obstetric and all paediatric emergencies were treated in other buildings and, in the case of cardiological emergencies, even in a separate facility. This contradicts the idea of a centralised, interdisciplinary emergency department. The implementation of the organisational concept can only be considered partially successful.
- The **rationalisation concept** envisaged closing operating theatres and intensive care capacities in other departments with the opening of the new INA. Already during the final inspection in 2022, it was found that original intensive care beds and operating theatres in the old departments of the hospital were still being used, contrary to this concept. This was confirmed during the on-site evaluation. The rationalisation concept was therefore only partially implemented and contributes to the underutilisation of the newly created capacities, with operating theatres and intensive care units also being used for other purposes (see above).
- The *open-room concept* envisaged a room layout with a large hall for seven monitoring beds and a central position for nursing staff, which would allow visual and, when using the monitors with signals, auditory monitoring of all beds at the same time. This concept was implemented as planned.
- The project also included a **new emergency services concept**, according to which the city's ambulances are now located on the hospital grounds and report directly to the hospital administration. By centralising the ambulances, which were previously affiliated with various primary care health centres, the hospital should be able to better manage referrals from primary care facilities and thus regulate the influx of patients. In addition, the emergency services should be able to consult each other in complicated cases or when the indications are unclear. According to the emergency services personnel, apart from the relocation to the hospital, there were no relevant changes to their work as a result of the concept –

the MoH also noted that the new functions had not yet been implemented.¹³ During a visit to a more remote ambulance station, the possibility of consulting with emergency room staff was also unknown – the station could only be reached via private telephones, or emergency calls were forwarded from the control centre in Jalal Abad. Due to a lack of valid data, it was not possible to determine the extent to which the restructuring has improved services for patients, especially in more remote areas. The concept appeared to have been only partially implemented.

The investments made thus enabled the project to contribute in part to establishing the necessary structures and processes for efficient and effective emergency medical care. The **management of medical care quality** was already lacking in the project approach (see Relevance). No structures or concepts for quality management could be found at the hospital either. According to the MoH, external monitoring of the quality of care is the responsibility of the health coordinators and the MHIF, but no clear system with an impact at the operational level could be identified. Only isolated, spontaneous case consultations appear to take place at hospital level.

As part of the accompanying measure, between January 2017 and July 2018, 934 emergency medical staff from various disciplines (ambulance services and hospital staff) were trained in various courses on emergency care and management at the *Kyrgyz State Medical Institute for Postgraduate and Continuous Education* in Bishkek and Osh. Due to delays in the completion of the emergency room, the **training component** had already been completed two years before the INA opened in September 2020, which significantly limited its effectiveness in terms of the efficient use of the INA and the implementation of improved process quality. The curricula developed and the training equipment procured through the project continue to be used by some of the training institutes. On-site discussions revealed significant problems with continuous (emergency) medical training. Although the training cycle is mandatory every five years, compliance is not monitored and there are no consequences. International training for the INA took place in 2018, and the final training in May 2021 was intended to deepen the know-how through on-the-job coaching. The effects of the study trip to Germany in 2017 could not be assessed during the evaluation. Due to high staff turnover caused by trained personnel moving abroad and into the private healthcare sector, there were hardly any trained employees left at the hospital and in the emergency medical services at the time of the evaluation. The intended positive effects of the training on patient care were therefore hardly noticeable.

The **maintenance structures** supported by the project could no longer be identified on site. As part of the accompanying measure, an inventory list and a maintenance concept using the *samedis* software were submitted for the INA's equipment following the warranty period, and maintenance technicians were trained – however, none of this could be observed at any level during the evaluation. Maintenance concepts were unknown, the intended *samedis.care* software was not used, there was no maintenance workshop, no personnel qualified to perform maintenance, either for medical equipment or for building technology, and the maintenance budget for the INA could not be specified (1.0–1.5 million SOM per year was mentioned for the entire hospital, i.e. around 10,000-15,000 EUR) and even operating instructions for medical equipment were completely missing. This had already had a significant impact on operations:

- The sterilisation equipment procured for the INA as part of the project was defective and, according to local information, could not be repaired by technicians from Osh or Bishkek, meaning that older equipment in other hospital buildings had to be used to sterilise instruments.
- The computer tomograph subsequently procured by the MoH was also not operational and there appeared to be major problems with repairs and access to the necessary expertise.
- According to interviews, the oxygen connections in the new building had repeatedly failed. Of the seven monitoring beds in the INA, the connection could only be used on two beds. Spare parts are not available.

