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Running against the clock: a qualitative study of internal medicine residents' work experience

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Summary

AIM OF THE STUDY: While hospitals are adopting strategies designed to increase the overall efficiency of the healthcare system, physicians are facing expanding requirements. Such changes in work environment add new psychosocial and physical stressors. Building on a previous quantitative time-motion study, we conducted a qualitative study to better understand the work experience of internal medicine residents.

METHODS: The study used a qualitative description approach, and was based on focus group discussions with residents. Data were analysed using reflexive thematic analysis. The study was conducted among all residents of the Internal Medicine division of a tertiary university hospital in Switzerland.

RESULTS: Time emerged as the major determinant of residents' daily experience, which residents want to waste on no account. Shifts are perceived as a constraining succession of distinct periods, with little room for adjustments. Moreover, residents feel held back and distracted in their progression toward the end of the shift. Under time pressure, some essential professional activities, such as caring for patients and families, dealing with medical complications and talking with consultants, may be experienced as unexpected undesirable bumps on the road. Residents describe "running through" a structured day, scattered with obstacles, and resorting to "tricks of the trade" in an attempt to influence the course of the shift.

CONCLUSIONS: Time constraints are not new to medicine. However, our findings outline how time has become a constant preoccupation for internal medicine residents, permeating their daily work experience. This changing relationship with time carries the risk of undermining the foundations of clinical medicine and challenges the ability of hospitals to preserve the "sense of the profession".

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Introduction

Healthcare systems are increasingly forced to adapt their structures in response to evolving epidemiological, social, technical, economic and organisational challenges. Rising costs, attributed to multimorbidity, chronic diseases and expensive technologies or pharmaceuticals, as well as a growing emphasis on efficiency, have led healthcare institutions to adopt business management techniques imported from industry [1–6]. Concurrently, residents' working hours have become more strictly regulated in many countries, with significant implications for postgraduate training and work organisation within hospitals [7]. Switzerland, like other Northern European countries [8], has gradually aligned with the European Working Time Directive, limiting residents' maximum working hours to 50h/week. Furthermore, implementation of electronic health records (EHR) and growing administrative obligations have dramatically impacted residents' daily work [9]. The combination of these changes in physicians' work environment add new psychosocial, ergonomic and physical stressors with potential consequences on physicians' well-being and job satisfaction [4, 10].

In 2015, about 10 years after the implementation of the regulation of duty hours, a time-motion study was conducted in the Internal Medicine Division (IMD) of Lausanne University Hospital as a first attempt to better understand the effect of these evolutions on the daily work of medical residents. It showed that residents spend a large part of their day on computers, executing administrative or documentation tasks and frequently hopping from one task to another [11, 12]. In response, the IMD initiated a series of reforms to improve residents' efficiency and satisfaction, as well as interprofessional collaboration. These included increasing administrative support [13] and reorganising the daily schedule.

In 2018, as part of a broader institutional project for the study of the residents' work day, we undertook a qualitative investigation to shed light on the residents' work experience. The aim was to gain deeper understanding of

the current environment of internal medicine residents and how it shapes their professional daily life. We consider such an understanding as foundational for efforts aiming to improve the practice and organisation of hospital internal medicine.

Materials and methods

Study design and setting

This study used a qualitative description approach to explore residents' work experience [14], which is particularly suited to comprehending participants' perspectives [15]. Focus group discussions were performed with IMD residents of Lausanne University Hospital in 2018 (pre-COVID-19 period).

The IMD admits 6200 patients per year and has 170 beds. Eight senior physicians supervise 15 chief residents and up to 45 residents. With 47-hour weeks, residents' work schedule complies with the national standard. Each resident cares for 8 to 10 patients. Postgraduate training in Switzerland lasts 5 years and the mean level of post-graduate training of IMD residents was 3.3 years.

Participants and data collection

All residents participating in the institutional project (39) were invited, and 36 (92%) agreed to participate in our qualitative investigation. 56% of the initial sample were female, mean age 29.9 years, and mean postgraduate clinical experience was 39 months (SD ± 17); 67% graduated from a Swiss University. The importance of participating was explained to the residents by senior staff members of internal medicine, who endorsed the study and motivated them to take part in the focus groups. These took place between 12:00 and 14:00 (a period usually dedicated to lunch and teaching rounds), with a catered lunch provided.

We explored residents' subjective experience of their daily work through four focus groups attended by different individuals each time. This type of group interview generates data by engaging participants in discussions focused on predetermined issues. This interactive co-constructive process is considered the "hallmark of focus group research" [16].

