THE REFERRAL EXPRESS: AN UNPRODUCTIVE CYCLE OF REFERRALS FOR DENTAL PAIN DIAGNOSIS

Amah Riley
The Medical University of South Carolina

Jeff, a 42-year-old white, privately-insured male from the rural community of Boykins, Wisconsin presents to five different providers, including dental, medical and specialty providers in 12 appointments due to continuous face and jaw pain leading to severe headaches. A previously filled tooth that developed a fracture was the sole culprit.

REFERRALS SYSTEMS BETWEEN MEDICAL AND DENTAL CARE

According to the Institute for Healthcare Improvement (IHI) (2018), there were 105 million patient referrals in 2009, which is quite a jump from 40.6 million in 1999. When referrals aren't conducted efficiently between specialties, delays in diagnoses and care are most likely to occur. In some cases, diagnoses and care can be completely missed. When patients experience delays in care or not receive care at all, the patient's safety and overall health can be affected. In response to system failures in interprofessional referral processes, IHI set out to develop guidelines for the standardization of those processes in a closed-loop format. "A closed-loop referral process is one in which all patient data and information that require action are communicated to the right individuals at the right time through the right mode of communication to allow for review, action, acknowledgment, and documentation" (IHI, 2018). There are many reasons for referral system failures, such as provider overload, lack of staffing, lack of communication, and lack of patient compliance. In a 2013 study, 20% of missed diagnoses were attributed to the breakdown of the referral process, with the majority being a failure to initiate the referral (Singh et al., 2013). In their 2018 report, IHI provided many recommendations for interprofessional practice that includes the utilization and interoperability of practice management and electronic health record systems between specialties, standardized handoffs, staff accountability, and reliable tracking mechanisms.

When thinking about population health, "interrelationships between the distribution of social, economic, demographic, cultural, political, and other valued societal resources and health at the community level" should be evaluated to be successful in understanding and improving health at a community level (Health Resources and Services Administration [HRSA], 2018). Rural Americans are at a greater risk for

health inequities in comparison to their urban counterparts (CDC, 2019). Much of these inequities can be attributed to the combined effects of economic factors, varied educational levels, cultural and social norms, and living in remote areas. It will be critical to prioritize adequate referral resources for rural communities as it is simple to say referral resources *should* be readily available to rural populations. However, according to the National Rural Health Association (NHRA) (2013), this is not always the case, many times specialized care referral linkages and resources are missing. This strongly supports the theory that in rural areas, "priority should be given to putting in place the identified building blocks and securing the resources necessary for their sustainability" (NHRA, 2013)

JEFF'S LIFE IN BOYKINS.

Jeff grew up in an old rural mining community, although the mining industry has dried up over the years. As the mines closed, the population dwindled. When population and industries see such declines, healthcare falls as well. Jeff is married to Donna who left her job as a teacher to take care of their two children with complicated healthcare needs. Their oldest child suffers from a rare form of cancer and is receiving radiation following chemotherapy and surgery. Their youngest child has diabetes that requires the use of an insulin pump. Boykins is a small community located 22 miles from the nearest town with a grocery store and has primary healthcare services offered at an FQHC. All specialty care is 42 miles away in Tingen, the next town over. There is no public transit that runs within Boykins or from town to town in the surrounding areas. However, Jeff is one of the fortunate members of the community to own a car.

JEFF'S DENTAL PAIN STORY AND THE REFERRAL FRENZY

Jeff presents back to his general dentist with severe jaw and facial pain after a filling was placed in a maxillary molar a week prior. His dentist, Dr. Mimms, took an x-ray and checked occlusion and couldn't find anything wrong. Dr. Mimms assumes the tooth recently filled had become sensitive from the most recent visit and recommended using sensitive toothpaste for the next week.

A week later, the pain persisted and Jeff thought it could possibly be a sinus infection. He presents to his primary care physician, Dr. Michaels. After Jeff confirmed some slight symptoms that could indicate sinus issues, Dr. Michaels agreed that a sinus infection could be the culprit to his pain and prescribed Jeff antibiotics.

Jeff was adherent to the antibiotic regimen, but he gained no relief. At this point, Jeff decided it must certainly be the tooth. He returned to his dentist, Dr. Mimms. Dr. Mimms took another x-ray and checked his occlusion but found no obvious issues. Dr. Mimms thought that perhaps the occlusion was off just a small amount

that was going undetected by his assessment and decided to adjust his occlusion with concentration on the recently filled maxillary molar in hopes to alleviate the issue.

Days later, Jeff was still in pain and begins to wonder if it is a sinus infection and maybe the antibiotics didn't work. He returned to Dr. Michaels, his primary care physician. Dr. Michaels did not think the pain was sinus related at this point and referred Jeff back to Dr. Mimms.

Dr. Mimms checked Jeff's occlusion again and decided his "bite was off a little" and adjusted his occlusion once more.

Jeff was still in pain and the discomfort has now progressed into headaches in combination with jaw and facial pain. Jeff began to wonder if it was related to glands or even a brain tumor and returns to his PCP. Dr. Michaels orders a CT scan of the head for further investigation of the progressing pain and referred Jeff to the hospital for the test.

Jeff presented to the hospital the next day for his CT scan. He then had to report back to Dr. Michaels later that week to discuss the results. The results showed no abnormal findings in the brain, jaw, or sinuses. Dr. Michaels decided to refer Jeff to an Ear, Nose, and Throat (ENT) specialist.
Jeff presents to the ENT and received a diagnosis of a pulled muscle in his face. The ENT referred Jeff to a massage therapist for a facial massage to loosen his muscles. His referral for the massage was in the form of being handed a business card of the local massage therapist.

Jeff decides to go back to the dentist in disbelief it was a pulled muscle. Dr. Mimms then determines that the maxillary molar is fractured causing him this pain and refers him to an oral surgeon (OS).

Jeff called to make the appointment with the OS and was quoted $750 for surgery and $75 for a consultation that would need to be paid out of pocket and upfront because the OS was not a provider within his insurance network. Jeff was told he could file with his insurance company for any benefits he may have to be able to receive possible reimbursement. However, this was not an option for Jeff at the time.

The same day as his OS referral, Jeff's wife, Donna, is telling a friend about Jeff's ongoing issue. Her friend works for a Federally Qualified Health Center (FQHC) with a dental department and began telling Donna about their dental program and instructions on obtaining an appointment. The dental office at the FQHC is a

pediatric facility and due to the federal regulations from Health Resources Services Administration (HRSA), the only way for an adult to be seen is through an emergency referral from a medical provider within the FQHC.

Jeff made an appointment as a new medical patient at the FQHC and was seen by a medical provider to request a referral to the dentist for a hopeful confirmation of the most recent diagnosis and potentially a more affordable cost.

The same day, Jeff was referred and presented to the FQHC dentist, Dr. Lee. Lee x-rayed the tooth in question to find an abscess and visually diagnosed a fracture and recommended extraction. Lee offered to perform the extraction the same day and quoted the FQHC fee of $60. Lee was successful in removing the tooth. Lee followed up with Jeff the next day to find complete relief.

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