



IMPROVING EMERGENCY CARE IN TANZANIA (IMECT): EVALUATING RELEVANCE, IMPACT AND SUSTAINABILITY OF THE PROJECT

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EXECUTIVE SUMMARY

The report summarizes 2.5 years of monitoring and evaluation activities conducted as part of the project “Improving Emergency Care in Tanzania (IMECT)” implemented by the Polish Center for International Aid, in partnership with Aga Khan Health Service Tanzania and financed by the Polish Aid Fund in the years 2022-2024. The project aimed to strengthen the capacities of the Tanzanian medical services and first responders related to emergency medical care. The project activities included: specialized medical and first aid training, supervisory support for the trained medical personnel at emergency departments in the new skills application as well as in-kind assistance.

The research report focuses on questions of relevance, impact and sustainability of the support provided as part of the project and relies on monitoring and evaluation data gathered throughout the preparatory phase and the implementation period. The main findings indicate that the aid was characterized by high relevance to the needs of the beneficiary hospitals. Moreover, project participants were highly satisfied with the support they received and with the modalities of project implementation. For instance, the overall assessment of the training courses by their participants was high or very high, with the highest and mid-positive assessments accounting for 94-100%.

Most importantly, the monitoring data evidence showed positive impact of the

project on medical practice of the beneficiary emergency departments, it especially improved the quality of medical care over a longer period of time (indicators such as correct application of medical protocols, number of patients receiving quality care as well as hospital statistics related to referrals and deaths were monitored for 12 months).

The report identifies the main strengths of the project as:

- its localized approach: close cooperation with institutional partners relevant to the intervention and efforts at strengthening their potential.
- efforts by the project team to ensure that the aid is indeed integrated into the daily practice of the beneficiary institutions through activities such as supervision by local and international specialists offered after specialized training and medical equipment’s handover.

Both modalities of operation contributed to high relevance and sustainability of the project.

At the same time, the monitoring and evaluation data suggest that the project could have had a stronger positive impact if the duration of some of the activities (especially training and supervision) had been extended and if the scope of the initial needs assessment had been broader. Refresher training sessions and additional support from supervisors can still support sustainability of the project’s results where the monitoring results were less positive.



ACRONYMS

We use numerous acronyms in this report. For the convenience of the Reader, we have ordered them thematically in the below list.

Names of partner and beneficiary institutions

AHKST – Aga Khan Health Service Tanzania

CHA – Chanika Health Center

EMAT-MUHAS – Emergency Medicine Association of Tanzania - Muhimbili University of Health and Allied Sciences

IM – medical personnel of clinics working by Immigration Offices

MRRH – Mwananyamala Regional Referral Hospital

NYA – Nyamagana District Hospital

TRRH – Temeke Regional Referral Hospital

Types of training courses

FR – training courses for first responders

PT – Provider Training

TOT – Training of Trainers

Topics of training courses

A&B – Airway and Breathing

ACLS – Advanced Cardiovascular Life Support

BLS – Basic Life Support

HFA – Heartsaver First Aid

NRP – Neonatal Resuscitation Program

OBS – Obstetrics emergency

PALS – Pediatric Advanced Life Support

PCC – Patient-Centered Care

PEARS – Pediatric Emergency Assessment, Recognition and Stabilization

POCUS – Point-of-Care Ultrasound

PTC – Primary Trauma Care

TM – Teaching Methodology

Other

PCPM – Polish Center for International Aid Foundation (Pol. Fundacja Polskie Centrum Pomocy Międzynarodowej)



1. INTRODUCTION

This report was prepared as part of the project “Improving Emergency Care in Tanzania (IMECT)”. It summarizes 2.5 years of monitoring and evaluation activities and aims at answering questions related to the relevance, impact and sustainability of the project. Below, we describe the project in more detail and explain the aims and scope of this analysis.

1.1. ABOUT THE PROJECT

The IMECT project was implemented by the Polish Center for International Aid and financed by the Polish Aid Fund in the years 2022-2024. It aimed to strengthen capacities of the Tanzanian emergency medical services through training and provision of medical equipment.

The project was carried out in partnership with the Ministry of Health of Tanzania and in collaboration with Aga Khan Health Service Tanzania (AKHST), the longest-serving, not-for-profit private health care organization in the country. Based on a needs assessment conducted by the Ministry of Health of Tanzania, two regions were selected as priority targets for the project: Dar es Salaam and Mwanza. The Ministry in cooperation with the relevant local authorities also identified the hospitals in need of assistance.

The Ministry’s needs assessment indicated that medical institutions would benefit from development of activities focused on the emergency context and prehospital care. Since pre-hospital care in practice often includes actors outside the medical sector, PCPM decided to include other first responders in the project as a pilot activity. Traffic police, auxiliary police, airport police, fire service members, public transportation workers, ferry port workers and scouts in the same regions were trained in first aid and received basic first aid equipment.

In-kind assistance

The scope of in-kind assistance provided as part of IMECT was delineated in cooperation with the hospitals. Individual needs analysis conducted by PCPM and AKHST, supplementing the Ministry’s needs assessment, showed that the hospitals needed not only medical equipment, but also consumables. Their emergency units were not separate departments with their own budgets and facilities, but parts of larger organizational structures. The hospitals participating in the project decided to launch separate emergency departments, give them more autonomy and ensure they have resources of their own. Providing basic equipment and consumables dedicated to the departments was an important part of this process.

As part of the project, four types of in-kind assistance were provided to hospitals, a medical training center and first responders:

- Hospital emergency care equipment, which included smaller and larger equipment related to hospital diagnostics and medical rescue, such as, patient monitors and ultrasound machines.
- Emergency consumables such as: oxygen masks, tubes and filters for the emergency equipment, cervical collars, needles and syringes, etc.
- Emergency equipment for first responders including basic first aid kits and CPR pocket masks.
- Training equipment for a medical training center, such as: hemorrhage control, AED and intubation trainer, mannikins, imitation wounds and fractures training kits, rescue choking vests, needles, tubes and birthing simulators, etc.

At the moment of this evaluation, equipment worth PLN 1 276 505 had already been distributed, and further equipment was still to be delivered to the beneficiary institutions. Eventually, the value was expected to reach PLN 1 346 000. The detailed list of the equipment is annexed to the report.



Medical training and supervisory support

Over the course of the project, medical training for medical personnel and first responders were organized for 2626 non-unique participants. 18 types of training courses were offered to the project participants, including training for service providers and training of trainers.

The training courses aimed to address capacity development needs in the emergency context identified through the Ministry of Health assessment as well as

consultations with the beneficiary institution's management and the project implementation partner AKHST. First responders (including firefighters, traffic police and other rescue services) were provided with general first aid training, and medical personnel working at emergency hospital departments were offered a number of specialized training courses. PCPM also organized training of trainers aiming to increase the capacity of the Tanzanian medical training system.

Table 1. Non-unique training participants by type of partner/beneficiary institution

	Hospitals							First responders		
	MRRH	TRRH	AHKST	CHA	NYA	EMAT-MUHAS	IM	FIRE SERVICES	TRAFFIC POLICE	OTHER
2022	5	4	15	0	0	6	0	20	20	20
2023	161	165	541	81	50	16	0	20	20	22
2024	230	215	732	104	78	25	31	15	15	15
Total	396	384	1288	185	128	47	31	55	55	57

Complementarity and sustainability

Training and in-kind assistance were intended as mutually complementary components. At the same time, the project was meant to deliver sustainable results. These guiding principles were followed through the following elements of project design:

- PCPM relied on the local partners for or co-implemented with them those activities that required local expertise and in-depth knowledge of the Tanzanian medical sector, which included needs assessment, project design as well as some of the monitoring and evaluation activities.
- The project consistently focused on the emergency hospital care.
- Training and in-kind aid assistance were delivered to the same institutions to reinforce the positive impact of the project on the selected beneficiary institutions.
- The training courses for medical personnel were complemented with follow-up supervision of the trainees at the emergency hospital departments where they worked to support them in proper application of the new skills.
- The necessary requirement of the beneficiary institutions included in the in-kind component was that they be able to operate and maintain the equipment. The project team monitored whether this requirement was fulfilled, among others through monitoring visits whose results are discussed in this report.



Table 2. Non-unique training participants by training topic

	2022	2023	2024	% of participants 2022-2024
FR: First Aid	60	62	45	6%
PT: Pediatric Advanced Emergency Assessment, Recognition and Stabilization Training (PEARS)	0	50	0	2%
PT: Advanced Cardiovascular Life Support (ACLS)	0	102	128	9%
PT: Heartsaver First Aid Training	0	0	56	2%
PT: Obstetrics Emergency (OBS)	0	0	113	4%
PT: Patient-Centered Care (PCC)	0	0	180	7%
PT Point-of-Care Ultrasound (POCUS)	0	0	50	2%
PT: Airway and Breathing (A&B)	0	0	70	3%
PT: Basic Life Support (BLS)	0	411	403	31%
PT: Neonatal Resuscitation Program (NRP)	0	0	104	4%
PT: Pediatric Advanced Life Support (PALS)	0	47	115	6%
PT: Primary Trauma Care (PTC)	0	321	162	18%
TOT Advanced Cardiovascular Life Support (ACLS)	0	15	0	1%
TOT Basic Life Support (BLS)	10	13	0	1%
TOT Pediatric Advanced Life Support (PALS)	0	10	0	0%
TOT Primary Trauma Care (PTC)	20	23	0	2%
TOT: Neonatal Resuscitation Program (NRP)	0	0	20	1%
TOT: Teaching Methodology	0	22	0	1%
TOT: Point-of-Care Ultrasound (POCUS)	0	0	14	1%
	90	1076	1460	2626/100%

1.2. AIMS AND SCOPE OF THIS RESEARCH

The scope of this report is limited to the assessment of relevance, sustainability and impact of the aid provided based on the monitoring and evaluation data gathered throughout the implementation period. The research was conducted for internal insight and analysis.

