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How are fast tracks organized in adult and pediatric emergency departments in Switzerland? A cross-sectional survey

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Abstract

Background In response to the challenges faced by emergency departments (ED), including overcrowding and high patient volumes, Fast Track (FT) systems are designed to optimize patient flow, yet their implementation and impact in Switzerland remain understudied. Our study provides a comprehensive description of Fast Track (FT) processes across both pediatric and adult settings in Switzerland and compares challenges.

Methods We conducted a cross-sectional online survey of ED leadership in Switzerland from May to September 2023, using the WHO SARA framework to explore FT processes. The survey included 28 pediatric EDs and their corresponding adult EDs, with questions addressing FT availability, staffing, infrastructure, and operational challenges. Results were analyzed descriptively, providing insights into FT organization and highlighting barriers to implementation and expansion.

Results The survey achieved a response rate of 93% (52/56 EDs). Overall, 68% of surveyed hospitals have implemented a FT system, with a higher prevalence in adult EDs (88%) than in pediatric EDs (59%). The absence of FTs in certain pediatric departments was primarily due to structural and personnel constraints. Most FTs are managed internally by hospitals, employing emergency team members, and occasionally general practitioners, reflecting a tailored approach to staffing based on departmental needs. Despite the strategic organization of FTs, operational challenges persist; 45% of respondents identified staff shortages as a major challenge, particularly in pediatric FTs (63%) compared to adult FTs (32%). Financial barriers, including disparities in external physician compensation, remain significant obstacles to FT expansion. Satisfaction levels among EDs with their FT systems were generally high, with improvements in personnel resource allocation and patient flow frequently reported.

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Conclusion While FT systems in Swiss EDs have enhanced patient care and operational efficiency, their expansion and effectiveness are hampered by staffing and financial limitations. Addressing these barriers requires a collaborative effort to reform health system policies and financial frameworks, ensuring the sustainable implementation of FTs to meet the growing demands of emergency care.

Keywords Fast track, Emergency department, Overcrowding, Cross-sectional survey, Low triage, Self-referred patients, Non-urgent visits, Pediatric, Staff organization

Background

Emergency departments (EDs) are crucial hubs within healthcare systems, tasked with promptly evaluating, treating, and determining the disposition of patients based on the severity of their conditions. However, the landscape of emergency care is beset by a confluence of challenges, including a burgeoning population of chronically ill patients, a notable scarcity of primary care physicians and pediatricians [1, 2], and a persistent shortfall of hospital staff in EDs. These issues are compounded by overcrowded wards and a growing demand for medical services among the population, all of which strain ED capacity even further.

A particularly concerning trend is the upsurge in self-referred patients presenting with non-urgent medical problems, which significantly contributes to the overload and overcrowding experienced by Swiss EDs [3–8]. Notably, while outpatient emergency consultations surged by 32% from 2007 to 2011 [9], hospitalizations saw only a modest uptick of 16%, underscoring the disparity in healthcare utilization. A 2013 study in Lausanne estimated that 76.5% of ED presentations were for non-life-threatening conditions [3]. Moreover, a staggering 84% of larger Swiss EDs reported overcrowding as early as 2006 [4].

To deal with the high proportion of non-urgent visits, specialized treatment pathways, commonly referred to as “Fast Tracks” (FTs), have been implemented to streamline care for these patient cohorts. Usually, this cohort is identified using a triage system upon ED arrival. However, within Switzerland’s diverse and decentralized healthcare landscape, achieving consensus on FT management in EDs remains elusive. Additionally, there are different reasons and dynamics for adult and pediatric low acuity visits [10]. Remarkably, there has been no comprehensive assessment of the prevailing status quo of FT initiatives across Switzerland, which may serve as care models more broadly.

The objective of this study is to describe comprehensively the FT processes implemented in EDs across Switzerland. By offering a detailed descriptive overview, the study aims to elucidate the perceived operational intricacies of these processes, with a special emphasis on the comparative description of pediatric versus adult care models.

Methods

We conducted a cross-sectional online survey among ED leadership between May and September 2023. We used the WHO Service Availability and Readiness Assessment (SARA) as a conceptual framework for the development and implementation of our survey [11, 12].

We used the CROSS checklist for reporting survey studies and the CHERRIES checklist for reporting the results of the internet e-survey [12, 13].

Sample characteristics

To allow for a comparative description between pediatric and adult EDs, we included all 28 pediatric EDs in Switzerland along with the corresponding adult ED from the same institution. We contacted heads of departments and invited them to participate in the survey. The sample thus represents pediatric EDs in Switzerland fully and is biased towards larger adult EDs, as smaller adult EDs usually lack a dedicated pediatric ED.

Data collection methods

We designed an online open (i.e. participants were not restricted by a predefined sampling frame but were targeted based on their leadership roles within EDs) survey and modified the SARA core instrument broken down into the following sections (Supplementary File 1): facility characteristics, service availability of a FT, infrastructure and staffing of the FT and an overall subjective evaluation of the current FT structure and process. The survey contained a total of 29 questions (9 questions for participants without an existing FT). Questions were primarily quantitative, including single choice and multiple choice, with the possibility to review. The question types also included short-text answers. Only fully completed questionnaires could be submitted. Survey questions were deductively derived to capture structures and processes implemented for FTs in Switzerland. For the last section (subjective evaluation), we used open questions. Given the relatively small number of target participants, formal questionnaire validation could not be performed, which represents an important limitation. Instead, a pediatric and adult head of the department piloted the survey before implementation. We did not require proof of exact numbers for quantitative estimates (e.g. the number of patients seen). The questionnaire was voluntary and without any incentives.

Survey administration

We programmed and conducted the survey using the open-source mobile data collection platform ODK. The survey was available in German, English, and French. The information and the link to the survey were sent to all medical directors of the selected EDs by email. A total of 3 reminders to participate were sent by email. Finally, the medical directors not responding were contacted by telephone.