In addition to the identified shortcomings in maintenance and servicing, the question arises as to whether a different choice of components with more readily available spare parts and maintenance support could have improved the effectiveness of use.

¹³ It remains to be seen to what extent the reorganisation of the rescue station under the hospital will be beneficial for the emergency medical services themselves. According to local reports, for example, the financial situation of the emergency medical services in Bishkek was better under the city administration before the reorganisation to the MoH.

9. Quality of implementation

The MoH was the key agency responsible for planning and implementing the measures down to the last detail. Frequent changes within the ministry made implementation considerably more challenging, compounded by changes in the hospital management.

The construction work was carried out by a national construction company and was assessed as being of average quality with above-average repair requirements during the final inspection. During the evaluation, the building was found to be functional. There was a need for repairs to the water supply, heating, sewerage and roof, but these were resolved by the hospital.

The sometimes considerable delays during implementation had a negative impact on the effectiveness of the project, as can be seen from the example of the timing of the training component. The coronavirus pandemic also had a negative impact on the timely implementation of individual measures.

10. Unintended effects (positive or negative)

No unintended effects were identified during the evaluation. However, it was reported that, with its opening in 2020, the INA was able to make an unforeseen positive contribution with its capacity to care for COVID-19 patients, particularly during the COVID-19 pandemic.

Rating summary

Emergency care at the regional hospital in Jalal Abad has been largely centralised and the structures created are being used to provide patient care. However, the initially solid structural quality is not accompanied by corresponding process quality, which limits effectiveness. The medical equipment supplied by the project was not fully utilised and staff did not appear to be sufficiently familiar with how to use it. The use of the newly created operating theatre and intensive care capacities did not fully correspond to the plans. A lack of management of the quality of care, high staff turnover and a lack of maintenance and repair further limit effectiveness, which can therefore only be rated as limited.

Effectiveness: 3

Efficiency

11. Production efficiency

Efficiency in implementation was already criticised in the final review, partly due to lengthy coordination processes. Implementation was significantly delayed compared to the plan in the 2011 audit, the consulting services were not contracted until 2014, and the final deliveries and acceptance did not take place until the second quarter of 2020 – the planned implementation period was 48 months after the start of the consulting services.¹⁴ The delays in completing the INA in particular significantly limited the efficiency of the training measures for INA staff due to high staff turnover.

The investments in both construction and equipment are considered cost-effective, even though the costs have risen significantly compared to the original plan and the medical equipment was financed through the health SWAp. At EUR 1.17 million, consulting services were around 23% above the planned costs of EUR 0.95 million (EUR 0.25 million for investment support and EUR 0.7 million for accompanying measures). while construction costs of EUR 1.69 million were around 54% above the planned costs of EUR 1.10 million – the medical equipment was ultimately financed through the SWAp and amounted to around EUR 0.8 million compared to the planned EUR 0.9 million.

¹⁴ Overall, implementation has been significantly delayed by lengthy coordination processes for the contract and the awarding of contracts. The main contract with the consultant was signed in July 2014, the contract for accompanying measures (training and concepts) was not signed until March 2016, and the construction contract was signed in May 2017. Construction work was not completed until September 2019, the equipment was delivered in October 2020, and acceptance was not completed until September 2020 due to the COVID-19 pandemic.

12. Allocation efficiency

The allocation of funds to emergency medical care and structures can generally be considered efficient, as there were and still are considerable shortcomings in this area. The focus on the Jalal Abad region and the regional hospital is understandable; however, given the lower capacities, it was to be expected that the impact would not be equivalent to corresponding investments in Bishkek and Osh. With the expansion of the project approach to include an interdisciplinary emergency room with attached operating theatres and intensive care capacities, the FC rightly called for rationalisation at hospital level and developed a corresponding concept. However, the lack of implementation of this concept is currently contributing to underutilisation of capacity. As a result, despite the need for buffers to be provided for emergency care in the event of special incidents with high demand, capacity remains greater than demand and utilisation is lower than expected. The medical equipment is considered adequate in principle, although the lack of know-how for maintenance and repair is detrimental. In terms of non-medical equipment, there was a clear case of over-equipment with cupboards and chests of drawers, as a large proportion of these were not being used.

With the reorganisation of the emergency medical services and their affiliation with the hospital, the INA now has the opportunity to better manage patient flow in line with the needs of the referral system, so that (in the long term) fewer people who can also be treated at lower levels will be admitted to the INA. However, it should be noted that the majority of emergencies are brought in by relatives (70–90%). In addition, the centralisation of emergency care has made it possible for the hospital to bill the MHIF for outpatient services. This is advantageous from an allocation perspective.