Some topics, typically included in evaluation reports, have not been covered in this one. Most importantly, questions pertaining to inclusion are not a part of this study as the selection of beneficiary institutions and identification of their needs was a task of our

partner, the Ministry of Health. Later, these were the selected hospitals and first responders who decided on which of their employees to delegate to the capacity development activities. PCPM offered guidance on inclusion and monitored basic inclusion indicators, but granted full autonomy to these institutions in the process. Initially, it was agreed that half of the training participants will be delegated by the public hospitals and half by the AKHST. Finally, this ratio was hard to maintain (resulting in 67 more trained staff from the private sector versus the Government sector) due to a few factors listed below. Firstly, the complex nature of some of the courses which required staff working at tertiary or national



level facilities which included Aga Khan Hospital as the Government facilities enrolled in the project were from Regional and District levels. Secondly, due to certification requirements in the framework of accountability in the private sector versus the public sector; the coverage of AKH staff was slightly more. Lastly, there were special tailored courses related to developed departments and available resources where trauma related courses like PTC, basics like Airway and Breathing and trainings related to maternal and child health (ObsEM) were more public sector focused with more participants from Government while advanced trainings like ACLS, PALS and socio-medical trainings like PCC were more suited for private sectors hence more participants from AKH.

As hospitals and first responders in Tanzania often face challenges related to underfinancing and understaffing, developing and implementing clear inclusion policies does not belong to their immediate priorities. Nonetheless, all stakeholders agreed the

project should focus on hospitals that have the least access to resources and financing. Moreover, PCPM stressed the importance of gender mainstreaming in the project, which turned out to resonate well with the partners. In this report, we analyze basic monitoring data on women's and men's participation in the project, including in their roles as trainers and teachers.

1.3. METHODS

The study relies on mixed methods; it uses data from regular monitoring as well as partner's and consultant's observations on the project. The table below briefly presents the research methods and the objectives they served to achieve.

In chapter 3, we also summarize the results of an evaluation conducted by AKHST to estimate the outcomes and the impact of the project on the healthcare institutions which took part in it. Each method is explained in more detail at the beginning of a section in which the corresponding data is analyzed.

Table 3. Research methods and techniques

Method	Type of data collected	Sample	Objective
Auditorium surveys	Predominantly quantitative (some open-ended questions included in the survey)	2360	<ul style="list-style-type: none">Gathering feedback of training course participants directly after the service was provided.Evaluating the service's quality and monitoring of project staff members work.Predicting the service's impact.
Online surveys	Predominantly quantitative (some open-ended questions included in the survey)	87	<ul style="list-style-type: none">Gathering feedback from the training course participants at least 6 weeks after the service was provided.Evaluating the service's quality and monitoring of project staff members work.Evaluating the service's impact.
Reports by the trainees supervisors	Qualitative	3	<ul style="list-style-type: none">Gathering information about the supervisor perception of the activities' relevance and sustainability.Gathering supervisor's recommendations as to the future activities.
Monitoring visits	Qualitative	4	<ul style="list-style-type: none">Gathering feedback from the institutions which received the in-kind assistance.Evaluating quality, relevance and sustainability of the aid provided.



2. BENEFICIARIES ASSESSMENT OF THE QUALITY OF THE TRAINING COURSES

Two methods were used to monitor the training courses' quality. Both were quantitative surveys distributed after the training with a large share of similar or identical questions. However, while the first survey was distributed in paper form directly after the training, the second one was sent out several weeks (no less than 8) after its conclusion and was conducted online. The second survey aimed at gathering information about whether the trainees managed to apply their learnings in their daily work. Hence, it could not be carried out immediately after the training.

Auditorium questionnaires

Over 2360 paper questionnaires were distributed to the participants of the training courses to assess the groups satisfaction level. The questionnaires were translated into Swahili (to ensure that the participants can adequately comprehend the questions in their first language to remove any language barriers and bias) and distributed at the end of the last session. The survey was anonymous and filled out in the absence of the courses organizers or trainers. All trainees present at the last session filled out the questionnaire.

The data were analyzed within a week after each round of the assessment so that the project team could address any emerging challenges. This subchapter aggregates the results and presents their breakdown by training type and topic. It focuses on the project participants satisfaction with the courses as well as the utility of the skills they acquired.

Online satisfaction survey

The online satisfaction survey was introduced in the last year of the project and was meant to complement the auditorium questionnaires. It provided additional data on respondents' profile and practical

applications of their training takeaways. The survey was conducted in English, which was also the main language of instruction during the courses. However, language may have impacted the response rate negatively. While the number of respondents in the online survey is far smaller than in the auditorium one, it provides useful commentary to the results of the latter.

The online survey was distributed via Whatsapp between August and November 2024, and filled out by 87 training participants. 51% of them were women and 49% were men. 30% were between 18 and 29 years old and 48% were in their thirties. Participants in their fifties accounted for 7% of the sample. Most respondents had relatively little work experience (42% worked in their medical profession from 0 to 5 years), but nearly one third (31%) had 10 or more years of experience.

Asymmetrical scale

An asymmetrical scale used in the auditorium questionnaire should be discussed in more detail. One of our monitoring takeaways from various projects is that their participants tend to vary more with regard to the degree of satisfaction than the degree of dissatisfaction. In most projects, they receive free support based on an initial needs assessment. Even if the services do not fully meet their expectations, they tend to declare at least some degree of satisfaction. The scale employed in this research responded to this typical asymmetry in the respondents' declarations and was also asymmetrical: each respondent could assess various benefits of the project using a four degree scale, where three degrees (coded in the charts and tables as 3, 2 and 1) corresponded to higher or lower level of satisfaction and one degree (coded as 0) corresponded to dissatisfaction. We assumed that training matching our standard should not be assessed at low satisfaction or dissatisfaction levels.



In the online survey, a more intuitive symmetrical scale was used to control the accuracy of the earlier methodological decision. It confirmed that positive answers

tended to dominate over negative ones. Based on these results, we treat the asymmetrical scale applied in the auditorium questionnaires as reliable.

2.1. KEY INDICATORS: SATISFACTION LEVEL AND UTILITY OF THE NEW SKILLS AND KNOWLEDGE

Auditorium surveys

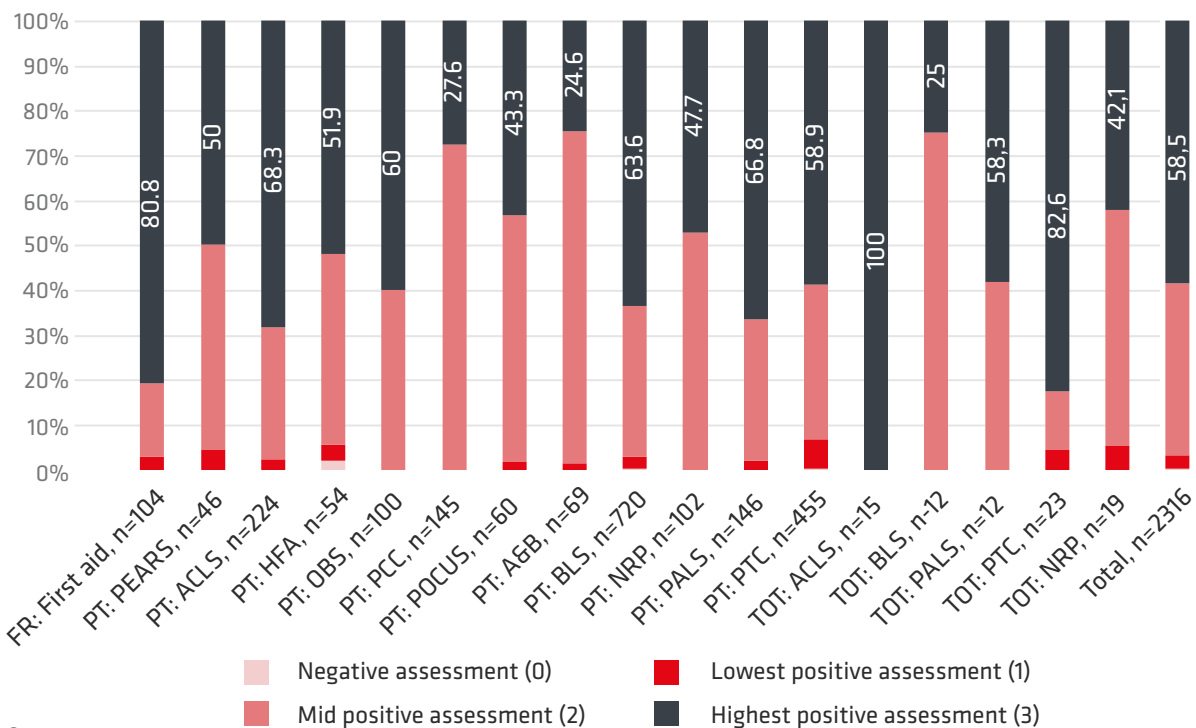
The project participants were asked whether their training course had met their expectations, whether they believed the training was worth recommending and whether they found what they had learnt useful considering their daily tasks at work. We assumed the respondents' answers indicated their level of satisfaction as well as utility of the skills and knowledge developed as part of the training. While the indicators are a rough measurement tool, they allow us to compare various training courses and decide which ones suited the needs of the participants better or worse.