Ethical considerations

We sought ethical approval from the Bern cantonal ethics committee ("Ethikkommission für die Forschung am Menschen Bern", REF Req-2022-01237). The need for participant consent was waived according to national regulations (Swiss Federal Human Research Act), as the project did not collect personal or health-related data.

Data analysis

We reported survey responses descriptively. Proportions, means, and medians were calculated using Microsoft Excel. Missing data were not imputed. Our study was conducted without access to exact quantitative data and is therefore limited to perceptions and self-reported information from the surveyed ED leadership. As such, the results generally do not allow for meaningful statistical testing or inference beyond descriptive analysis. Though statistical significance was not the goal, we provide confidence intervals to compare differences between adult and pediatric FTs to give a better understanding of the data variability. Proportion differences are qualified with 95% confidence intervals (CI). We report proportions with absolute differences and 95% CIs using the Wilson score interval method for proportions and the standard error of the difference between two proportions for absolute differences.

Results

Respondent characteristics

Out of the 56 EDs surveyed, 52 completed the questionnaires, with 27 out of 28 pediatric and 25 out of 28 adult departments participating, yielding a response rate of 93%. All surveys were completed to the end. Table 1 displays the characteristics of the participating EDs. The study included all five university EDs (for both pediatrics and adults) and all ten cantonal hospitals equipped with pediatric emergency facilities. Adult EDs typically experienced larger patient volumes, with the two principal pediatric EDs in Switzerland serving 40,000–50,000 patients in 2022, whereas the foremost adult ED managed between 90,000 and 100,000 patients. Furthermore, pediatric EDs exhibited a higher percentage of potential FT patients (patients that were judged by the respondent to be suitable for treatment in a FT) compared to their

adult counterparts. However, when considering absolute numbers, the volume of potential FT patients was found to be comparable between pediatric and adult EDs.

We observed some regional differences in the prevalence of FTs in pediatric EDs: FTs were more common in the German-speaking regions (81%, 10/11) compared to the French- and Italian-speaking regions (47%, 10/16; difference 34%, 95% CI 4%; 60%). In adult EDs, the distribution was more balanced: 85% (11/13) of EDs in the French- and Italian-speaking regions operated with FT (2/13 without FT), compared to 92% (11/12) in the German-speaking regions (1/12 without FT). However, no regional differences were reported regarding the organizational structure of FTs.

Main findings

Availability of FT process

In the surveyed hospitals, 68% have implemented a FT system, with a notable discrepancy between pediatric and adult EDs. Specifically, only 59% (16 out of 27) of pediatric clinics have FTs, compared to 88% (22 out of 25; difference –29% 95% CI –48%; –10%) in adult departments. Plans to introduce FTs are universal in the adult units, which lack them (3 units, 12%), while in pediatric settings, such initiatives are limited to a few hospitals (2 units, 7%). Notably, a third of pediatric EDs (9 units) neither have nor intend to establish a FT system.

The absence of FTs in pediatric departments is primarily attributed to insufficient structural resources (100%, 9 out of 9 departments) and a shortage of personnel (89%, 8 out of 9 departments). Additionally, nearly half of these departments (45%, 4 out of 9 departments) reported financial constraints as a barrier. Interestingly, none of the pediatric EDs identified a lack of FT-eligible patients as a reason for not having a FT system in place (Table 2).

Organization of FT

Table 3 presents the organization of FTs across the surveyed EDs. The majority (82%, $n=38$) are managed internally by the hospitals themselves, with pediatric departments slightly more likely (88%, $n=14$) to do so than adult departments (77%, $n=17$; difference 11% 95% CI (–7%;29%). External partnerships (i.e. a joint operation with an external partner such as another hospital or clinic) are utilized in 23% (5/22) of adult FTs and 12% (2/16, difference 11%, 95% CI –7%;29%) of pediatric ones.

In terms of staffing, 92% (35/38) of FTs employ members of the ED team, and 29% (11/38) include general practitioners, with a higher prevalence in pediatric (38%, 6/16) than in adult (23%, 5/22; difference 15%, 95% CI –10%;40%) settings. Residents are more common in adult FTs (82%, 18/22) compared to pediatric ones (50%, 8/26 difference 32%, 95% CI 5%;9%). Surgical specialists (including orthopedics) are found in 45% of adult

Table 1 Characteristics of participating emergency departments (EDs)

Characteristics of the participating EDs	Pediatric ED (N = 27)	%	Adult ED (N = 25)	%	Absolute Difference % (95% CI)
	<i>n</i>		<i>n</i>		
Regions					
Lake Geneva region	8	30	7	28	2 (−19;23)
Central Plateau	5	19	5	20	−1 (−21;19)
Northwestern Switzerland	3	11	3	12	−1 (−17;15)
Zurich	3	11	3	12	−1 (−17;15)
Central Switzerland	1	4	1	4	0 (−15;15)
Eastern Switzerland	3	11	3	12	−1 (−17;15)
Ticino	4	15	3	12	3 (−15;21)
Hospital type					
University hospital	5	19	5	20	−1 (−21;19)
Cantonal hospital	10	37	10	40	−3 (−25;19)
Regional hospital	9	33	8	32	1 (−22;23)
Private hospital	2	7	1	4	3 (−13;19)
City hospital	1	4	1	4	0 (−15;15)
Interdisciplinary ED					
Yes	24	89	24	96	−7 (−22;8)
No	3	11	1	4	7 (−8;22)
Estimated number of ED visits (2022)					
< 10'000	5	19	0	0	19 (2;36)
10'000–15'000	6	22	0	0	22 (5;39)
15'000–20'000	4	15	1	4	11 (−5;27)
20'000–25'000	4	15	6	24	−9 (−28;10)
25'000–30'000	1	4	3	12	−8 (−24;8)
30'000–40'000	5	19	3	12	7 (−11;25)
40'000–50'000	2	7	6	24	−17 (−36;2)
50'000–60'000	0	0	3	12	−12 (−27;3)
60'000–80'000	0	0	2	8	−8 (−23;7)
80'000–100'000	0	0	1	4	−4 (−19;11)
Percentage of potential FT patients					
< 5%	0	0	2	8	−8 (−23;7)
5–10%	0	0	3	12	−12 (−27;3)
10–20%	2	7	7	28	−21 (−40;−2)
20–30%	9	33	6	24	9 (−13;31)
30–40%	7	26	6	24	2 (−19;23)
40–50%	3	11	1	4	7 (−8;22)
> 50%	6	22	0	0	22 (5;39)
FT available / planned					
Yes	16	59	22	88	−29 (−48;−10)
Planned	2	7	3	12	−5 (−21;11)
No	9	33	0	0	33 (16;50)