A social scientist (CB) and a consultation-liaison psychiatrist (FS), with no professional ties to the residents, facilitated the focus groups using a detailed discussion guide. The guide was pilot tested with five chief residents of the IMD. It investigated residents' experience from different angles, including experience of the work organisation and environment, challenges faced during a shift (barriers and resources), as well as description and experience of a typical day in the IMD. Two facilitators ensured that every resident participated in the discussion and that the complete set of topics was covered. Discussions (range 80–95 minutes) were audiotaped and transcribed verbatim. Author CB reviewed each transcript.

Data analysis

Data were analysed using a reflexive thematic analysis [17, 18]. The first step involves familiarisation with the data; four of the authors (CB, MS, FS, and MM) read the transcripts multiple times, individually and in team meetings. They immersed themselves in the material to get an initial sense of the content. Initial coding was carried out by CB, who assigned labels to text segments of the transcripts and developed themes related to key aspects of the residents' daily professional life. The analysis process aimed to be reflexive. CB, MS, FS, and MM focused on making sense of the data, looking for patterns capturing residents' experience, in their own terms. They worked by elaborating on the ideas and experiences conveyed by the participants, constantly discussing their impressions, and gradually building up an understanding of the residents' daily professional life.

Participant quotations are presented in the results section to illustrate the findings.

The research team was interdisciplinary: social sciences (CB), consultation-liaison psychiatry (FS, MS), internal medicine and medical education (MM). The other authors provided constant feedback on the findings and their interpretations, enabling in-depth and thorough discussions; their background is internal medicine and business administration (AG and VK), internal medicine and medical education (DG), and internal medicine for all other authors.

This study fulfils the COREQ checklist criteria for reporting of qualitative research [19].

The Ethics Committee of Canton Vaud exempted the study from approval; however, participants signed an informed consent form. The study protocol was registered on the ISRCTN-registry (number: ISRCTN69703381).

Results

Time emerged as a major pervasive theme in the data. This does not mean that there were no other themes in the analysis, but these other themes were shaped by time, which thus was a red thread coloring the narratives. Time is a commodity always about to run out and the object of residents' perpetual concern. Throughout the day, time is constantly present in the back of their mind, whether they are working with the EHR, interacting with colleagues, patients and families, performing clinical procedures, receiving supervised training, or considering whether or not to attend mandatory formal teaching activities. Moreover, as the day progresses, time threatens to turn into overtime. Residents are not only keen to preserve some time off, but also perceive that they are expected to abide by the rules and avoid overtime.

In our analysis, the daily work experience was found to be structured along two temporal dimensions. First, the day is made of a succession of distinct periods, each with its own demands and schedule, over which residents have very little leverage. Second, residents feel held back, distracted, and confronted to obstacles preventing them from getting to the end of their workday.

Running through a structured but constraining day

The daily schedule is perceived as highly structured, with a clear, defined sequence of specific tasks. This influences how time is experienced in the hospital.

Residents sometimes feel that they lack time to complete the tasks assigned to each period:

[…] We have to work out how to manage our time. […] Sometimes, it is a bit stressful, either you finish the ward round and you don't eat—or you eat, but then things remain unfinished and you never know what may happen later on […] (FG1)

Residents are torn between finishing all tasks related to ward rounds or proceeding to the next period. However, they can also feel stuck and idle, unable to move on, even though they know that they have other things to do:

[...] I've had days when I really had lots to do, […] we rushed to eat, and had the 1:00 pm teaching round […] then we had the radiology meeting, which dragged on because the radiologist was not there on time, and in parallel, we had 50 calls to be made and so many things to do, but we couldn't do them […] (FG2)

With the progression of the day, residents may feel increasing pressure, as preoccupations about things left undone spill over from one period to the next. Thus, they struggle to retain control and to avoid being overwhelmed:

[..] I start full of good will and hope that the day will be rather quiet and go well and that I will respect all these constraints. As the day progresses, we realize that small things spill over, but we say to ourselves: 'it will be fine, I'll take some time here and there'. And at the end of the day, we realize everything is overflowing (FG1)

Participants describe constant concern about overtime, in the context of a working day supposed to be limited to 9.5 hours, in order to respect the legal limitation of 47 weekly hours. While they are keen to preserve some free time in the evening, they know that overtime is to be avoided as management strives to respect legal limitations. Doing tasks within the allotted time is thus perceived as a success in itself, a testimony of efficiency. In such an environment, the perfect day in the hospital is one during which all the various tasks have been completed, each within the dedicated period.

[..] when we manage to do everything on time and go home, that's the satisfaction of being efficient. But it rarely happens (FG2)

Indeed, the problem is that, as another resident said, such a perfect day would be "*a day without any patient admission, no complication, and no patient relatives.*" (FG2). In other words, it seems that some of the core components of working in a hospital ward are among the many "obstacles" getting in residents' way , which we address in the next section.