The overall assessment of the training was high or very high, with the highest and mid-positive assessments accounting for 94-100%. This shows that the training courses corresponded to the needs and

expectations of the vast majority of training participants. At the same time, the declarations of highest degree of satisfaction varied. They were higher than average for PALS (both provider training and training of trainers), ACLS (both provider training and training of trainers), BLS (provider training), FR and PTC. They were significantly lower for the provider training courses in A&B, PCC, POCUS and NRP as well as the training of trainers in BLS.

Negative assessments of the training were rare: in no case did they exceed 2%. The lowest level of satisfaction was declared more often reaching 6.4% in the case of the PTC (primary trauma care) provider training. On average, the satisfaction level was lower for provider training courses.

Figure 1. General level of satisfaction by training topic





Out of the questions included in this survey, most can serve as predictors of the general satisfaction level: all answers correlate positively with this main indicator, which means that the more a respondent was satisfied with a single aspect of the training, the higher level of satisfaction they eventually declared. The highest correlations were recorded for the questions: “To what extent did the learning outcomes meet your initial assumptions?” (which we interpret as an indicator of proper communication of the course’s program) and “How do you rate the cooperation between the instructors?”

(which is one of the measures the respondents assessment of the instructors’ work) . A decision tree analysis (conducted to control the intercorrelations between the variables used as predictors), points also to the same variables as the key factors influencing the final score. The results show that clear communication about the curriculum and trainers’ coherent and cooperative performance was more important to the participants than other factors (listed in point 2.2.).

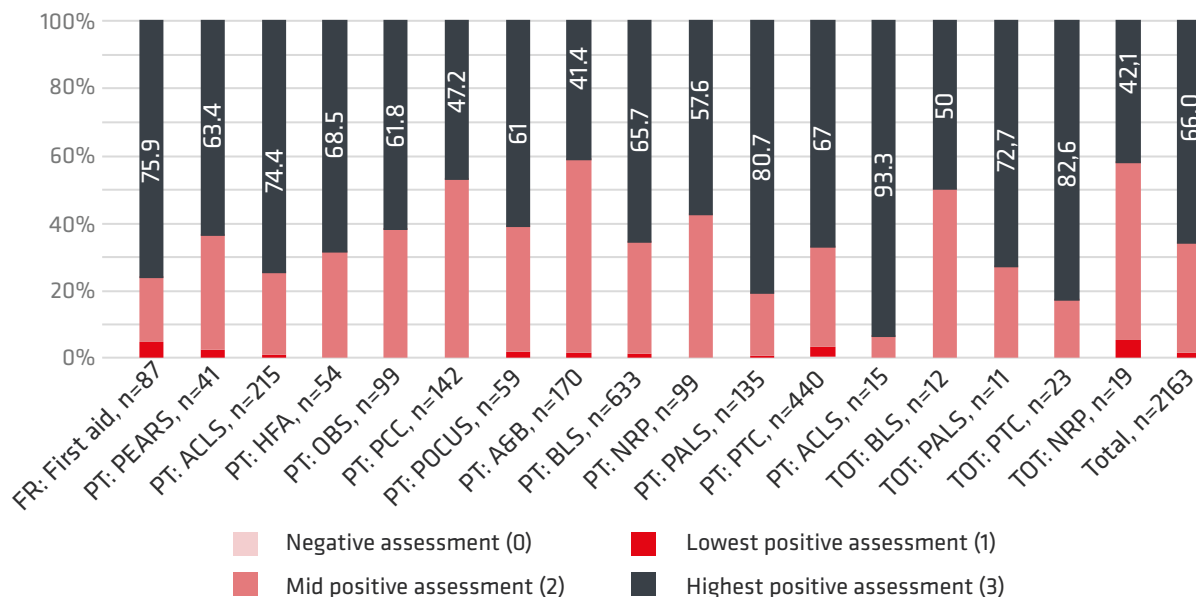
Table 4. General level of satisfaction: average and median assessments by type of training course (0-3 scale, auditorium questionnaires)

	Median	Mean
FR (n=104)	3	2.78
PT (n=121)	3	2.53
TOT (n=121)	3	2.72
Total (N=2318)	3	2.55

The respondents assessed the utility of the skills and knowledge acquired through training higher than their overall level of satisfaction. None gave a negative answer to the question (including in the open-ended questions and comments) and the total share of lowest positive assessments reached only

1.4%. Utility of the learnings was assessed at the highest level for the training of trainers in NRP (4.4%) and the first aid training for first responders (4.6%). On average, over 98% of the respondents said their course was useful or highly useful.

Figure 2. Assessment of utility of skills and knowledge gained through training, data broken down by training topic



1 In both cases the Pearson’s R exceeded 0.5 at p<0.000.



Table 5. Utility of skills and knowledge acquired during the course: average and median assessments by type of training course (0-3 scale)

		Median	Mean
Utility of acquired skills and knowledge	FR (n=87)	3	2.71
	PT (n=1960)	3	2.63
	TOT (n=118)	3	2.78
	Total (N=2165)	3	2.64

The respondents generally agreed that their training courses were worth recommending: 68% gave their training the highest positive grade and 30% the mid-positive grade. Unsurprisingly, their answers to this question were very similar to the answers to the question about their general level of satisfaction, although they tended to be more

positive. This is likely to stem from the fact that the question was one of the last in the survey: it was asked after they had already considered the various aspects of their course's quality, which they tended to assess positively (see point 2.2.). The question related to the general level of satisfaction was one of the first they were asked.

Figure 3 Assessment of whether the course is worth recommending, data broken down by course topic

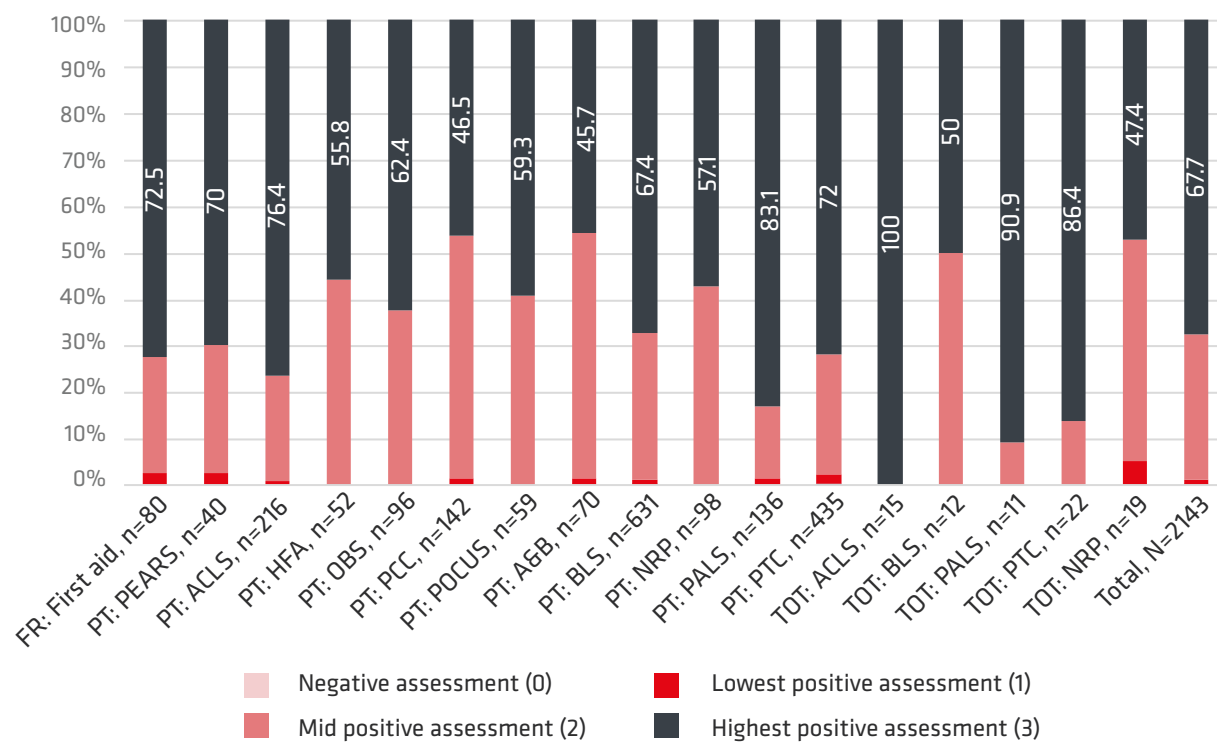


Table 6. Readiness to recommend the course: average and median assessments by type of training course (0-3 scale)

		Median	Mean
Readiness to recommend the course	FR (n=80)	3	2.70
	PT (n=1948)	3	2.65
	TOT (n=117)	3	2.80
	Total (N=2145)	3	2.66



Online surveys

The results of the online survey are consistent with those reported above, although a different scale was used in the survey (from 1 to 5, 5 being the highest score). 84% of the respondents said that their training course met their expectations with 55% declaring the highest level of satisfaction. 11% chose the middle of the scale and 5% (4 persons) said they were dissatisfied. Based on the respondents' answers to the open question, the main reason for dissatisfaction was the duration of the training, which was estimated as too short, which was also mentioned by some of the satisfied respondents. One respondent also said that too little equipment was available to students during the practical session.