Table 2 Reasons for non-operating a FT

Reasons	Pediatric ED (N = 9)	
	<i>n</i>	%
Why is there no treatment pathway for “potential FT-patients”?		
(multiple choice possible)		
No need because the case number is too low	0	0
No human resources	8	89
No financial resources	4	44
No structural resources	9	100

FTs (10/38) but are rare in pediatric settings (6%, 1/22). Non-medical staff, including Medical Practice Assistants (MPAs) (53%, 20/38), qualified nurses (39%, 15/38), and healthcare assistants (34%, 13/38), play a significant role in FT operations. MPAs are more prevalent in pediatric FTs (69%, 11/26) than in adult ones (41%, 9/22; difference 28%, 95% CI 3%;53%). Nurse practitioners are employed in 11% ($n = 4/38$, 2 in pediatric, 2 in adult) of all FTs, and administrative assistants are used in 11% (4/22) of adult FTs, with none in pediatric settings.

Table 3 Characteristics of the FT organization

FT-Organization	Pediatric ED (N= 16)	%	Adult ED (N= 22)	%	Total (N= 38)	%	Absolute Difference % (95% CI)
	n		n		n		
Who organizes the “FT”?							
Own hospital, but not ED	14	88	17	77	31	82	11 (−7;29)
External partner together with ED/own hospital	0	0	2	9	2	5	9 (−9;28)
External partner, ED/own hospital organizes only the infrastructure	1	6	1	5	2	5	1 (−18;20)
Only external partner	1	6	2	9	3	8	3 (−16;22)
Who works in the “FT”? (Multiple choice possible)							
Doctors	16	100	22	100	38	100	0(0;0)
Nurses	4	25	9	41	13	34	16 (−7;39)
Health Care Assistants	6	38	9	41	15	39	3 (−21;27)
Medical office assistants	11	69	9	41	20	53	28 (3;53)
Nurse practitioners	2	13	2	9	4	11	4 (−15;23)
Secretary	0	0	4	18	4	11	18 (−2;38)
How many non-medical staff (nurses, medical office assistants) per physician work in the “FT”?							
1 paramedical staff for 1 physician	15	94	17	77	32	84	17 (−5; 39)
2 paramedical staff for 1 physician	0	0	4	18	4	11	18 (−2;38)
3 paramedical staff for 1 physician	0	0	1	5	1	3	5 (−15;25)
≥4 paramedical staff for 1 physician	0	0	0	0	0	0	0(0;0)
Only doctors, no paramedical staff	1	6	0	0	1	3	6 (−12;24)
How many patients are seen per physician per shift (8 h)? (Estimate)							
< 10	3	19	5	23	8	21	4 (−19;27)
10–15	3	19	12	55	15	39	36 (9;36)
15–20	6	38	5	23	11	29	15 (−10;40)
20–25	3	19	0	0	3	8	19 (−1;39)
25–30	1	6	0	0	1	3	6 (−12;24)
30–40	0	0	0	0	0	0	0(0;0)
> 40	0	0	0	0	0	0	0(0;0)
Who employs the staff working in the “FT”? (Multiple choice possible)							
Employed by the hospital, ED staff member	14	88	21	95	35	92	7 (9;23)
Employed by the hospital, house staff, not ED staff	3	19	4	18	7	18	1 (−15;17)
Employed by the hospital for the FT, otherwise working in an external practice	6	38	5	23	11	29	15 (−9;39)
Employed by an external partner	1	6	1	5	2	5	1 (−18;20)
What is the level of training of the physicians working in the “FT”? (multiple choice possible)							
Not yet a specialist (residents/interns/fellows)	8	50	18	82	26	68	32 (5;59)
Specialist in general internal medicine	2	13	14	64	16	42	51 (23;79)
Specialist of the Swiss society of emergency and rescue medicine SSERM	1	6	14	64	15	39	58 (30;86)
Pediatrician	12	75	2	9	14	37	66 (36;96)
Focus training in pediatric emergency medicine	6	38	1	5	7	18	33 (8;58)
Surgeon	1	6	9	41	10	26	35 (9;61)
Orthopedic surgeon	0	0	1	5	1	3	5 (−15;25)
Where are the “potential FT patients” treated? (multiple choice possible)							
In the ED, in the regular ED bunk	5	31	5	23	10	26	8 (−14;30)
In the ED, in specific bunks	12	75	18	82	30	79	7 (−15;29)
In the same hospital, in a different department	4	25	4	18	8	21	7 (−11;25)
External building, designed as “FT”	2	13	2	9	4	11	4 (−15;23)
Local doctor’s office of the doctor on duty	0	0	0	0	0	0	0(0;0)
How many treatment places are available per physician?							
1	3	19	3	14	6	16	5 (−15;25)
2	4	25	9	41	13	34	16 (−7;39)

Table 3 (continued)

