INTEGRATING DENTISTRY INTO RURAL PRIMARY CARE MEDICINE – THE MCLEOD ORAL HEALTH LEADERSHIP (MOLAR) AND REFERRAL CLINIC

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As an experienced dentist serving rural communities in South Carolina, Dr. Jamie Driggers has witnessed the exacerbation of social and health disparities linked to poor oral health. With limited availability of dentists in the communities she has served during her career, she made a courageous career change to establish a dental program within a rural family medicine residency program. There, she is equipping medical providers with skills to address oral health within their scope of practice in hopes of ameliorating oral health inequities through alternative approaches.

NEED FOR INTERPROFESSIONAL ORAL HEALTH PRACTICE

McLeod Health sits in the center of the Pee Dee region of South Carolina, one of the most underserved regions in the state. The region's name is derived from the Pee Dee River, an important natural and commercial resource for the area, which was named after the Pee Dee Native American Tribe. While many visitors to South Carolina are familiar with Horry and Georgetown Counties ("The Grand Strand"), home to Myrtle Beach with its lush golf courses and vacation resorts, the rest of the region evokes less attractive connotations. A 2005 public television documentary, "Corridor of Shame: Neglect of South Carolina's Rural Schools," chronicled how public schools are funded and the disparate impact such policies have on our rural communities. The nine-minute trailer can be viewed at *corridorofshame.com*. The rural counties, through which Interstate 95 traverses, is now commonly referred to as the "Corridor of Shame," in reference to policymakers' neglect of children in these counties. The use of the word 'shame' was an advocacy approach to encourage state officials to respond to the education and poverty crisis in the area. 'Shame' is not intended to characterize the children and teachers in these

communities. Nine of the 11 Pee Dee counties are "Corridor of Shame" counties.

The Pee Dee region's population estimates as well as social and health equity determinants are evident in the 2017 Robert Wood Johnson Foundation County Health Rankings.[1] Based on the ranking of South Carolina's 46 counties, 10 of the 12 Pee Dee counties rank in the bottom half for availability of health outcomes, clinical care availability, and social and economic factors. About half are represented in the bottom quartile of the same rankings (See Table 1).

TABLE 1
Select Pee Dee County Health Rankings

Pee Dee Counties (n=46 SC Counties)	Health Outcomes	Clinical Care Availability	Social & Economic Factors
"Grand Strand" Counties			
Georgetown	22	25	25
Horry	17	32	29
"Corridor of Shame" Counties			
Williamsburg	41	33	41
Florence	33	14	21
Marion	46	36	43
Dillon	45	40	44
Clarendon	25	37	34
Sumter	21	19	17
Lee	43	42	35
Darlington	35	38	27
Marlboro	46	36	43
Chesterfield	31	45	24

Dental Workforce Capacity. One explanation for oral health inequities in the Pee Dee is the poor availability of dentists in the region. Recent data demonstrates that all 12 Pee Dee counties have a dental health professional shortage area (HPSA) designation, which means they do not have enough dentists to address the need for care.[2]

Integration of Oral Health into Primary Care. The Health Resources and Services Administration (HRSA) released its 2014 Report, "Integration of Oral Health and Primary Care Practice."[3] The HRSA report provides a blueprint for how primary

care providers such as family medicine and pediatric physicians, nurse practitioners, and physician assistants can address unmet oral health needs within their scopes of practice. By espousing interprofessional practice, they also demonstrate to their patients to value of their oral health relative to their overall health. The HRSA report suggests primary care providers should incorporate the following practices into their care delivery models: oral health risk assessments and evaluation, risk-based oral health education, and collaborative referral management with dentists. Also included is the provision of clinical services authorized by state practice acts such as the topical application of fluoride to reduce risk of dental decay.