The fact that most training courses were too short was confirmed by further results. According to only 65% of the respondents, the time allocated for theory was sufficient. The analogous percentage for practice is 62%. At the same time, the respondents positively rated the time management during their training (the share of positive answers reached 92% and the top positive accounted for 54%). Just as in the case of the auditorium surveys, the results point to the need of extending duration of training, without the need for major changes in time management.

2.2. DETAILED ASSESSMENT BY TRAINING TYPE

Auditorium surveys

The table below shows the median and average values of the respondents' assessments of their training courses on a 0-3 scale, where 1, 2 and 3 correspond to the lowest, mid, and highest positive grade respectively, and 0 is a negative grade. The results are color-coded: the darker shade of red the cell points to the lower result; the darker shade of blue it is, the better the grade.

We also split the results by training type: data for training for first responders (FR), provider training (PT) and training of trainers (TOT) are reported separately.

The results show that the respondents were most dissatisfied with the time allocated for both theory and practice. Here, the assessments are lowest, especially in the case of training courses for the first responders and the provider training. The open questions included in the survey show that the participants of this training perceived them as too intense: they wanted more time for theory and practice.

Provider training was also completed less often than other training types, which is, judging from the respondents' own declarations, likely to stem from the work-related obligations of the participants. If we jointly consider the respondents' earlier criticism of the trainings as being too short and the inability of many of them to complete the program, we can formulate a working recommendation for similar projects in the future: the training courses' length should be adapted to the employers' readiness to let their employees participate in all of the sessions. If a longer time cannot be allocated for the classes, the training program should be cut to allow all participants not only follow, but also master the skills taught with confidence.

The remaining results tend to be high with the median equaling the top positive assessment. This means no less than half of the respondents gave the highest grade to their training course with regard to the aspects we asked about. The grades tended to be slightly higher on average for the TOTs than for the two other types of training. This may be explained by the profile of training participants: according to project staff

² Due to the low response rate as well as the small size of the sample, detailed analyses do not provide statistically valid results, so we rely on the open questions in our explanation of the respondents' level of satisfaction.



members and the implementation partner, trainers were a more coherent group of specialists who chose to participate in the training. They had clear expectations of the training and ideas on how to apply their new

skills. Participants of the provider training were typically delegated to the training by their supervisors. Some feared that higher competencies, gained during the training, may translate into increased work duties.

Table 7. Detailed assessment of the training courses: median and mean values (0-3 scale)

		Median	Mean
Time allocated for theory	FR (n=101)	1	1.45
	PT (n=2081)	2	2.14
	TOT (n=119)	3	2.55
	Total (N=2301)	2	2.13
Time allocated for practice	FR (n=100)	2	1.63
	PT (n=2081)	2	2.20
	TOT (n=119)	3	2.53
	Total (N=2300)	2	2.20
Level of completion of the training program	FR (n=99)	3	2.38
	PT (n=2069)	2	2.42
	TOT (n=117)	3	2.65
	Total (N=2285)	2	2.43
Clear communication of the training program	FR (n=97)	3	2.56
	PT (n=2071)	3	2.50
	TOT (n=120)	3	2.71
	Total (N=2288)	3	2.51
Clear communication of organizational aspects of the training	FR (n=82)	3	2.35
	PT (n=1934)	3	2.44
	TOT (n=119)	3	2.67
	Total (N=2135)	3	2.45
Quality of the course materials	FR (n=101)	3	2.45
	PT (n=2078)	3	2.39
	TOT (n=119)	3	2.52
	Total (N=2298)	3	2.67
Time management during the training	FR (n=102)	3	2.47
	PT (n=2085)	3	2.52
	TOT (n=120)	3	2.68
	Total (N=2307)	3	2.52
Cooperation between instructors	FR (n=100)	3	2.67
	PT (n=2084)	3	2.60
	TOT (n=120)	3	2.79
	Total (N=2304)	3	2.61
Training facilities - general assessment	FR (n=101)	1	2.49
	PT (n=2087)	2	2.54
	TOT (n=121)	3	2.80
	Total (N=2309)	2	2.55
Number of skill rooms	FR (n=103)	2	2.40
	PT (n=2044)	2	2.49
	TOT (n=120)	3	2.76
	Total (N=2267)	2	2.50



		Median	Mean
Training equipment: availability for training purposes	FR (n=102)	3	2.56
	PT (n=2051)	2	2.56
	TOT (n=121)	3	2.72
	Total (N=2274)	2	2.57
Training equipment: application of the equipment during the training	FR (n=99)	3	2.56
	PT (n=1965)	3	2.51
	TOT (n=118)	3	2.66
	Total (N=2182)	3	2.52
Organizers' overall professionalism	FR (n=93)	3	2.75
	PT (n=1948)	3	2.66
	TOT (n=120)	3	2.77
	Total (2161)	3	2.67
Organizers' supportiveness	FR (n=91)	3	2.74
	PT (n=1958)	3	2.66
	TOT (n=120)	3	2.79
	Total (N=2169)	3	2.67
Organizers' availability	FR (n=89)	3	2.64
	PT (n=1944)	3	2.64
	TOT (n=120)	3	2.79
	Total (N=2153)	3	2.65

The respondents had also a possibility of leaving a comment to every question in the survey, in which we received 1329 brief comments. Over 60% of the comments included expressions of gratitude, praise of the trainers, or requests that similar training is offered to other employees of the beneficiary institutions. Additional 7% included positive assessments of the utility and applicability of the skills taught.

27% of the comments were requests that the training courses are longer. Some included a suggestion as to how long the training should take, e.g. respondents suggested that a 2-day course should be extended to 4, 5 or 7 days. In one case, the recommendation was that the course should last two weeks. In most cases a decidedly longer time was recommended (twice as much or more time was recommended for the training program to be implemented). While these comments may stem partly from the fact that the trainees received per diem for participation, they should be treated as a reliable indicator of the trainees' insufficient self-confidence in applying the new skills.

Around 1% of the comments included other criticism, such as: too few rooms available during the training sessions or faults of air conditioning, too little equipment available for every participant to practice the new skills (the expectation in these few comments was that every participant has a set of devices at their disposal throughout each training session), some pieces of small training equipment (ambu bags and masks) being "uncomfortable" to apply. The criticism was addressed by the project team; in 2024, the training courses were held in a new training center (launched and equipped with the help of the project). Complaints such as the above were not voiced in the 2024 surveys anymore.

The remaining comments typically confirmed the answers to the closed questions or stated that the respondent had nothing to add.



Online survey

The respondents evaluated the training similarly in the online survey: their overall assessment was very high, with the exception of aspects pertaining to time. These results show that a longer training would have been more beneficial to the project participants. Just as in the auditorium survey, the

respondents found the trainers professional and supportive. Most said also that the trainers provided them with timely feedback. The respondents' level of satisfaction with the information about the project and its objectives was lower, although the assessment was still decidedly positive.

Figure 4. Average and median assessment of the training courses in the online survey (1-5 scale)

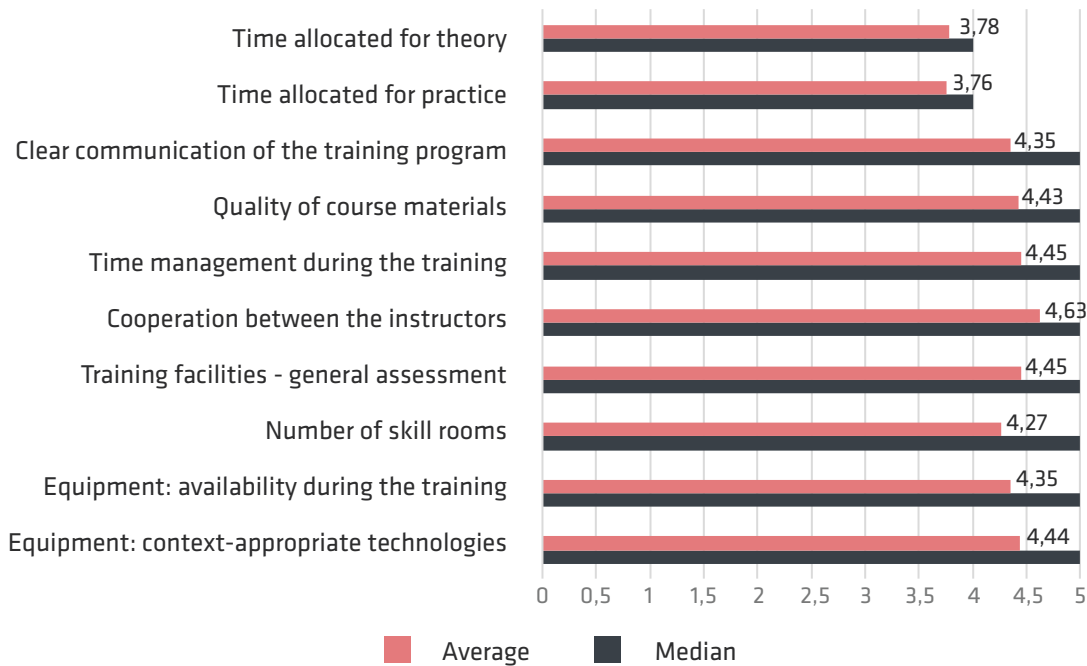


Figure 4. Average and median assessment of the training courses in the online survey (1-5 scale)