However, obvious shortcomings in maintenance and repair limit allocation efficiency. Despite clear requirements in audits and in the contracts for the provision of relevant resources and capacities, no efficient structures or responsibilities were identified.

Allocation efficiency could have been increased if the training measures had been more clearly coordinated with the investment measures, including in terms of timing, and if longer-term on-the-job training had accompanied the first years of operation in order to anchor structures and processes more firmly. The consultant's final report on the accompanying measure already recommended that training be provided for the staff working there during the first three years of operation.

Rating summary

Overall, production efficiency is below expectations due to delays and cost increases but can still be assessed as positive. The same applies to allocation efficiency, which is generally positive in view of the considerable need to increase the effectiveness and efficiency of emergency care. However, it is limited by the lack of impact of maintenance and repair measures, the limited impact of training measures due to high staff turnover, and underutilisation due to the lack of implementation of the rationalisation concept. Overall, taking into account the challenging conditions, efficiency is still considered to be limited, also due to the COVID-19 pandemic.

Efficiency: 3

Overarching development policy impacts

13. Overarching (intended) developmental changes

The objective adjusted as part of the EPE was to reduce the health consequences of accidents through improved emergency care in Jalal Abad. Valid data and indicators for measuring reduced health consequences could not be collected, which is why the indicators planned for the EPE on survival rates for multiple trauma cases, mortality rates for observed cardiac arrest outside the hospital, and mortality rates/disability due to stroke or heart attack in the hospital's catchment area cannot be applied.

It is reasonable to assume that centralising the treatment of emergency patients in the hospital has reduced the time it takes to provide care. In addition, it can be assumed that interdisciplinary care leads to more targeted diagnostics and adequate treatment. This is a decisive factor in life-threatening injuries and illnesses, which is why it can be assumed that some of the health consequences have been reduced. Nevertheless, the shortcomings mentioned under effectiveness in relation to processes, structures and, consequently, the quality of care provided

by the INA also limit the impact at the impact level. The continuing limited coverage and quality of care in the pre-hospital sector is also a challenge and leads to low public confidence in the emergency services.

14. Contribution to overarching (intended) developmental changes

As part of the review, the project also aimed to improve the care situation in rural areas. The effects in rural areas were not measurable in the evaluation, but in view of the findings from the interviews, they are likely to be extremely low – even the MoH pointed out that implementation is still lacking across the board and that staff turnover is even higher there. According to the evaluation findings, the planned links with a central emergency control centre (at least at the oblast level) do not appear to exist, and transfers from remote locations to the INA are the exception – not least due to the high costs and time involved.

However, the concepts developed as part of the project served as the basis for the new health strategy and the master plan for emergency care – the involvement of the same consultant was beneficial in this regard. The 2020 master plan also included a recommendation for the establishment of a quality management system with performance indicators for structural and process quality and the impact on patient care. Monitoring, analysis and evaluation can be used to continuously improve the quality of medical and emergency services, but this has not yet been implemented. According to the MoH, the emergency department at the national hospital in Bishkek is also based on the experience gained in Jalal Abad, and the master plan provides for the establishment of central emergency departments in all national, regional and territorial hospitals in the republic. Cooperation with the training institutes in Bishkek and Osh also appears to be having a long-term impact, as the curricula developed continue to be used, as do the training materials, and staff turnover among trainers appears to be somewhat lower.

15. Contribution to overarching (unintended) developmental changes

No contribution to unintended changes was identified during the evaluation.

Rating summary

The overall development policy impacts are not measurable, but can be plausibly inferred in part, particularly through faster and more interdisciplinary care in one location. However, the impacts are primarily limited to the direct catchment area of the INA, and large parts of the rural areas of the Jalal Abad region are still not covered. Overall, the impact is limited, and the shortcomings in the concrete implementation of improved emergency care and corresponding coverage in the Jalal Abad region are offset by the fact that the concepts and experience gained in the project can also have a structural impact through the current health master plan.

Overarching development policy impacts: 3

Sustainability

16. Capacities of the beneficiaries and stakeholders

The capacities at hospital level for sustainable operation are very limited from a personnel, financial and structural perspective. There is a lack of maintenance and repair personnel, no clear budget could be identified, and no processes or structures for maintenance and repair could be found. Nevertheless, the staff and management are doing their best to ensure the sustainable operation of the new emergency room within the limits of their capabilities. Repairs to the infrastructure appear to be possible, but the maintenance and repair of medical equipment remains extremely challenging due to a lack of technical understanding and access to spare parts and services. Dependence on decisions and resources from the MoH is potentially just as much of an obstacle here as the high staff turnover, which makes it difficult to establish new structures.

