

## An Outpatient 'Zebra'

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Berkowitz L. An Outpatient 'Zebra'. PSNet [internet]. 2006.

<https://psnet.ahrq.gov/web-mm/outpatient-zebra>

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### The Case

A 64-year-old man presented to the outpatient clinic with a chief complaint of left foot pain and numbness. His past medical history included lumbar disc disease, hypertension, and active tobacco use. A medicine resident evaluated the patient, diagnosed sciatica due to existing disc disease, and prescribed appropriate analgesics after discussion with a supervising attending. Three weeks later, the patient continued to experience left foot pain but also developed localized swelling. A different resident (and supervising attending) evaluated the patient, ordered plain films that showed no evidence of fracture or osteomyelitis, and prescribed antibiotics for cellulitis. During the following week, the patient's symptoms continued, and he received evaluations from two additional residents, one of whom ordered a bone scan that confirmed no evidence of osteomyelitis.

The next week, the patient returned with persistent foot symptoms, and yet another provider noted a decreased pulse in the left foot and referred urgently for vascular evaluation. The patient ultimately received a diagnosis of left superficial femoral artery occlusion and underwent successful vascular bypass within a week. Though the delay in diagnosis might not have prevented a surgical procedure, the diagnostic errors produced repeated visits, continued symptoms, and an ineffective treatment plan for nearly 5 weeks despite many opportunities for earlier intervention.

### The Commentary

Patients often require repeat clinical evaluations before a diagnosis is made or becomes clear. What is reasonable? In this instance, seven different physicians evaluated a patient over the course of a month before the last provider finally determined arterial insufficiency as the cause of the foot pain. The tip-off in diagnosis was presumably the finding of a diminished pulse in the affected limb. Prior to that time, the patient underwent a diagnostic evaluation for osteomyelitis and received treatment for both disc disease and cellulitis. Fortunately, the patient ultimately received the correct diagnosis and therapy with a desirable outcome.

In trying to explain the course of events, it is tempting to place the blame solely on the residents due to their relative inexperience in patient care. The fact that attending physicians supervise residents, as occurred in this case, puts this argument into question. A more plausible explanation for this patient's course comes from an examination and understanding of some unique features in a resident-driven clinic.

First, inefficiency prevails in a typical resident continuity clinic, where residents spend a half-day most weeks seeing patients in that setting. Even in a well-run clinic, evaluating six to eight patients is considered a reasonable workload for the average resident, owing to this inherent inefficiency. However, many resident clinics suffer from limited support staff and confined space. Residents often find themselves consumed with administrative responsibilities and delayed by waiting for patients to be triaged and prepared in exam rooms. These inefficiencies cut down significantly on the time a resident spends with each patient and often compromise the time they need to generate a differential diagnosis and treatment plan. Operating under this time pressure, the temptation arises to quickly come to a diagnosis, as the first resident did during the initial encounter. With the patient's history of disc disease, the resident thought that there was such a high pretest probability of sciatica that no further diagnoses had to be considered. Although this was a very limited way of evaluating the patient, it may well have been the most efficient.

A second important issue is continuity of care or, in this case, a lack of continuity. The patient returned multiple times to the same clinic but saw a different physician each time. The culprit here may be the way residents are scheduled for their continuity clinics. The Resident Review Committee (RRC), the national body that oversees residency training requirements, requires that internal medicine residents participate in 108 weekly continuity clinic sessions during their 36-month training period.<sup>(1)</sup> These clinics must fit into a resident's monthly rotations, which combine ambulatory and inpatient experiences that are distinct from the continuity clinic requirements. The end result is that each resident is in clinic different days of the week and is not in clinic some months at all, such as during an ICU rotation. Even the most dedicated resident struggles with adequate continuity because of the variability in scheduling. And the most dedicated patient faces the same challenge in trying to see the same physician on each clinic encounter. In this case, it is easy to see how this patient ended up seeing so many different care providers.

A third issue is the balance between resident autonomy and supervision [see related commentary]. It is important that residents approach their patients in the role of the primary provider. It is equally important that residents acknowledge their inexperience and seek input and supervision from attending physicians. In most resident clinics, there is one attending physician present to supervise four residents simultaneously. The resident first sees the patient and then presents the case to the attending physician. The patient is then seen usually by both the resident and supervising attending together. In the interest of time and efficiency, only the salient features of the history and physical examination are reviewed. Because the attending is trying to preserve resident autonomy, she is likely to defer to the thought process of the resident, perhaps giving undue weight to the resident's pretest probability for a given diagnosis. In this case, even if the diagnosis was not sciatica, all of the physicians operated under the assumption that the problem was musculoskeletal in origin, resulting in the evaluation for osteomyelitis and the treatment for cellulitis.

Considering these contributing factors, what can be learned from this case to prevent future similar case scenarios? Residents must generate a differential diagnosis regardless of the situation. At the conclusion of

this first encounter, the initial resident evaluating a patient is obligated to develop a plan that provides some continuity of care for the patient, even if the schedule for follow-up is challenging. Access to electronic records should facilitate this in many settings. Supervising attendings must demonstrate to the residents how to alter the clinical approach if the initial diagnostic and treatment plan fails to resolve a patient's symptoms or findings. Knowing that there are inherent limits on the time a resident spends with a patient should serve as a reminder to be even more vigilant to avoid possible missed diagnoses.

In addition to these changes in both resident and attending behavior, changes in the clinic structure should be considered. One approach might include scheduling residents in blocks of time that include dedicated inpatient and outpatient responsibilities, rather than forcing them to juggle both. For instance, residents may spend 2 months in the ambulatory setting followed by 2 months in the inpatient setting and so forth. This would allow sufficient time and access for each patient, their pending evaluations, and their follow-up for the same unresolved problem. Block rotations would also facilitate resident-faculty continuity. A second clinic adaptation might be to pair residents in a practice-sharing arrangement to counterbalance their limited availability with only one clinic session per week. This would promote a sense of a group practice, improve continuity, and create easier opportunities to "sign out" evolving patients who require necessary follow-up. Finally, clinics should consider developing measurements of resident performance in clinic. Simple measures such as the number of patients seen per clinic session, frequency of patient returns, and the number of tests done per patient might have raised a red flag for the patient presented in this case. Another benefit of this measurement is the emphasis that it can place on patient safety and quality of care. As residents transition into practice, they will increasingly find themselves in a climate that places such performance measures at a premium.

### **Take-Home Points**

Several changes should reduce the reoccurrence of the type of patient care seen in this case:

- Residents must always generate a differential diagnosis and follow through with it if a patient's problems do not resolve quickly.
- Residents should strive for continuity of care, notwithstanding the inherent difficulties in the system.
- Attending physicians should instruct residents on how to alter an approach if a patient is seen multiple times for the same complaint.
- Residency directors should consider block clinic rotations and pairing of residents.
- Residency directors should consider adding measurements of quality and patient safety to resident continuity clinics.

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### **Reference**

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