Running through obstacles

We now come to the second dimension of the time experience: being slowed down, distracted and blocked in the race towards the end of the shift.

To begin with, residents have to fight with the EHR:

[The EHR] it is a limitation in our day, sometimes we lose everything, so we have to type everything again; there are times when we have to think for 5 minutes about how to feed the text into the space limitations […] I once lost a letter I had been working on for 3 hours, IT said, 'I don't know where it is' […] (FG4)

Other difficulties are experienced in the interaction with nurses, colleagues, patients, and their families. For instance, residents complain that nurses are hard to reach, because they do not carry mobile phones:

[…] we always have to chase them, we ask their colleagues, they say 'I don't know where she is', so we look for a nurse for 10 minutes to ask her something […] (FG2)

In contrast, residents carry mobile phones and feel they must always be available for nurses. Their impression is that nurses do not hesitate to interrupt them, as if they were always available, *"at their service*."

Nurses should learn to make a list of non-urgent things, and call once a day […] we're in the middle of doing something, we get a call, then we're interrupted, we go back to our task, we can't remember where we were any more, it's always a bit like that (FG3)

The collaboration with consultant physicians is sometimes also perceived as problematic. They have their own schedule, which may not suit the resident. Moreover, their recommendations can raise new issues to deal with. Therefore, for residents, soliciting them entails a loss of control over the course of the day:

[The answer] often comes at the end of the day, and then, we have to address the issues at the end of the day, and everything is postponed to the evening, if they ask for labs or other things, it comes at 5 or 6 pm (FG3)

Interactions with patients and families are sometimes described as derailing residents from their optimal course, especially when time is running short and people are talkative. In such circumstances, discussions are experienced as a distraction from more pressing tasks:

I think it's sad, as soon as a patient starts talking a little too much, instead of saying 'oh great, I can talk to someone', we think, 'oh no, why are you talking to me, shut up'. It doesn't make sense (FG2)

[in the afternoon] the families come up and that's annoying because we know there will still be paperwork to be done, and each small delay is annoying; well I'm not too nice at the end of the afternoon (FG1)

Our data suggest that any unanticipated clinical issue can be experienced as a setback, a problem to be hastily fixed, circumvented or avoided. Even discussing with patients and families may be perceived as coming "in excess to the workload", as expressed by one participant. Complex medical situations, psychological problems, poor response to treatment, or a deteriorating clinical course: all may appear as unexpected, bothersome accidents in a day "not designed for the advent of complications" *(FG2)*:

I find it somewhat irritating, when at the end of the afternoon, at 4 or 4:30, all of a sudden a patient deteriorates, and it's still a time slot when we have to respond. And then it eats up all the remaining time we have left to do the paperwork, which has to be postponed (FG3)

"Dealing with it": the tricks of the trade

Facing such daunting constraints, residents deploy strategies to mitigate the pressure of time. They do not always follow the rules, even those supposed to ease the workflow. For instance, residents may find it inefficient to delegate tasks to the administrative staff and therefore prefer to do things themselves.

Residents may avoid important but optional activities that they consider time-consuming. For instance, they may renounce highly valued teaching opportunities, such as technical procedures under supervision:

Sometimes there's a procedure to do, there's an admission to see, there's an umpteenth consultant – well, I limit my time, I don't ask too many questions aiming at receiving teaching, because I know I must move on. (FG1)

Other components of clinical practice that residents sometimes choose to consider as optional due to time constraints, include interactions with patients and families:

Yes, we often cut [talkative patients] short, 'yes, of course, we'll talk about that later' […] and sometimes people will comment on that, and then you feel bad […] We see a [patient's] family, if they have some more questions, we begin to be a bit impatient, irritated, say 'yes, we'll talk about it tomorrow.' […] (e27, FG2)

Thus, residents develop strategies to manage their time as a scarce resource to be spared and invested wisely. Moreover, they are also concerned about their colleagues' own time capital and take care not to make things more difficult for them. For instance, they shorten discussions with supervisors, so the latter can remain available for other residents too. An implicit norm of curtesy and sense of solidarity seem to underlie such a behaviour. However, it is also a long-term, personal strategy:

A colleague had been writing down all her overtime, and she had a lot of it […] in the end they said, 'listen, you have 2 weeks of compensation' […] now she feels guilty and all her colleagues have to take on her patients (FG1)

Discussion

The present investigation aimed at gaining deeper understanding of the work environment of internal medicine residents and how the organisation of the hospital workday affects their work experience. Our findings show how time is a constant preoccupation for residents. They "run through" a structured day, scattered with obstacles, while resorting to "tricks of the trade" in attempt to inflect the course of the shift. Obviously, time constraints are not new in medicine. These accounts from participating residents will probably resonate in many readers, reminding them of similar experiences. Indeed, lacking time to accomplish tasks is a widely reported cause of dissatisfaction and frustration among physicians [20]. However, our results outline a new phenomenon in the clinical world: perceiving time as *an end in itself*, meaning that everything that makes up a shift is viewed through the distorting lens of time.

