What Then Is Time? An Exploration of Time Perception in Emergency Medicine

Dr. Paul R. Atkinson, MB, MA*†‡

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"What then is time? If no one ask of me, I know. If I wish to explain to him who asks, I know not."—Saint Augustine of Hippo

Moving from the resuscitation room, where the preceding 45 minutes of the shift seems to disappear in a blur of CPR, drug administration, defibrillation attempts, and invasive procedures, into the "urgent" care section of the emergency department (ED) where a young mother has been waiting, worrying for 3 hours with her febrile child, it is too easy to forget about the relativity of time.

Newton believed in and described an "*absolute, true, and mathematical time, of itself, and from its own nature, (that) flows equably without relation to anything external.*" His successor in the quest to understand and describe the reality we experience, Einstein, was less grandiose in his attributed explanation of how he saw time: "*When you sit with a nice girl for two hours you think it's only a minute, but when you sit on a hot stove for a minute you think it's two hours. That's relativity.*"

At first glance, it can seem obvious, what time is: it is the ticking of the clock, the rise and setting of the sun, the changing of the seasons. But really these are just physical manifestations of the passing of time. Time is a universal ingredient of everyday life, science and academic thought, yet its true nature and essence escape definitive description.

In medicine, and especially in emergency medicine, we often cling to a Newtonian appreciation of time. What is the current wait time for level 3 patients? How long did your pain last? How long since the last dose of epinephrine?

Yet for the patient, experiential or relative time contributes more to their memory of their visit to the ED than the actual ticking of the clock. Intense experiences such as pain, anxiety, or inactivity can alter the appreciation of the flow of time. The frustration of waiting can magnify the actual wait time. Have you ever had to correct a patient complaining about their ED wait, to tell them that they *underestimated* the duration?

What do we, as emergency care providers, have to offer our patients? Our knowledge, our skills, our compassion, and our time.

For emergency care providers working in a busy ED, our time is "full" of activity, interruptions, interactions, tasks, and responsibilities. For many of our patients, their time in the ED is "empty." They wait to be triaged, then wait again while the nurse completes the record. They wait to register. They wait to be called into a consultation room, where again they wait to be seen. Then, for a brief minute or two, their time is filled as a nurse or physician enters their room, asks some questions, briefly examines them, and disappears again, only for them to wait again. Perhaps some tests are performed. Perhaps some treatment is administered. Then, more time. Perhaps the test needs to be repeated. Then, more time. *What is happening? Have I been forgotten? How long will I be here? Do I really need to stay? The doctor did not seem to be worried.*

The relative experience of time for patients and staff in the ED is vastly different.[1] Yet, there is much we do that exaggerates this "full" and "empty" time contrast.

The necessity to access and complete medical records, to deal with phone calls, and to complete reports can significantly detract from the amount of

From the *Department of Emergency Medicine, Dalhousie University; †Saint John Regional Hospital; and ‡Canadian Journal of Emergency Medicine.

Correspondence to: Paul Atkinson, Department of Emergency Medicine, Dalhousie University, Saint John Regional Hospital, 400 University Avenue, Saint John, New Brunswick E2L 4L2; Email: paul.atkinson@dal.ca

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time any care provider spends with a patient. The average emergency physician spends only 25-30 percent of their time in direct patient contact.[2,3] While the care provider experiences a fullness of time reading the patient's chart and previous results, seated at a desk outside the patient's room, the patient experiences little of this attention to their details. While the care provider negotiates with a consulting specialty or radiology on the patient's behalf, the patient sits experiencing empty time.

Does this matter? If a correct diagnosis is made, and the patient is reassured or treated appropriately, and is dispositioned appropriately, what has been lost?

While there is much to be gained by reviewing records of previous visits, investigations, diagnoses and opinions, unless this is performed at the bedside, the loss of time spent *with* the patient can have negative diagnostic and therapeutic implications. Why do patients forget to mention pertinent information in the history? Why is the reviewing attending physician often able to elicit further important information missed by the resident? Questions considered during "empty" waiting may be insufficient for the accelerated, yet brief "full" minutes of time that the medical interview lasts. The hurried provider risks missing the subtleties of associative memory function—how one answer will, in time, lead to another piece of information. Watching how a patient emotively describes a previous experience or diagnosis may provide more useful information than the detailed description on the MRI report.

How valuable is the "engaged" or "full" time we spend with patients in terms of therapy? Do finite minutes spent with patients impact their confidence in the diagnosis, their compliance to discharge instructions, or their anxiety with a prescribed treatment plan? Perhaps objective Newtonian time matters, and we should strive to spend more measurable minutes with patients, rather than at our computers or desks. Or we should worry more about listening to the patient and answering questions, rather than ensuring we have coded every procedure, and recorded redundant negatives in their review of systems.

The power of placebo in medicine has been widely studied, though often underutilized. Since we often have no highly effective treatment for our patient's conditions, it would seem logical to harness the "engaged" and "full" time spent with patients for the placebo effect that that might have. Certainly, we should avoid the under-recognized *nocebo* effect, its negative antithesis.[4,5] Whether we manage to rearrange our working practices to enable us to spend one or two extra minutes in the presence of each patient, the recognition of the need to "fill" that face time with engagement and beneficial interaction is important.

The nocebo effect may occur when a patient feels that they were not listened to, and may lead to repeat visits and wasted resources.[5] Such negative perceptions of interaction with care providers can worsen outcomes. Evidence that the nocebo effect negatively impacts measurable outcomes, such as severity of headache, incidence of myocardial infarction, rates of asthma exacerbations, and development of described sugar pill side effects, has been demonstrated in experimental studies.[5] Negative emotional reinforcement is dangerous.

It is highly unlikely that our health care system will eliminate patients' empty time. It is also unlikely that care providers will ever be able to dedicate all of their time to direct patient interaction. Yet the rise in demand for emergency physicians' time is likely to continue. We should appreciate that the way we spend our time with patients can influence not only their experience, but perhaps the effectiveness of our management plans. This should prompt us to spend a little less time looking at our screens, and relatively more time engaging with our patients. ED system planning should acknowledge the real threats to the time we spend meaningfully engaged with patients, and ensure that future developments in management processes do not erode this further.

As care providers wondering how we are going to manage the ever growing queue of waiting patients, we must use time wisely. Should we use that time questioning why the mother did not call her family physician, or why she is concerned about the absolute height of her child's fever, or repeating the often ironic and rhetorical question of "Don't you know that antibiotics won't help a viral illness?" Should we spend it charting an endless number of negative findings to justify not providing a prescription? Perhaps spending the time pursuing a meeting of minds, demonstrating an understanding of concern, and providing sincere reassurance will help erase the memory of the preceding empty time. It might even improve future interactions and outcomes, for both care provider and patient. Time will tell.

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