FT-Organization	Pediatric ED (N = 16)	%	Adult ED (N = 22)	%	Total (N = 38)	%	Absolute Difference % (95% CI)
	n		n		n		
3	2	13	3	14	5	13	1 (-15;17)
4	3	19	6	27	9	24	8 (-13;29)
> 4	3	19	2	9	5	13	10 (-11;31)
Opening hours weekdays							
Monday - Friday	14	88	22	100	36	95	12 (-2;26)
Saturday / Sunday	15	94	20	91	35	92	3 (-13;19)
Opening hours (weekday and weekend combined)							
Morning	8	50	21	95	29	76	45 (16;74)
Afternoon	16	100	22	100	38	100	0 (0;0)
Evening until 18.00 o'clock	1	6	4	18	5	13	12 (-8;32)
Evening until 20.00 o'clock	2	13	3	14	5	13	1 (-15;17)
Evening until 22.00 o'clock	3	19	5	23	8	21	4 (-19;27)
Evening until 23.00 o'clock	6	38	5	23	11	29	15 (-10;40)
Evening until 24.00 o'clock	4	25	4	18	8	21	7 (-11;25)
How are the patients triaged? (Multiple choice possible)							
On arrival at the ED, by a nurse	16	100	22	100	38	100	0 (0;0)
On arrival at the ED, by a physician	0	0	3	14	3	8	14 (-6;34)
On arrival at the ED, by another person	0	0		0	0	0	0 (0;0)
Telephone triage	3	19	3	14	6	16	5 (-15;25)
Online by patient	0	0	1	5	1	3	5 (-15;25)
How are the in-house physicians paid? N = 15 (Pediatric ED), N = 20 (Adult ED), N = 35 (Total)							
Basic wage (assignment is part of the regular working hours)	15	100	20	91	35	95	9 (-7;25)
Additional payment	0	0	1	5	1	3	5 (-15;25)
I don't know	0	0	1	5	1	3	5 (-15;25)
How are the external physicians paid? N = 7 (Pediatric ED), N = 6 (Adult ED), N = 13 (Total)							
Fixed salary	5	71	3	50	8	62	21 (-15;57)
Fixed hourly wage	0	0	2	33	2	15	33 (-3;69)
Basic salary + fixed amount per patient	0	0	0	0	0	0	0 (0;0)
Basic salary + commission representing a percentage of the Tarmed revenue	0	0	0	0	0	0	0 (0;0)
Commission representing a percentage of the Tarmed revenue without basic salary	2	29	0	0	2	15	2 (2;2)
Salary is paid by an external partner (hospital organizes only the infrastructure)	0	0	0	0	0	0	0 (0;0)
I don't know	0	0	0	0	0	0	0 (0;0)
How is the wage of the external physicians compared to the senior physicians of the ED? N = 7 (Pediatric ED), N = 6 (Adult ED), N = 13 (Total)							
Much higher	4	57	4	67	8	62	10 (-28;47)
Higher	2	29	1	17	3	23	12 (-25;49)
Same	0	0	0	0	0	0	0 (0;0)
Lower	0	0	0	0	0	0	0 (0;0)
Much lower	0	0	0	0	0	0	0 (0;0)
I don't know	1	14	0	0	1	8	14 (-20;48)
In your opinion, what is the limiting factor that prevents more patients from being treated in the "FT"? (multiple answers)							
Too few medical staff	10	63	7	32	17	45	31 (-8;69)
Too few caregivers	4	25	1	5	5	13	20 (-9;50)
Too few patients	0	0	2	9	2	5	9 (-12;30)
Missing treatment bunks/places	2	13	7	32	9	24	19 (-11;49)
Organizational problems	3	19	5	23	8	21	4 (-26;34)

Pediatric FTs tend to see a higher volume of patients, with 63% (10/26) treating 15–30 patients in an 8-hour period, whereas only 23% (5/22) of adult FTs see more than 15 patients in the same timeframe.

Most FTs have dedicated spaces within EDs (79%, 30/38), but some also use general emergency bunks, i.e. dedicated treatment spaces or beds within the ED used for patient care, (26%, 10/38) and treatment bunks in other departments (21%, 8/38). A small number (11%, 4/38) operate in external buildings. There is little difference between pediatric and adult FTs in terms of physical setup.

Operational hours also vary, with pediatric FTs often open longer and later into the evening; 82% (13/26) of pediatric FTs operate until 10 p.m., compared to 64% (14/22; difference 18%, 95% CI –6%;40%) of adult ones.

Physician remuneration

For the majority of doctors employed by their hospitals and serving in FT roles, compensation is based on their standard working hours, with 95% (35/38) receiving their usual salary. External doctors, on the other hand, predominantly have fixed compensation structures, with 77% (10/13) earning either a set salary per shift or a fixed hourly rate. Within pediatric clinics, some (29%, 2/7) are remunerated based on the billable amount of medical services generated (“Tarmed tax points”), without a guaranteed base salary.

The compensation for external physicians is higher than that of regular staff, with 62% (8/13) receiving pay much higher than that of a senior physician, and 23% (3/13) earning somewhat higher salaries. Conclusively, staffing costs for external personnel are higher than for internal staff.

Operational barriers

The primary constraint preventing the treatment of more patients in FTs is frequently attributed to a shortage of medical staff available at the department, with 45% (17/38) of respondents identifying this as a key issue. This challenge is particularly pronounced in pediatric FTs, where 63% (10/26) cite staff shortages, compared to 32% (7/22; difference 31%, 95% CI –8%;69%) in adult FTs. Adult FTs specifically highlighted a scarcity of treatment bunks (32%, 7/22) as a limiting factor, whereas pediatric FTs more often pointed to a lack of nursing staff (25%, 4/26). Additionally, organizational barriers, such as the complexity of accessing the service and triage difficulties, were acknowledged by 21% (8/38) of the surveyed departments as contributing to the limitations in FT patient throughput.

Satisfaction of survey respondents with FT structure, perceived opportunities for improvement

Table 4 illustrates the levels of satisfaction, along with the perceived advantages and disadvantages of the FT

system. The majority of FTs report a satisfaction level ranging from “satisfied” (55%, 21/38) to “very satisfied” (11%, 4/38) with their existing setup. Nevertheless, a small fraction, 14% (5/38), rate their system as “unsatisfactory” to “completely unsatisfactory.”