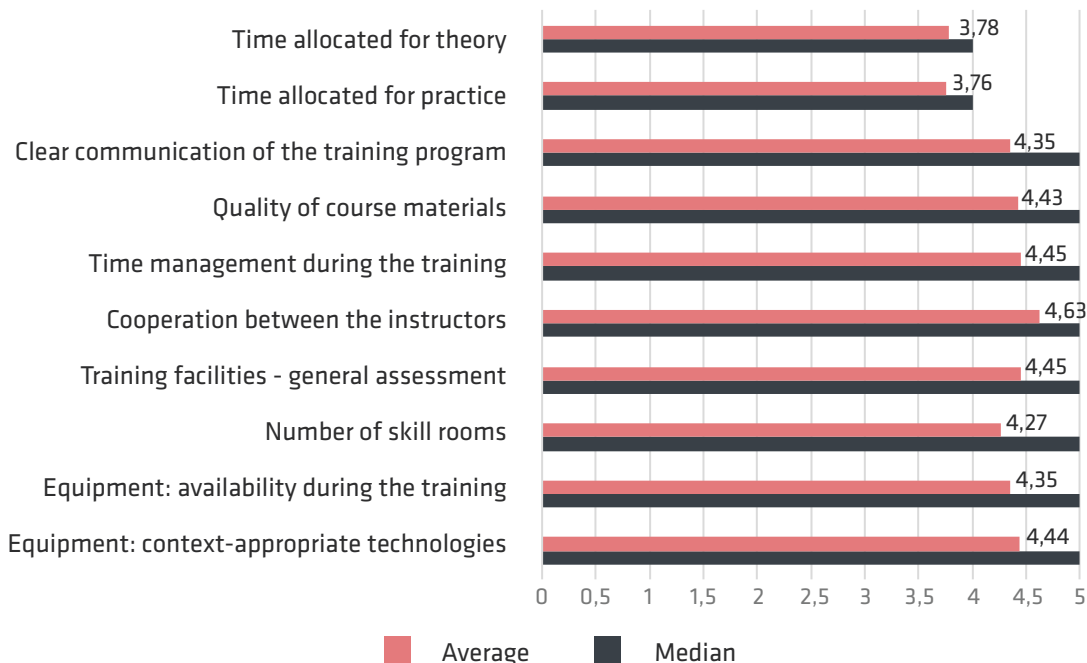
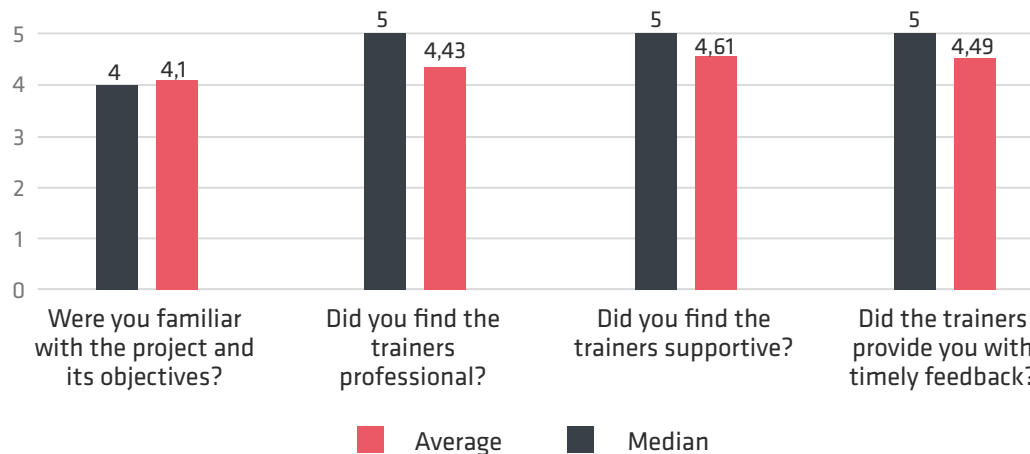




Figure 5. Average and median assessment of trainers' performance in the online survey (1-5 scale)



Critical remarks voiced in the open-ended questions were few and included: too small rooms (1 answer), too little emergency equipment (1 answer) and too few models for demonstration (1 answer).

The online survey provides basic data on the level of completion of the course and reasons

for skipping classes or dropping out. Two thirds of the respondents completed over 75% of the course, and 18% said they took part in less than 50% of the classes. The reasons for absences were in most cases (45%) related to incompatibilities between the respondents' work schedule and the training plan.

2.3. ADDITIONAL DATA: IMPACT OF THE TRAINING ACCORDING TO TRAINING COURSES' PARTICIPANTS

Online survey

The respondents were asked three questions regarding applicability of their learnings. In each case, they assessed it on a 1-5 scale, where 5 marked the highest grade.

The respondents generally found the skills useful and possible to apply in their work. They were also planning (or already applying) them at their workplaces. Their comments to the questions show that utility and applicability of the skills belonged to the major strengths of the training:

Skills gained are definitely helping us in our day to day activities and dealing with patients

The skills I gained in the training will help me teach my fellows at work place

I will apply [the skills] at my workplace together with my colleagues who were not able to attend

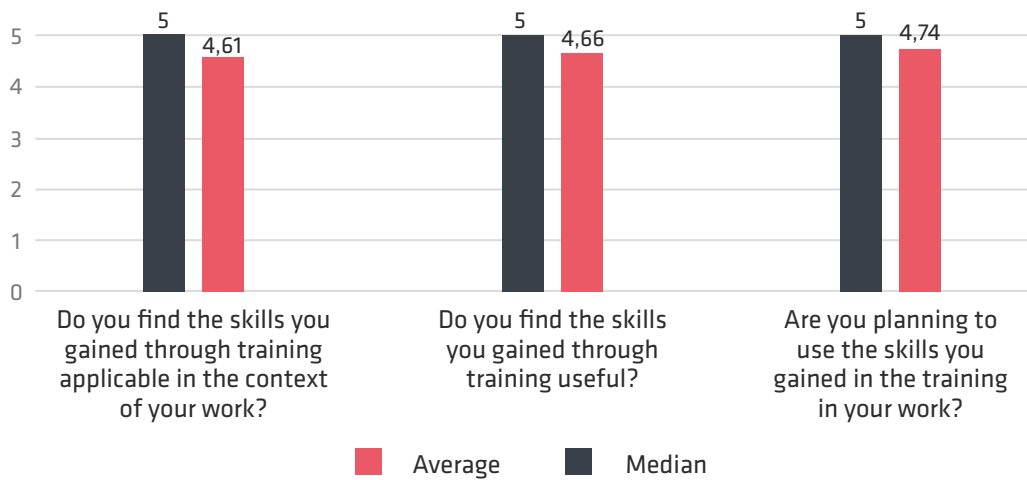
Skills are highly life-saving, and we need more training and skills to save more people.

I gained sufficient skills during training sessions, and I use them in my work.

Some critical remarks were also voiced by the respondents. Again, most were related to the short duration of the training (there were requests for more training sessions or expressions of limited confidence in the new skills, e.g. I need more practice in order to become competent). One respondent also said that too little equipment was available during the working sessions to ensure every trainee has sufficient time to practice its application.



Figure 6. Average and median assessment of applicability and utility of the training takeaways in the online survey (1-5 scale)



Some of the comments show also that the trainees share knowledge with their colleagues at work who did not have a chance to take part in the training. While this practice may reinforce the positive impact of the training, it also entails the risk that the further (unsupervised) transfer of knowledge may

distort or omit some of the important information provided by the trainers. Considering that many of the respondents expected their courses to be longer or requested further training, the risk should be taken into consideration and discussed with the local partners of the project.



Medical equipment in use



POCUS training



First aid training for first responders



Young patient at the emergency department



3. PARTNER AND SUPERVISOR ASSESSMENT OF THE PROJECT'S RELEVANCE AND IMPACT

In this section, we summarize the observations of the project's implementation partner, AKHST, as well as the project's expert medical consultants (trainers and supervisors) on the project's relevance and impact. Their observations suggest that the project has impacted the medical practice positively and the positive impact was strongest thanks to the activities which were most carefully tailored (especially, the post-training supervision).

3.1. PARTNER OBSERVATIONS ON THE PROJECT

As a project implementation partner, AKHST was involved in the key monitoring activities providing their insights into the tools design and support in their implementation, as well as initiating some of the monitoring and evaluation activities. In 2023, the organization attempted evaluating the outcomes and impact of the project quantitatively. The partner used data collected during the project activities (trainings and the later supervision) as well as the emergency departments' data. The indicators and data sources the partner used are listed in the table 8.