In the residents' accounts, we find reminiscences of a common nightmare: the dreamer running late to go somewhere, constantly hindered and delayed by a reluctant environment. In the focus group material, the anguish of falling behind time emerged as a constant concern. Diversions take many forms, such as from a recalcitrant EHR to nurses both elusive and intrusive, or from the unpredictable appearance of consultants, to talkative families and patients. In response, residents develop tricks-of-the-trade. However, their leeway is limited. They feel the organisation of the working day as constraining, with little room for inventive adjustments [4]. In this environment, residents' ultimate goal is to "finish the day" on time. Caring for patients and families, dealing with medical complications, discussing with consultants and supervisors, are all essential aspects of medicine and parts of a normal day in the clinic. However, our results suggest that, under time pressure, they may be experienced as unexpected and undesirable bumps on the road.

Our single-centre setting represents the principal limitation of the present study, however, we believe that the described experience may be not unique to IMD residents. With 47-hour weeks at the time of the study, working hours are aligned with the national and European standards [8, 10]. Residents in this study care for the same number of patients as in other hospitals [21, 22] and their daily schedule follows a classic pattern, punctuated in the morning by handovers from the night team, the study of new patient files and the inter-professional ward round. In the afternoon, after a lunch break of 30–60 minutes and a daily postgraduate training session, residents review problems with supervisors, meet patients' families, discuss with consultants and assess newly admitted patients [11]. Moreover, the work situation of participating residents may even be more adapted to their needs than in other hospital settings, since, in 2018, our IMD received a national award for its exemplary efforts to improve working conditions for residents [23]. A number of underlying, local factors may contribute to the residents' experience: their coping strategies (effective or not), time management skills, their professional experience, the support they receive from supervisors, the documentation demands, etc. We addressed in previous publications possible institutional strategies to improve the residents' working conditions [12, 13]. Here, however, we wish to discuss our results by situating them in the broader health care context. Healthcare systems are undergoing major structural and financial changes and hospitals have to adapt their organisation to evolving constraints [24, 25]. Growing and aging populations, medical advances, progressive specialisation within medical specialties, and emergence of team-based collaborative care models and inter-professional approaches, all contribute to an increasingly complex healthcare environment [2]. Adding on to physicians' work burden is the expansion of documentation requirements related to issues of accountability, transparency, billing, and the use of EHR. Residents face an increase in both the number and complexity of competing tasks, contributing to frequent task-switching [12]. This is also problematic in that task-switching — and, more generally, a work environment characterised by stress, time pressure, and fatigue — may have negative effects on patient safety [26, 27].

A compounding factor is the evolving regulation of residents' working hours, which is also more strictly enforced. Interestingly, what was meant to improve the work conditions of young physicians, notably with regard to to the positively perceived and appreciated attention given to the issue of "work-life balance", also results in a new source of concern [10, 28]. The limitations have the dual effect of *diminishing* the number of planned working hours and simultaneously *restricting* the possibility to adjust them according to circumstances. Indeed, our results show how residents worry that they will be unable to finish the day within the allotted time. This does not necessarily imply that working hours should not be limited in some way;

however, our findings reveal how regulation has the paradoxical effect of increasing pressure on time [28].

A passion for speed has become a defining trait of modernity [29]. Sociologist H. Rosa developed a critical perspective, framing modernity as a social *acceleration*, including technical innovations, societal changes (notably in family organization and work conditions), and the overall rhythm of life [30]. Whether the contemporary unrelenting push to increase speed is a boon or a bane is a crucial question, to which we do not claim to respond. Nevertheless, in an environment where time has become an overarching value, physicians themselves are not immune to the seduction of speed. In the hospital, *time* and *efficiency* indicators tend to function as *quality* indicators: length of hospital stay, duration of technical procedures, time to produce a discharge summary, resident overtime, etc. [31]. Moreover, as the very existence of our study indicates, physicians have developed an interest in time management and organizational interventions, often with mixed results [11, 32, 33]. Such preoccupations may contribute to losing sight of what is central to medicine.

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Potential competing interests
All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflict of interest was disclosed.

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