The surveyed FTs predominantly recognize the enhanced allocation of personnel resources as a significant benefit with 63% (24/38) endorsing this view. This advantage is particularly highlighted in pediatric FTs, where 75% (12/26) acknowledge it, compared to 55% (12/22) in adult FTs (difference 20%, 95% CI –11;51). Additionally, 55% (21/38) of the respondents view improved patient flow as a key advantage, with this aspect being more frequently noted in adult FTs (68%, 15/22) than in pediatric ones (38%, 6/26; difference 18%, 95% CI –9%, 45%). Enhancements in both patient and team satisfaction, along with the flexibility of FT organization, are also recognized as benefits, especially in pediatric settings.

Conversely, the most significant challenges or areas for improvement are seen in the lack of sufficient human resources, with 58% (22/38) of the respondents highlighting this issue. Insufficient structural resources and organizational difficulties (e.g. managing patient flow during peak hours, integrating external staff into hospital workflows, identifying and redirecting patients who require more comprehensive care from FT areas back to the ED, and addressing the misuse of FT areas for overspill elective specialist clinic follow-up appointments) are each cited by 29% (11/38) as major hurdles. Additionally, 24% (9/38) of the respondents identify a challenge in incorporating external staff into FT services due to differences in medical practice between hospital-based and practice-based physicians.

Discussion

Main findings

Despite similar absolute FT patient numbers in pediatric and adult EDs, pediatric clinics run significantly fewer FTs. In Switzerland, the organization of the majority of FTs (location, staffing, and remuneration) is primarily undertaken by EDs, independent of external structural and personnel resources. The majority of surveyed EDs are “satisfied” or even “highly satisfied” with their current FT system, resulting in a perceived improvement in quality of care. However, the main barrier to establishing and/or extending FTs is staff recruitment, due to the lack of financial incentives. These challenges stem from managers’ difficulties in providing internal staff with bonuses for after-work hours, leading to reliance on additional staff. Respondents report that recruiting external staff is particularly challenging due to the inability to offer competitive remuneration. This discrepancy highlights the value placed on external expertise and the financial incentives needed to recruit external staff to work in FT roles.

Table 4 Advantages and disadvantages of the FT

Evaluation, advantages and disadvantages/improvements	Pediatric ED (N= 16)	%	Adult ED (N= 22)	%	Total (N= 38)	%	
	n		n		n		
How do you rate your current “FT”?							
1 (= very good)	1	6	3	14	4	11	−8 (−26;10)
2	10	63	11	50	21	55	13 (−15;41)
3	3	19	5	23	8	21	−4 (−28;20)
4	2	13	2	9	4	11	4 (−17;25)
5 (= completely insufficient)	0	0	1	5	1	3	−5 (−25;15)
Where do you see the advantages of your current “FT”?							
Improved allocation of personnel resources	12	75	12	55	24	63	20 (−11;51)
Improved patient flow	8	50	15	68	23	61	−18 (−45;9)
Improved patient satisfaction	3	19	5	23	8	21	−4 (−28;20)
Improved team satisfaction	3	19	5	23	8	21	4 (−28;20)
Flexible organization	9	56	5	23	14	37	33 (3;63)
What are the potential areas for improvement? What are the disadvantages?							
Insufficient human resources	9	56	13	59	22	58	−3 (−32;26)
Organizational difficulties	6	38	6	27	12	32	11 (−17;39)
Insufficient structural resources	3	19	8	36	11	29	−17 (−45;11)
Different understanding of service, salary and medical care between in-house doctors and GPs	7	44	5	23	12	32	21 (−9;51)
Incorrect triage	4	25	2	9	6	16	16 (−7;39)
High financial outlay	2	13	1	5	3	8	8 (−12;28)
Pull effect due to good, rapid patient care	2	13	1	5	3	8	8 (−12;28)

Differences between pediatric and adult EDs

The study identifies several differences between adult and pediatric EDs in the organization and operation of FTs. FTs are more prevalent in adult EDs compared to pediatric EDs, largely due to structural and personnel constraints in pediatric settings. Pediatric EDs tend to manage higher proportions of potential FT patients, with comparable absolute numbers of FT patients between the two settings. Adult FTs rely more on residents and surgical specialists, while pediatric FTs predominantly employ pediatricians and medical practice assistants. Operational hours also vary, with pediatric FTs often open later into the evening. Key barriers, such as staff shortages, are more acute in pediatric FTs, reflecting distinct operational challenges faced by the two settings.

Interpretation of findings and comparison with existing literature

The case numbers of adult EDs are significantly higher than the ones of pediatric EDs. However, it is noteworthy that the absolute number of FT patients is roughly similar for both, as the percentage of FT patients is significantly higher in pediatrics. This is consistent with findings from other studies [14–17]. However, it is evident that FTs are less prevalent in pediatric EDs, primarily due to constraints in structural and personnel resources. A possible explanation could be that the smaller size of pediatric

EDs contributes to reduced adaptability in terms of staff allocation and spatial reconfiguration.

The vast majority of FTs are organized by the EDs themselves and staffed by fixed-contract emergency personnel. The main reason appears to be lower staffing costs for internal staff compared to external or moonlighting personnel. In addition, internal personnel can be adapted more flexibly to changes in staffing needs secondary to fluctuating patient volumes, which is particularly relevant in pediatric EDs.

Few FTs cooperate with general practitioners (GPs), as there are various perceived and reported challenges in this model, such as varying perspectives on service provision, remuneration, and medical practices between in-house physicians and GPs. Scantlebury et al. have reported the same challenges from York, UK [18]. The transition for GPs from the role of a “family doctor” to that of an “emergency doctor” is particularly demanding, given differences in risk tolerance and handling diagnostic uncertainties [19]. Research conducted in Belgium indicates that embedding FTs within EDs and having them managed by GPs garners support from GPs, patients, and ED physicians, provided there is a clearly defined role and a degree of autonomy. However, only a minority (30%) of GPs feel adequately prepared to work in the ED [20]. Therefore, involving GPs in ED-embedded FTs may not offer a universal solution, but it can be an opportunity and an important resource.