These indicators have their methodological limitations. Firstly, reliability of some of the impact indicators can be affected by chance events (e.g. large scale accidents may impact the number of the necessary referrals or deaths registered at a department). Secondly, the assumption that fewer referrals indicate higher quality of medical care is problematic. While it may hold true for some of the cases, in others, lack of a referral may stem from factors such as a patient's ability to cover the cost of further specialized treatment or efficient diagnostics pointing to the necessity of a referral. Finally, not all of the data sets were full. Most importantly, some trainings

included only a post-test (without the pre-test), which makes it impossible to measure the outcome indicator proposed by AKHST for BLS and PEARS. On the other hand, the supervisors' reports show a very strong element of this framework as each of the supervisors filled out a monthly report for the full 2023.

The AKHST full report is annexed to this report. Below, we provide a comment on its key findings.

Test scores

The report shows an increase in test scores between the pre- and post-test for ACLS, PALS and PTC (only for these three trainings both tests were done in 2023). The score corresponds to the percentage of the correctly answered questions.

It should be stressed that the increase in scores indicated by the analysis is only slight: from 73% to 82% for ACLS, from 76% to 86% for PALS and from 61% to 76% for PTC. At the same time, the pre-test results show that the initial level of the participants was already high. This shows that the project did not result in a significant broadening of theoretical knowledge of training's participants. However, the main objective of the project was far from academic: it was to positively impact medical practice.

³ The slight change between pre and post results stems from the fact that in the case of the AHA trainings, the participants had to read and watch videos pre-course and achieve a score of >70% in the pre-test to be eligible to attend the training as per AHA regulation.



Table 8. Monitoring and evaluation indicators used by AKHST to assess the outcomes and impact of the project in 2023

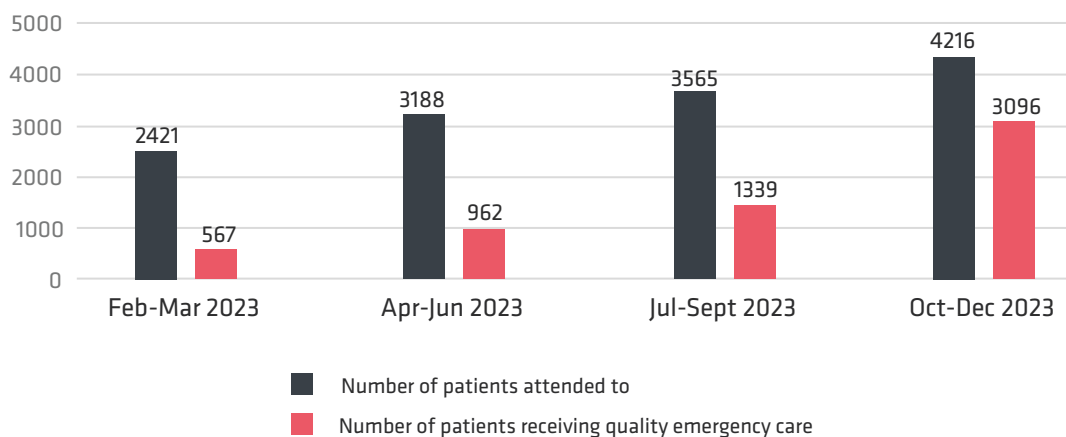
Indicator type	Indicator	Data collection method
Outcome indicator	# increase in average score from pre- to posttest	Tests conducted before and after a training
Outcome indicator	# patients who received quality emergency care	Supervisors' reports (supervisors were local medical doctors working as coordinators for the project from the hospitals' side; they were responsible for assessing whether the trainees applied their new skills correctly and providing them with guidance when needed)
Impact indicator	# referrals made	Emergency departments' data
Impact indicator	# deaths at the emergency department	Emergency departments' data

Quality of care

The results related to quality of care are unambiguously positive. They vary from hospital to hospital, but the data point to about a twofold increase in the number of patients receiving high quality care between the first and the last quarter of the 2023. Moreover, patients receiving quality care constitute an even higher share of all patients

attended to at the departments. It should be stressed that the growth is steady, which shows that the new skills require time to settle into daily practice. This gradual improvement of the quality of care also suggests that supervision of the trained personnel was key to ensuring the impact of the project on medical practice.

Key statistics on performance of emergency departments supported as part of the project between January and December 2023



⁴ Due to inconsistencies in reporting frequency, data from Aga Khan hospitals (the main facility and other outreach centers) could not be included in the below chart. The reports do not cover the full February-December period and thus would not provide viable information about the proportionate change of the indicators' value over the period in question.



Deaths and referrals

The analysis shows that the number of referrals and the number of deaths decreased on average at each of the hospitals over the year. As explained earlier, reliability of these data is susceptible to external factors and therefore it is risky to claim that the project translated directly into the exact number of lives saved or medical procedures spared at other hospital departments due to insufficient emergency care. However, the data from the hospitals are consistent and point to an improvement in both areas. This shows that, with all likelihood, the project contributed to saving lives and improving health outcomes, but the scale of this impact requires further confirmation.

3.2. TSES OBSERVATIONS ON THE PROJECT

Three international staff members who worked as trainers and supervisors at the emergency departments at Mwananyamala, Temeke and Aga Khan hospital, shared their observations on the project in the form of activity reports. For the convenience of the Reader, let us call these staff members TSEs (Trainers and Supervisors for Emergency Departments).

Each TSE spent a week at each hospital. During this time, they were involved in providing specialized assistance to the department's medical personnel. As they had legal permission to perform medical procedures in Tanzania, they were also directly involved in treating patients when the workload or the character of the recommendable medical procedure exceeded the capacity of the local personnel. Given the nature of their involvement, the TSEs had an occasion to examine and strengthen the relevance and sustainability of the project. They could guide the local personnel in proper application of the skills taught during the trainings and, if necessary, recommend solutions which were not included in the training curriculum. The main observations of the TSEs are summarized below.

Hospitals capacities: tackling the differences between the beneficiary institutions

All TSEs observed significant differences between the hospitals. The differences were related to personnel capacities, internal organization and workload. The TSEs assessments were consistent and pointed to one of the hospitals as meeting most of the international standards of emergency care, one as close to meeting them, and one as requiring major changes in emergency care organization and protocols.

The fact that capacity development needs may significantly differ shows that capacity development programs need to be tailored. The programming decision that each of the hospitals should receive longer-term individual support of a TSE meets this requirement with regard to the training follow-up. However, diversification of the training offer to adapt it better to each emergency department's specificity should also be considered.

Common needs and challenges

Despite the differences, a number of challenges and capacity development needs were common to all the hospitals. These included:

- The need to improve protocols related to prioritization of cases. In two of the hospitals, systems of prioritization functioned properly in practice, but included too rough examination (esp. physical examination) procedures and lacked formalization. While the latter may not be very important for patients, it could improve internal communication between the hospitals' employees and facilitate smoother onboarding. In the third hospital, prioritization of cases was unsystematic and the first examination procedures were insufficient: introducing clear protocols and additional training on patients' examination was recommended. As one of the TSEs wrote:



“Lack of basic physical examination, no secondary assessment. Triage was based on visual inspection of the patient, with elements of medical interview. Patients were often left alone with rare observation from nursing staff. Critical conditions, such as sepsis, respiratory failure were often not recognized, or barely treated. Life-saving interventions in severe conditions, such as management of bleeding, CPR, resuscitation were often far from standards, and introduced with delay. In my opinion, medical personnel at [the hospital] requires complex training in many areas, starting from BLS, through ITLS, POCUS, nursing care, pediatric and obstetric care.”

- The emergency departments’ medical personnel devoted little attention to analgesia and sedation of patients. Pain and shock were not always properly diagnosed or even recognized as issues requiring immediate intervention. This applied also, to a lesser extent, to trauma care. As one of the supervisors suggested:

“Another area for further improvement and training is management of trauma, wounds and severe bleeding, as well as pain management. I proposed further training in recognition and management of shock in trauma, which should be offered to all doctors and surgeons consulting in the ED.”

These observations should be analyzed in the context of the lack of universal medical insurance in Tanzania (see further). It is possible that lesser attention given to pain and shock stem from the fact that patients pay for each medical procedure. The medical personnel may be reluctant to propose procedures that are not absolutely critical to a patients rescue.

- Two of the TSEs also pointed to insufficient use of patient’s monitors or lack of such equipment. However, emergency departments’ differed with regard to application of medical equipment, so any follow up activities should rely on an individual assessment.
- One of the TSEs observed also that many of the frequent injuries in the emergency

departments (e.g. head and neck injuries resulting from traffic accidents) could have been avoided if prevention activities had been intensified (e.g. activities focused on encouraging motorcyclists to wear helmets).

Hospital specific challenges

The supervisors’ report also observations on the challenges specific to each hospital. These were related to internal organization of the emergency departments and technical state of the emergency facilities.

- One of the TSEs observed that unnecessarily hierarchical relationships between medical personnel often affected the proper implementation of medical protocols (the observation was made with regard to the hospital, which was assessed as providing the poorest emergency care by all three supervisors): “The personnel consists of senior consultants and young doctors, and the hierarchy affects diagnostic and clinical decisions. Younger doctors admit working under pressure from senior staff members... ..People working there openly talk about being overwhelmed and unmotivated by the environment in which they work, by pressure from superiors, and by the amount of work.”
- The emergency department of the same hospital also held rooms that were insufficient for the purpose.. For instance, in some of its rooms electric sockets were lacking, which made it impossible to apply regular electronic equipment there:

“The Trauma Bay is not equipped with a monitor, because there is no electrical socket in the room. It means that there is no way to install the cardiac monitor or use the ultrasound machine unless it has an internal power supply from the battery. Emergency trolleys are often poorly equipped even with necessary life-saving devices. This equipment is available at the supply point, but obtaining it is time-consuming. Basic emergency equipment and medication should always be available in the trauma room.”