17. Contribution to supporting sustainable capacities

The project measures to strengthen hospital-level capacities for maintenance and repair, including the development of a corresponding concept, the establishment of monitoring software, the training of maintenance personnel and the provision of basic workshop equipment, were not even found to have been started during the evaluation. The proposal made during the final review for monthly inspections by technical personnel, the development of a maintenance plan and the provision of an appropriate budget was also not implemented. The

recommendation to secure the long-term operation of the CT scanner through a *public-private partnership* was not taken up and, as feared during the final review, the device is already out of service.

18. Durability of impacts over time

The lack of maintenance and repair structures significantly impairs the sustainable impact of the investment measures, especially in the area of medical equipment. The building was in good condition at the time of the evaluation. Staff turnover and migration, combined with low salaries in the public health sector, remain a high risk for sustainable operation. According to its own statements, the MoH is trying to counteract this with higher salaries and additional payments in rural areas, as well as a commitment to work in rural areas for two years. Whether these incentives, if implemented, will be sufficient to ensure long-term sustainability remains highly questionable. In some cases, reference was also made to a lack of funds and difficulties in procuring and obtaining medicines and consumables.

The extent to which the sustainability initiative financed by FC funds ⁽¹⁵⁾ with the establishment of a nationwide inventory and maintenance system for medical equipment (see coherence) will actually remedy the shortcomings in maintenance and repair remains to be seen. The findings of this support to date reflect the observations made in the evaluation – there is no planning for the maintenance of medical equipment in the public health sector, and repairs are only attempted when the equipment is already defective. Furthermore, none of the databases available to date contain maintenance information. The *samedis* software, which was also tested in the project, is now to be introduced at national level as part of this sustainability initiative. Staff in health facilities and the MoH are to be trained in order to raise overall awareness of preventive maintenance and enable targeted budget planning. In view of the experience gained with the introduction of maintenance and repair capacities based solely on the hospital in Jalal Abad, the actual contribution of the sustainability initiative to the project measures is questionable from an evaluation perspective. There is a significant shortage of skilled medical technicians, which will remain a major problem in the medium term.

The adoption of the concepts developed for the master plan for emergency medicine at the national level is expected to have a lasting impact. The experience gained with the centralised interdisciplinary emergency department is highly valued nationally, and the hospital in Jalal Abad is seen as a reference point.

Rating summary

Overall, the INA has been in operation for about five years and most of the equipment is still operational. Due to the direct involvement of the MoH in the management of the hospital, it can be assumed that essential replacement investments will also be made. Sustainability is below expectations due to deficiencies in maintenance and repair and high staff turnover. However, taking into account the ongoing operation and the structural effects of the model's character at the national level, the positive results outweigh the negative ones.

Sustainability: 3

Overall rating 3

Overall, the project is considered relevant due to the currently very rudimentary and limited emergency medical care available in the area. Coherence could have been strengthened through clearer coordination between donors in the field of emergency medicine but is good given the coordinating role played by the MoH. Effectiveness is limited because, despite the use of the emergency room, the desired standards of care are not being achieved. This is due to staff turnover, migration and a lack of coordination in the training measures, which means that the processes and structures for adequate care in the emergency room are not being implemented as intended. Production efficiency has been hampered by delays and cost increases. The efficiency of hospital operations is limited by the lack of implementation of the rationalisation concept, and allocation efficiency is also limited by the associated underutilisation. The overarching development policy effects of improved emergency care on reducing consequential damage cannot be measured but can be plausibly inferred in part for the population in the hospital's immediate catchment area. Due to the model character of the centralised and interdisciplinary emergency department, some of the concepts developed have also been incorporated into the national master plan for emergency care. Sustainability is limited by a lack of capacity for maintenance and repair and high staff turnover.

¹⁵ Funds from the Study and Skilled Workers Fund

Overall, the project was only able to achieve its target level of effective and efficient emergency care to a limited extent, but it has nevertheless developed a model character and the infrastructure created is being used.

Contributions to the 2030 Agenda

The project contributes to SDG 3. Emergency medical services help reduce mortality and health consequences of accidents and acute illnesses, including those caused by cardiovascular diseases (3.4) and road traffic accidents (3.6). Access to healthcare is generally open to all sections of the population but is limited for rural populations in remote areas.