Alternative staffing models include nurse practitioners (NPs), which are routinely part of EDs in the United States and Australia [21–25]. However, despite these successes, NPs are seldom utilized in Switzerland, as there is currently no accreditation and billing framework for ED NP services in the country; an aspect that warrants further investigation [26, 27]. Considering the favorable outcomes observed in other nations, such as increased patient satisfaction without compromising the quality of care, the integration of NPs into FTs could hold promise for the future of healthcare delivery [23, 24].

Attending physicians are more frequently assigned to pediatric FTs than to those for adults, reflecting a unique need in pediatric urgent care. A possible explanation might be that seasoned physicians are required in these settings to provide both reassurance and expert guidance to worried parents. Parents visiting pediatric EDs are often worried, perceiving their children's low-acuity conditions as grave [14, 28–31]. Furthermore, the reliance on interns and residents in these settings poses challenges, as their involvement necessitates close supervision [4], potentially disrupting patient flow due to the high volume of pediatric FT. This dynamic is corroborated by Sanchez and Hirzel's study in Switzerland, which echoes the complexities and demands of pediatric emergency care [4].

Operational barriers

The escalating shortage of GPs and pediatricians in Switzerland is projected to precipitate a surge in the number of unscheduled low-acuity consultations in EDs. Strategies must be formulated to address this demand, thereby preserving ED resources. Moreover, there is an increasing use of FT services for outpatient follow-up, primarily attributed to the scarcity of available appointments with family doctors, pediatricians, and outpatient clinics [1]. A possible solution would be the expansion of FT services, encompassing extending operational hours, enlarging physical spaces, and augmenting staffing levels. Notably, a significant proportion of EDs express a desire to upscale their capacities to accommodate this growing demand. However, the establishment of such services faces significant hurdles, as highlighted by the operational difficulties reported in our survey. Organizational bottlenecks include resource misalignment with peak demand, misuse of FTs for specialist follow-ups, and unclear role distribution among ER doctors, FT GPs, and specialists [19].

Central to these challenges is the inability to recruit adequate staff — particularly acute in pediatrics — organizational bottlenecks and limited structural resources, reflecting broader systemic issues within the Swiss healthcare landscape [32]. Adequate staffing has been reported as a crucial factor for running a FT [33, 34]. Regarding staff recruitment, managers face systemic

barriers to offer competitive staff compensation. FTs frequently operate beyond regular hours, necessitating the provision of higher salary rates for staff due to the commitment to after-hours work. These services demand experienced personnel to ensure the quality of care. However, the current framework for financial reimbursements for after-hours FT services is inadequately structured, failing to offer sufficient financial incentives to attract and retain the necessary staffing. These constraints not only hinder the operational efficiency of healthcare services but also compromise the quality of patient care. This complex interplay of systemic issues requires comprehensive solutions, which could include adjustments to insurance reimbursement rates for FT services and structural or governmental support to foster public-private partnerships for establishing and sustaining FT services.

The majority of EDs surveyed are “satisfied” or “highly satisfied” with their current FT system. The main reported advantages of FT were targeted staff deployment and improved patient flow, which collectively contribute to increased satisfaction among both patients and staff, corroborating findings from other research [25, 35, 36]. Operational FT systems have been linked to significant improvements in ED quality metrics, such as decreased waiting times, shorter ED and hospital length of stay, and reduced rates of patients leaving without being seen, all achieved without compromising care quality in terms of revisits and morbidity and mortality rates [25, 37, 38]. However, the effectiveness of FT systems in mitigating overall ED overcrowding appears limited [39, 40]. Rather, overcrowding has been overwhelmingly linked to hospital admission capacities. This suggests that while FTs offer considerable improvements in specific operational metrics, their impact on the larger issue of ED overcrowding requires a more holistic approach, considering hospital-wide capacity and resource management.

Possible solutions to operational barriers

To address the identified challenges in FT implementation, several actionable solutions are proposed. First, at the health systems level, expanding financial incentives for EDs to operate FTs is critical. This will be the prerequisite to attracting and retaining qualified staff, particularly in pediatric settings, where shortages are most acute. Specific financial models for staffing could include competitive salaries, performance-based bonuses, and additional compensation for after-hours work. Second, exploring alternative staffing models, such as integrating NPs or other advanced practice providers, could alleviate staffing shortages while maintaining quality of care. Given the success of NP roles in other countries, Switzerland could develop accreditation and billing frameworks to facilitate their inclusion in FTs. Third, leveraging technology solutions, such as digital triage systems and

automated patient flow management tools, can optimize resource allocation and reduce organizational bottlenecks. Additionally, fostering collaborations with external partners, such as general practitioners and private clinics, could provide supplemental staffing support during peak times. These collaborations would likely require incentives and support at the health system level. Lastly, increased investment in physical infrastructure, such as dedicated FT spaces and flexible scheduling models could further enhance the efficiency and scalability of FTs.

Limitations

The survey is potentially biased towards larger, urban adult EDs, as it exclusively included adult EDs that also operate a pediatric division. Responses were primarily obtained from the physician leadership of these EDs, which may not fully represent the perspectives of other staff members such as nurses and administrators, particularly on operational matters. Furthermore, the study was conducted without access to exact quantitative data and hence is limited to perceptions. In addition, formal validation of the questionnaire was not possible due to the limited number of target participants. As a result, only descriptive statistics are presented.