Systemic challenges

All TSEs observed that lacking universal medical insurance deeply affected the quality of medical care offered at the emergency departments and negatively impacted personnel's morale. Checking whether a patient would be able to cover the cost of a procedure was time consuming and delayed provision of necessary aid. Moreover, resource intensive procedures were less often applied as many patients were not able to pay for them. Some of the doctors opposed the system and provided basic assistance regardless of the patient's ability to cover their costs, which may have entailed risks to these doctors' careers.

What seems a recommendable form of development aid considering the limitations of this system is a focus on the most effective and financially accessible emergency care procedures, as this TSE explained:

"Unfortunately..., ...it will not be possible to fully adopt the guidelines and procedures for managing critically ill patients due to the lack of universal insurance. The care provided at the beginning is strongly limited by whether the patient (or their family, if the patient is unconscious) can pay for a given procedure... While ALS training works very well in our [Polish] realities, unfortunately, it does not in Tanzania. In my opinion, we should shift the focus from ALS procedures centered on cardiopulmonary resuscitation to early identification of at-risk patients and the implementation of critical interventions (which are not costly) even before formally paying for hospitalization.

- Closely work with each emergency department to ensure relevance of the assistance provided and adapt it to the specificity of its internal organization;
- Simulations are recommended as a training method closest to the reality of work at the emergency care units;
- Given the lack of universal medical insurance, the focus on less resource-intensive medical protocols is necessary to cater for the needs of patients with limited financial resources;
- Inclusion of prevention activities in medical aid programming.

The TSEs reports suggest that a different order of activities may facilitate higher relevance and sustainability of the activities. Namely, the TSEs task may include an initial needs assessment, which can be followed by training and, later, by supervision. One of the TSE's suggested extending the time each TSE should stay at an emergency department to one month, which is worth consideration.

Additionally, a thorough check of the emergency facilities and the equipment management systems is recommended to identify the necessary modifications that should be introduced by the beneficiary hospitals before the aid is provided. For instance, a hospital may be required to install additional sockets in some of the rooms or commit to making some pieces of equipment constantly available to the emergency departments.

TSEs recommendations summary

TSEs recommendations were consistent and focused on the following points:

- Capacity development activities should be more carefully tailored to the needs of the hospital departments, which tend to differ with regard to the medical standards they are able to fulfill;



4. MONITORING VISITS

Four hospitals which received in-kind assistance of highest value were visited in Autumn 2024 (the last 6 months of the project) by a PCPM staff member to monitor the outcomes and impact of the aid provided. Each monitoring visit had two stages. Firstly, the PCPM representative interviewed a hospital's management member involved in the project. Later, the visitor interviewed a "frontliner", i.e. a member of medical personnel who used the equipment in their daily medical practice, and together they inspected the equipment.

In one case, the management member delegated by the hospital and the frontliner were the same person. In two other cases, the primary hospital director and emergency department representative, both involved in the project from the start, were not available during the monitoring visit. As a result, other members of medical personnel were interviewed. Their knowledge of the project and how the equipment was allocated might not have been as thorough. Still, the information they provided remains valuable as they reported based on their experience of daily work at the hospitals.

Only higher value medical equipment was inspected. The key monitoring questions included: whether the equipment was received at all and, if so, whether it was present, complete, functional and in use. Moreover, the PCPM visitor asked the hospital representatives to assess the quality of the equipment and inquired about its operation and maintenance capacity.

At two of the hospitals, PCPM conducted a prior monitoring visit between April and June 2024. Over the course of the project, PCPM and AKHST visited the hospitals on a regular basis to monitor the development of the emergency departments. The visits allowed for identifying and tackling emerging challenges. For instance, one of the issues raised in Hospital 1 was the problem of

securing the equipment in the newly renovated emergency room, due to the inability to lock the door. The higher value equipment was stored in separate storage rooms and released on request. After our suggestions the hospital addressed this problem by installing the new door and a lockable cabinet.

The table 9 summarizes the main results of the monitoring visit related to the state and utility of the equipment donated as part of the project. According to the information provided by the management members of the hospitals, in three out of the four hospitals visited, all or most pieces of equipment inspected and inquired about were functional and in use. At hospital 3, three types of equipment were never put to use and three were out of order. As the visitor was informed, the equipment out of order was being repaired by the technicians of the hospital.

The information provided by the management members was consistent with that provided by a frontliner and with the PCPM delivery registries (signed by the beneficiary institutions), with the following exceptions:

- Hospital 1 received wall-mounted monitors according to the PCPM registry, but the representatives said only portable monitors were delivered.
- Similarly, Hospital 3 reported the CPR boards as well as EZ-IO drivers as never delivered, although the PCPM registry lists them as delivered.
- Hospital 3 received an EMMA capnograph, but never put it to use (according to the frontliner).
- Nebulizer machines were not used (according to the frontliner).

Additionally, the interviewees noted that some pieces of equipment were used only rarely or were temporarily out of use. The table below reports the challenges observed and measures taken to address them.



Table 9. Monitoring visits results: presence, functionality and utility of the medical equipment provided as assessed by hospital's management member

	Hospital 1	Hospital 2	Hospital 3	Hospital 4
Laryngoscope MacIntosh	█	█	█	█
Laryngoscope Miller	█	█	█	█
EZ-IO driver	█	█	█	█
ECG machine	█	█	█	█
Vein finder	█	█	█	█
Veinlite ledx vein finder	█	█	█	█
EMMA capnograph	█	█	█	█
Spine board	█	█	█	█
Nebulizer machines	█	█	█	█
Oxygen cylinder flow meters	█	█	█	█
Wall-mounted dual oxygen flow meters	█	█	█	█
Volumetric infusion pump	█	█	█	█
Syringe pump	█	█	█	█
Wall mounted patient monitor	█	█	█	█
Step stool	█	█	█	█
CPR board	█	█	█	█
Portable patient monitor	█	█	█	█
Video laryngoscope	█	█	█	█
Ultrasound machine	█	█	█	█

█	Non-applicable – piece of equipment was not a part of the assistance provided
█	Received and present, but not in use*
█	Received and present, but out of order
█	Received, present, complete and functional, in use

* Completeness and functionality were impossible to confirm by the hospital's representatives as the institutions had not put the equipment to use.



Table 10. Relevance of in-kind assistance provided: list of challenges observed during monitoring visits

Hospital	Challenge	Had the challenge been reported by the beneficiary before the visit?	Action taken
1,2 and 3	Syringe pumps were rarely in use as patients rarely needed them. The pumps are incompatible with some types of medication. Not all of the personnel know how to use them.	No	An additional training on the use of syringe pumps (using the 50 cc syringes which were previously provided) was organized for the hospitals' staff members.
1	Glucometers were temporarily out of use as the necessary consumables (strips) were not available in Tanzania.	No	The machines delivered as part of the project were not compatible with strips available in Tanzania. New glucometers were ordered, which were compatible with the strips. At the same time, the old glucometers were delivered to the new training center to serve as educational aids.
2	Some of the wall mounted monitors were temporarily lacking electrical cables as, due to the general shortages of equipment, the cables were switched to different devices.	No	Hospital and emergency directors were alerted to this misuse of the equipment delivered. At the same time, PCPM acknowledged the need for a more thorough needs assessment.
3	The infusion pump was not properly maintained (some cables were misplaced and the pump required cleaning).	No	The hospital directors were contacted to discuss how to ensure proper maintenance of the equipment. It was decided no extra training was necessary.
1	One of the portable patient monitors lacked a pulse oximeter and thermometer	Yes, internally	The lacking part was found in the hospital storage with stock items and attached to the device.
3	One of the ECG machines was out of order	Yes, internally	The reason for the machine missing was resolved: during the monitoring visit the biomedical team was working to repair it (replacing the blue bulb electrode system with the stick-on electrodes). The machine was repaired and is back at the department.
3	EMMA capnographs were not in use as the personnel did not know how to operate them	No	The hospital directors were invited to send the medical personnel to AKHST for training on the equipment's operation.
3	Nebulizer machines were out of order due to, as the interviewees suspected, inexpert operation.	No	They are in use at the facilities; in Hospital 3, they did not know they could attach regular nebulizer masks and assumed it needed special connections. This was resolved. Hospital 4 (AKH) - the machine was sent to a different AKHST outreach center where it is in use.
3	Laryngoscopes were out of order	No	AKHST team examined the case. They replaced the batteries and explained to the hospital's staff members how to troubleshoot when batteries are dying.
3 and 4	Personnel does not know how to use the vein finder	No	AKHST trained the hospitals' personnel on the use of the vein Finder.



4	Nebulizer machines were not needed at the department	No	Nebulizer machine was dispatched to an AKHST facility where it was needed.
4	Video laryngoscope had not been needed so far	No	Video laryngoscopy is for difficult intubations and so far, the cases have been manageable without needing it. It was one of the last pieces group of equipment provided so not enough time has passed to see it get used.
4	Portable patient monitor was found within the maintenance team	Yes, internally	Software configuration was completed successfully
4	More step stools are needed at the hospital, but the additional stools should be wider. Other needs include: defibrillator with matching pads, ECG machines with matching paper, syringes and infusion pumps.	No	Remarks were noted by the project team and taken into consideration when deciding about the equipment support. In the last round of equipment procurement the hospital was provided with AED defibrillators with matching pads.