Project-specific strengths/ weaknesses and general conclusions/ lessons learned

The strengths and weaknesses of the project include in particular:

- The introduction of the first centralised and interdisciplinary emergency department in a regional hospital has provided impetus for implementation in other regions.
- Due to significant gaps in coverage, availability and fluctuation of personnel, as well as in equipment, no general improvement in pre-hospital care could be achieved with one-off training measures and a conceptual reorganisation of the emergency services.
- Due to the relaxation of requirements regarding the own contribution to maintenance and repair capacities and the lack of follow-up, the measures for developing concepts, training technicians and the specific and necessary budget for maintenance and repair in the INA could not be achieved.

Conclusions and lessons learned:

- Due to delays in the investment measures, the training content and new processes could not be directly put into practice. Training measures should be coordinated with the investment measures in such a way that the content can be translated into practice immediately.
- In the event of unavoidable high staff turnover, it seems important that new processes and structures are not introduced through one-off training measures but are anchored over a longer period of time through personnel support measures during ongoing operations.
- If there are no preventive maintenance and servicing structures at institutional level, individual measures such as the development of concepts and the training of individual technicians are not sufficient to ensure the long-term operation of medical equipment in particular. Equipment for which there is no technical support or access to spare parts in the target country should therefore be avoided.
- Carefully selected indicators and monitoring of supply established at the start of the project would make a valuable contribution to the management of the ongoing project and facilitate an objective and comprehensible evaluation of the effects achieved.

Evaluation approach and methods

Methodology of the ex-post evaluation

The ex-post evaluation follows the methodology of a rapid appraisal, i.e. a data-based, qualitative contribution analysis, and represents an expert judgement. This involves attributing impacts to the project through plausibility considerations based on the careful analysis of documents, data, facts and impressions. Where possible, this also includes the use of digital data sources and modern techniques (e.g. satellite data, online surveys, geocoding). Causes of any contradictory information are investigated, attempts are made to eliminate them and the assessment is based on statements that are confirmed by several sources of information (triangulation) where possible.

Documents:

Internal project documents, health strategies of the Kyrgyz government, master plan for emergency medical services.

Data sources and analysis tools:

Data collection on site

Interview partners:

Ministry of Health, hospital in Jalal Abad (management, emergency department, technical staff), emergency services control centre in Jalal Abad and Bishkek, Kyrgyz training institute for continuing medical education in Osh and Bishkek, regional hospital in Osh, WHO – a meeting with the World Bank could not be arranged during the evaluation.

The analysis of impacts is based on assumed cause-and-effect relationships documented in the impact matrix developed during the project appraisal and updated during the ex-post evaluation, where necessary. The evaluation report presents arguments as to why which influencing factors were identified for the identified results and why the analysed project presumably made which contribution (contribution analysis). The context of the development project is taken into account with regard to its influence on the results. The conclusions are set into relation to the availability and quality of the data basis. An evaluation design is the reference framework for the evaluation.

For project evaluations, the method offers a - on average - balanced cost-benefit ratio, in which the knowledge gained and the evaluation effort are in equilibrium, and allows for a systematic assessment of the effectiveness of FZ projects across all project evaluations. The individual ex-post evaluations can therefore not fulfil the requirements of a scientific assessment in the sense of a clear causal analysis.

The following aspects limited the evaluation:

No valid data on the quality of emergency medical care could be found, as no monitoring is carried out. The same applies to maintenance and servicing. Even data on the utilisation of the various units could only be roughly estimated by counting individual months. Due to the reorganisation of emergency medical services from outpatient to inpatient care in 2021, no supporting data was available for the e-health centre either.

Due to the language barrier, despite support for translation, the depth and scope of interviews were significantly limited, particularly during project visits in the field.

Methodology for evaluating success

A six-point scale is used to assess the programme according to OECD DAC criteria. The scale values are assigned as follows:

- Level 1** Very successful: results significantly above expectations
- Level 2** Successful: results fully in line with expectations, without significant deficiencies
- Level 3** Moderately successful: below expectations, but positive results dominate
- Level 4** Moderately unsuccessful: is significantly below expectations and negative results dominate despite recognisable positive results
- Level 5** Predominantly unsuccessful: despite some positive partial results, the negative results clearly dominate.
- Level 6** Completely unsuccessful: the project is useless or the situation has deteriorated

The overall rating on the six-point scale is based on a project-specific weighting of the six individual criteria. Levels 1–3 of the overall rating indicate a 'successful' project, while levels 4–6 indicate an 'unsuccessful' project. It should be noted that a project can generally only be classified as "successful" in terms of development policy if the achievement of the project objectives ("effectiveness") and the impacts at the overall objective level ("over-arching development policy impacts") as well as the sustainability are rated at least as "moderately successful" (level 3).

The annex to this report is available upon request (german only).

Imprint

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