Although our survey was limited to Swiss EDs, some findings may be generalizable. However, the lack of literature on organizational challenges in FT settings limits direct comparisons. Adequate staffing remains the primary challenge for FT implementation, a concern shared globally. While integrating GPs and NPs into ED workflows shows promise, it also presents specific challenges that need to be addressed such as differences in workflow between GPs and ED providers and training and licensing issues for NPs.

Conclusion

This study provides a comprehensive overview of FT processes in a country where interdisciplinary emergency medicine services are relatively young and hence contributes important insights for the organization of these services in healthcare contexts where emergency medicine is growing as a subspecialty. Implementing FT systems in Swiss EDs is perceived by heads of departments to improve patient care and operational efficiency. The study highlights some important barriers to implementation that are important considerations for operational managers looking to adopt FT systems, particularly in pediatric EDs. These include financial and organizational constraints, primarily due to inadequate staffing incentives. Addressing these challenges necessitates a collective effort to reform the health system and financial frameworks, enabling better support for ED operations and staffing. Realigning financial incentives with the operational needs of EDs is required for the broader implementation of FT systems within ED care processes.

Abbreviations

ED	Emergency department
FT	Fast Track
GP	General practitioner
NP	Nurse practitioner
MPA	Medical Practice Assistant

Supplementary Information

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Supplementary Material 1. Questions asked in the online survey (English version)

Supplementary Material 2. CROSS checklist for reporting of survey studies

Supplementary Material 3. CHERRIES checklist for reporting results of the internet e-survey

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Authors' contributions

KK proposed the study, designed the study, analysed the data, interpreted the results, wrote the paper. FB designed the study, acquired the data, analysed the data, interpreted the results, made a literature review, wrote the paper. RH acquired the data, analysed the data, interpreted the results, made a literature review, wrote the paper. TS, MS, FS, MT, GG, AD, RV, DK: made critical revisions to the paper. All authors read and approved the manuscript.

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Data availability

The datasets generated and analysed during the current study is not publicly available due to confidentiality of the individual results but are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

We sought ethical approval from the Bern cantonal ethics committee ("Ethikkommission für die Forschung am Menschen Bern", REF Req-2022-01237). The need for participant consent was waived according to national regulations (Swiss Federal Human Research Act). Furthermore, our study is in compliance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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References