The hospital's representatives were also asked to assess the quality of the equipment provided. The table below presents this assessment's results. Most pieces of equipment were evaluated as high quality, 9 were assessed as satisfactory, and 1 (vein

finder) as unsatisfactory. It should be noted that the vein finder was also described as difficult to use which indicates that the hospital personnel may need some guidance or training on how to apply this device.

	Hospital 1	Hospital 2	Hospital 3	Hospital 4
Laryngoscope MacIntosh		High		High
Laryngoscope Miller		High		High
EZ-IO driver		Satisfactory		High
ECG machine	High	High		High
Vein finder				High
Veinlite ledx vein finder			Unsatisfactory	
EMMA capnograph				High
Spine board	High	Satisfactory	Satisfactory	
Nebulizer machines	High	High	Satisfactory	
Oxygen cylinder flow meters	High	Satisfactory	High	High
Wall-mounted dual oxygen flow meters	High	Satisfactory	High	High
Volumetric infusion pump	High		High	High
Syringe pump	High			High
Wall mounted patient monitor		Satisfactory		
Step stool	High	Satisfactory	Satisfactory	High
CPR board	High	High		
Portable patient monitor	High	High		High
Video laryngoscope				
Ultrasound machine				High



The main conclusions from the monitoring visits are positive. Most equipment has been in good condition and in use. Those pieces which were reported as out of order, were being repaired by the hospitals' technical/maintenance services. At the same time, the monitoring indicates several areas of possible improvement, which are:

- the need to ensure that the hospitals' personnel who are using/are to use the equipment are fully capable of its operation and that the hospitals' technical departments have full knowledge regarding its maintenance requirements;
- the need to review the choice of models of several pieces of equipment delivered

taking into consideration the hospitals' personnel observations on its quality (this concerns mainly the step stools and vein finders);

- the need to review the needs assessment method to ensure that the delivered equipment is not used as a source of spare parts for other devices deemed more needed.

These challenges can be tackled by combining the equipment's handover with an operation and maintenance training and a more careful needs assessment that takes into account also the maintenance challenges that the health care sector may be facing in



New training center



ACLS ToT training



PTC ToT training



First aid training for first responders



5. CONCLUSIONS AND RECOMMENDATIONS

This analysis relied on various types of data gathered throughout the project implementation. We used opinions of the project participants, project partners and external consultants as well as self-gathered data from monitoring visits. While perspectives and expectations of these various stakeholders differed, their assessment is consistent and generally positive. In this section, we look into the strengths and weaknesses of the project and propose recommendations for similar projects in the future.

5.1. CONCLUSIONS

The data analyzed in this report show that the project's target was well-identified and that the support provided was highly relevant to the local needs. At the same time, data from all sources suggest that a broader scope of activities was highly recommendable. Most importantly, the training courses and the supervision period should be longer.

One of the definite strengths of the project was the involvement of the local partners, the Ministry of Health and AKHST. The partners supported the project from the beginning, among others, through identification of target institutions and assessing their needs as well as evaluating the impact of the project. The project not only facilitated the delivery of essential resources and support but also significantly strengthened the implementation partner's (AKHST) capacity by developing and equipping a training center with state-of-the-art facilities, advanced manikins, and specialized training materials. This enhancement has enabled the center to provide more comprehensive and effective training programs, ensuring that AKHST can better serve its target communities and sustain long-term development goals. Additionally, the upgraded training center has empowered staff and trainees alike, boosting overall organizational effectiveness and improving the quality of services offered.

The aid supported the organization developing their activities aimed at strengthening the Tanzanian medical sector through training. This localized approach ensured the project's higher legitimacy and relevance to the local needs. It also facilitated easier contact with the beneficiary institutions. Finally, the partnerships increased the chance that further development activities targeting the same hospitals, whether planned by the Ministry or offered by the AKHST training center, would complement the already delivered assistance as part of the Polish Aid project.

Medical personnel participating in the training were generally optimistic about the utility and applicability of the new skills. They had no doubt that they could use them in their daily work. Satisfaction levels were highest among participants of training of trainers, and slightly lower for the first responders and medical personnel working at emergency departments. Some of the latter declared they were still insecure about how to apply the new skills. The fact that the trainees were later offered supervisors' support responded to their need of further guidance. The post-training supervision belongs to the best practices in the project ensuring that the new competencies are properly contextualized and applied.

The results of monitoring by AKHST conducted in 2023 pointed to the high positive impact of the project on medical practice. Most importantly, the number of patients receiving aid in line with high medical standards increased twofold over the year. Although the direct impact of the project on parameters such as number of deaths at each emergency department has not been sufficiently evidenced, this number was shrinking over the same period. The AKHST monitoring confirmed the key role of supervisors in ensuring guidance in proper application of the learnings from training.



The monitoring visits provided a deeper insight into the project's in-kind assistance component. The vast majority of pieces of equipment delivered were operational and in use. They were also assessed as high quality and useful by the representatives of the beneficiary institution. The hospitals were able to provide basic servicing to the equipment. However, the visits showed that a few pieces of equipment were not needed or inconveniently designed, or that the medical staff were not sure how to operate them. Moreover, representatives of the hospitals where the visits were made also shared other equipment needs, which they believed were equally pressing as those satisfied by the project. These results show that relevance and sustainability of the in-kind component of the project would be higher if the needs assessment was more detailed and if the equipment's handover was combined with training on how to operate it.

The international consultants employed as trainers and supervisors (TSEs) were perhaps the most critical of the project. This mirrors their high expectations of their own work and some degree of disappointment related to the fact that not everything was possible to achieve in the context of intervention. While they all tended to focus more on challenges than the project's strengths, none questioned

its relevance to the needs of the local hospitals. Also, the TSEs assessed the trained medical personnel's competencies highly and confirmed that the new skills and equipment were, with some exceptions, put to good use. At the same time, their observations on the systemic limitations of the Tanzanian healthcare system (lacking universal health care) impacted the quality of emergency aid or the differences between hospitals can help design similar projects in the future. The TSEs, similarly to the participants of the training courses, believed that most activities should last longer. Based on these results, too short duration of training courses and the TSEs' supervision seems to be the main weakness of the project.

5.2. RECOMMENDATIONS

Our recommendations focus on questions related to relevance and impact of the support. In the list, we included good practices already employed by the project team as well as solutions that could have contributed to higher relevance and more sustainable impact of the project. The recommendations were ordered according to project stage: from the preparatory stage through provision of support, to monitoring and evaluation.

Preparatory stage: stakeholders identification and needs assessment

Good practice to replicate	Assume a localized approach: include the local stakeholders in the key tasks such as identification of your target group and the needs assessment. This will strengthen the relevance and legitimacy of your project and help you avoid duplication.
Recommendation for the future	Share capacities with your partners from the beginning: as much as possible, ensure that the tools you commonly use to identify your activities' target groups and their needs comply with high standards of inclusion and sustainability.



Recommendation for the future	<p>For in-kind assistance in the form of advanced equipment, consider monitoring visits at the assessment stage. When planning such visits, take the following into consideration:</p> <ul style="list-style-type: none">- Needs assessment should help you identify what equipment is needed and whether a project participant has the human and financial capacity to maintain and operate it. When relevant, the assessment should also include technical conditions at the facilities where the equipment is supposed to be delivered (e.g. whether there are enough electrical sockets or room to install the equipment).- In conditions of scarcity, make sure to look closely at maintenance challenges related to the equipment already used by your beneficiaries. Mitigate the risk that the equipment you deliver may be used as a source of spare parts by supporting better maintenance of the pieces of critical equipment that are already present at the beneficiary facilities.
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Provision of support

Good practice to replicate	Operate in a way that strengthens your local partners during the project's implementation. They will carry on with similar activities once your project is over. Their increased capacities will support sustainability of the results of your project.
Good practice to replicate	Tailor your support to the needs of your target audience. Take into account they may have differing needs and capacities. As much as possible, ensure individualized support to development challenges.
Good practice to replicate	Strengthen your capacity development activities through follow up support that ensures proper application and contextualization of the new skills and technologies.
Good practice to replicate	Ensure that the trainers know the local context and share at least some of the experiences of the trainees. Look for experts (including international experts) from similar contexts. The project hired four PCPM experts from neighboring Kenya, which cut the cultural distance between the trainers and the trainees.
Recommendation for future projects	Consider combining training on the use of the equipment with the equipment's handover to avoid situations in which some members of the beneficiary institution's personnel lack confidence in its application.
Recommendation for future projects	Specifically, fFor medical institutions operating in conditions of scarcity and requiring payment for medical procedures specifically: <ul style="list-style-type: none">◦ When designing capacity development activities, focus on the less resource-intensive (and thus more affordable) procedures;◦ Consider combining development aid with elements of humanitarian assistance targeting those patients who cannot afford medical care.
Recommendation for future projects	Consider extending the duration of training, especially for those project participants who will not benefit from the later support of a supervisor.



Monitoring and evaluation

Good practice
to replicate

Include your partners in the monitoring and evaluation activities.
Make sure each activity is monitored.

Good practice
to replicate

Broaden your monitoring practices to include questions related to
inclusion and safeguarding.

This report is a result of a group effort. Contact us if you have questions.

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