- Jenni OG, Sennhauser FH. Child health care in Switzerland. *J Pediatr*. 2016;177:S203–12.
- Jörg R, Haldimann L, Rozsnyai Z, et Streit S. Soins ambulatoires de premier recours Dans Le Canton de Berne. Différences régionales Dans L'accès aux Soins de premier recours (Obsan bulletin 03/2023). Neuchâtel: Schweizerisches Gesundheitsobservatorium (Obsan); 2023.
- Diserens L, Egli L, Fustinoni S, Santos-Eggimann B, Staeger P, Hugli O. Emergency department visits for non-life-threatening conditions: evolution over 13 years in a Swiss urban teaching hospital. *Swiss Med Wkly*. 2015;145. <https://doi.org/10.4414/smw.2015.14123>.
- Sanchez B, Hirzel AH, Bingisser R, Ciurea A, Exadaktylos A, Lehmann B, et al. State of emergency medicine in Switzerland: A National profile of emergency departments in 2006. *Int J Emerg Med*. 2013;6(1). <https://doi.org/10.1186/1865-1380-6-23>.
- Güntensperger U, Pinzello-Hürlimann R, Martina B, Ciurea A, Muff B, Gutzwiller JP. Primary care emergency services utilization in German-speaking Switzerland: a population-based cross-sectional study. *Swiss Med Weekly: Official J Swiss Soc Infect Dis Swiss Soc Intern Med Swiss Soc Pneumology*. 2010;140. <https://doi.org/10.4414/smw.2010.13111>.
- Bardelli P, Kaplan V. Non-urgent encounters in a Swiss medical emergency unit. *Swiss Med Wkly*. 2013;143. <https://doi.org/10.4414/smw.2013.13760>.
- Müller U, Winterhalder R, Businger A, Zimmermann H, Exadaktylos AK. Why do walk-in patients prefer a busy urban emergency department during office hours? A pilot survey of 200 consecutive patients from Switzerland. *Swiss Med Wkly*. 2012;142:w13565.
- Chmiel C, Wang M, Sidler P, Eichler K, Rosemann T, Senn O. Implementation of a hospital-integrated general practice—a successful way to reduce the burden of inappropriate emergency-department use. *Swiss Med Wkly*. 2016;146:w14284.
- Vilpert S. Konsultationen in schweizer Notfall-stationen (Obsan bulletin 3/2013). Neuchâtel: Schweizerisches Gesundheitsobservatorium (Obsan); 2013.
- Rathlev NK, Holt NM, Harbertson CA, Hettler J, Reznick MA, Shiu-Lin T, et al. 2017 AAAEM benchmarking survey comparing pediatric and adult academic emergency departments. *Pediatr Emerg Care*. 2021;37(12):E1278–84.
- WHO. Service availability and readiness assessment (SARA): World Health Organization. 2015. Available from: <https://www.who.int/data/data-collection-tools/service-availability-and-readiness-assessment-sara>.
- Eysenbach G. Improving the quality of web surveys: the checklist for reporting results of internet E-Surveys (CHERRIES). *J Med Internet Res*. 2004;6(3). <https://doi.org/10.2196/jmir.6.3.e34>.
- Sharma A, Minh Duc NT, Luu Lam Thang T, Nam NH, Ng SJ, Abbas KS, et al. A Consensus-Based checklist for reporting of survey studies (CROSS). *J Gen Intern Med*. 2021;36(10):3179–87.
- Burokienė S, Raistenskis J, Burokaitė E, Čerkauskienė R, Usonis V. Factors determining parents' decisions to bring their children to the pediatric emergency department for a minor illness. *Med Sci Monit*. 2017;23:4141–8.
- Alele FO, Emeto TI, Callander EJ, Watt K. Non-urgent paediatric emergency department presentation: A systematic review. *J Paediatr Child Health*. 2019;55(3):271–7.
- Jaboyedoff M, Starvaggi C, Suris JC, Kuehni CE, Gehri M, Keitel K, et al. Characteristics of low-acuity paediatric emergency department consultations in two tertiary hospitals in Switzerland: a retrospective observational study. *BMJ Paediatrics Open*. 2021;5(1). <https://doi.org/10.1136/bmjpo-2021-001267>.
- Merçay C. Le recours aux services d'urgence En Suisse. Description des différences cantonales (Obsan dossier 64). Neuchâtel: Observatoire suisse de la santé (Obsan); 2018.
- Scantlebury A, Adamson J, Salisbury C, Brant H, Anderson H, Baxter H et al. Do general practitioners working in or alongside the emergency department improve clinical outcomes or experience? A mixed-methods study. *BMJ Open*. 2022;12(9). <https://doi.org/10.1136/bmjopen-2022-063495>.
- Cooper A, Davies F, Edwards M, Anderson P, Carson-Stevens A, Cooke MW et al. The impact of general practitioners working in or alongside emergency departments: A rapid realist review. *BMJ Open* 2019;9(4).
- Schoenmakers B, Van Crielinge J, Boeve T, Wilms J, Van Der Mullen C, Sabbe M. Co-location of out of hours primary care and emergency department in Belgium: patients' and physicians' view. *BMC Health Serv Res*. 2021;21(1). <http://doi.org/10.1186/s12913-021-06281-y>.
- Gardner G, Gardner A, Middleton S, Considine J, Fitzgerald G, Christofis L, et al. Mapping workforce configuration and operational models in Australian emergency departments: A National survey. *Aust Health Rev*. 2018;42(3):340–7.
- Wood C, Wettlaufer J, Shaha SH, Lillis K. Nurse practitioner roles in pediatric emergency departments: A National survey. *Pediatr Emerg Care*. 2010;26(6):406–7.
- Lutze M, Ross M, Chu M, Green T, Dinh M. Patient perceptions of emergency department fast track: A prospective pilot study comparing two models of care. *Australasian Emerg Nurs J*. 2014;17(3):112–8.
- Dinh M, Walker A, Parameswaran A, Enright N. Evaluating the quality of care delivered by an emergency department fast track unit with both nurse practitioners and Doctors. *Australasian Emerg Nurs J*. 2012;15(4):188–94.
- Nash K, Zachariah B, Nitschmann J, Psencik B. Evaluation of the fast track unit of a university emergency department. *J Emerg Nurs*. 2007;33(1):14–20.
- Minotti B, Blättler-Remund T, Sieber R, Tabakovic S. Nurse practitioners in emergency medicine: the Swiss experience. *Eur J Emerg Med*. 2020;27(1):7–8.
- Gysin S, Sottas B, Odermatt M, Essig S. Advanced practice nurses' and general practitioners' first experiences with introducing the advanced practice nurse role to Swiss primary care: a qualitative study. *BMC Fam Pract*. 2019;20(1). <http://doi.org/10.1186/s12875-019-1055-z>.
- Williams A, O'Rourke P, Keogh S. Making choices: why parents present to the emergency department for non-urgent care. *Arch Dis Child*. 2009;94(10):817–20.
- Biagioli V, Pol A, Gawronski O, Carlin C, Cirulli L, Piga S, et al. Pediatric patients accessing accident and emergency department (A&E) for non-urgent treatment: why do parents take their children to the A&E? *Int Emerg Nurs*. 2021;58. <https://doi.org/10.1016/j.ienj.2021.101053>.
- McLauchlan K, Ramlakhan S, Irving A. Why do parents present to the paediatric emergency department with conditions suitable for management in less acute settings? A qualitative study. *Eur J Emerg Med*. 2020;27(1):40–5.
- Pehlivanurk-Kizilkan M, Ozsezen B, Batu ED. Factors affecting nonurgent pediatric emergency department visits and parental emergency overestimation. *Pediatr Emerg Care*. 2022;38(6):264–8.
- Hostettler S, Kraft E. Geringe Hausarzttdichte und grosse Auslandsabhängigkeit FMH-Ärztstatistik 2022. *Schweizerische Ärztezeitung*. 2023;104(12):24–9.
- Martin HA, Noble M, Wilmarth J. Improving patient flow and decreasing patient length of stay in the pediatric emergency department through implementation of a fast track. *Adv Emerg Nurs J*. 2021;43(2):162–9.
- Lam D, Braund C, Schmidt S, Johnson B, Spencer SP, Agbim C. How super is supertrack? Expediting care of Fast-track patients through a pediatric emergency department. *Pediatr Qual Saf*. 2024;9(5):e770.
- Dinh MM, Enright N, Walker A, Parameswaran A, Chu M. Determinants of patient satisfaction in an Australian emergency department fast-track setting. *Emerg Med J*. 2013;30(10):824–7.
- Hwang CE, Lipman GS, Kane M. Effect of an emergency department fast track on press-ganey patient satisfaction scores. *Western J Emerg Med*. 2015;16(1):34–8.
- Sanchez M, Smally AJ, Grant RJ, Jacobs LM. Effects of a fast-track area on emergency department performance. *J Emerg Med*. 2006;31(1):117–20.
- Canellas M, Michael S, Kotkowski K, Reznick M. Operations factors associated with emergency department length of stay: analysis of a National operations database. *Western J Emerg Med*. 2023;24(2):178–84.
- Hoot NR, Aronsky D. Systematic review of emergency department crowding: causes, effects, and solutions. *Ann Emerg Med*. 2008;52(2):126–e361.
- Van Der Linden MC, Van Loon-Van Gaalen M, Richards JR, Van Woerden G, Van Der Linden N. Effects of process changes on emergency department crowding in a changing world: an interrupted time-series analysis. *Int J Emerg Med*. 2023;16(1). <https://doi.org/10.1186/s12245-023-00479-z>.

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