VISION FOR THE MOLAR CLINIC & INTERPROFESSIONAL CURRICULUM

With funding from The Duke Endowment, McLeod Health established a new dental clinic within its existing rural family medicine residency program. Dr. Driggers was recruited to lead the MOLAR Clinic, as well as serve as faculty in the residency program where she would train rural family medicine residents on oral health interprofessional practice. The position of Director of Oral Health Integration at McLeod Family Medicine Residency resulted. The imperative and vision for this position resulted from several cases seen by physician faculty and residents that involved urgent oral health needs. The primary care providers did not feel they had the prerequisite knowledge to manage these cases. Many primary care training programs use the Smiles for a Lifetime curriculum,[4] which is a great source for conferring knowledge and competencies. In the case of McLeod Health, however, they envisioned a transformational process and clinical structure that included structural integration into care delivery and philosophies of family medicine physicians.

ALIGNING ORAL HEALTH WITH FAMILY MEDICINE RESIDENTS' LEARNING NEEDS AND EXPECTATIONS

As Dr. Driggers assumed her new role, she had to learn family medicine practice and training objectives. As a dentist, she had a steep learning curve. Early in her role, she saw that her residents own learning needs about oral health were out-of-step with modern science. This began a process of reconciling the oral health needs of patients with what primary care and dental providers could do collaboratively at the MOLAR Clinic and how that would translate in a rural family medicine residency curriculum. A few accounts that exemplify this dynamic are presented.

Account #1 – Family Medicine Presentation of Oral Health Need

A third year resident sought Dr. Driggers' guidance on a patient examination. The patient had a chief complaint of swelling and tenderness inside her jaw, along with a sore throat, general aches and malaise. The clinical team was able to get the

patient an x-ray through a local dentist office where infection was diagnosed, which the resident properly diagnosed and prescribed antibiotics. Dr. Driggers was able to treat the patient the same day by extracting the tooth to allow proper healing to occur. When asked why the patient came to the family medicine practice instead of a dental office. She replied that she did not think she could afford the dental visit because her insurance did not cover those expenses. She did, in fact, have dental coverage and Dr. Driggers was able to be seen at no out-of-pocket cost. The patient's impression is similar to so many in that dental care is unaffordable. This interaction exemplified the need for oral health interprofessional practice delineated in the HRSA report.

Account #2 – Inpatient Situation and Radiology Quality

After rounds one morning, a second year resident reached out to Dr. Driggers soliciting her input on a patient who was admitted to the hospital. The patient had come in for an upper gastro-intestinal issue, but the resident noticed significant swelling under his left eye. As a result, a panoramic x-ray was ordered for the patient, who had already been given antibiotics for the swelling. A panoramic x-ray is a two-dimensional image of an entire mouth. The x-ray was ordered around 11:30am, but did not get produced until almost 4:00pm. Given the later hour and the state of the patient, Dr. Driggers waited until the following morning to consult with the resident and patient.

The radiograph was of poor quality. Because panoramic x-rays are not traditionally done in medical facilities, radiology technicians do not conduct them regularly likely resulting in the poor quality. Dr. Driggers used the radiograph experience as a teaching point before going in to see the patient to show residents what they should be looking for and what they can expect to see intraorally when examining a patient. The swelling on the patient had gone down significantly. The patient had severely broken down teeth, with evidence of decay and infection. Other areas of the mouth looked equally as bad with decay, but no evidence of infection. Due to the patient's gastro-intestinal issue, the decision was made to provide no oral treatment at the time, but to have him follow up with an oral surgeon.

This incident illustrated two important points. The first was the interprofessional curriculum was impacting how the family medicine residents examined patients. In this case, the resident considered oral health issues as a potential etiology of the facial swelling rather than assuming it was a 'medical' problem. The second was that successful integration of oral health into medicine should extend to team members beyond physicians and nurses. Team members involved in diagnostic services (radiology technicians) are essential to a successful integration model.

NEW ORAL HEALTH CURRICULUM FOR FAMILY MEDICINE PHYSICIANS

These interactions serve as examples of why a new curriculum for oral health integration in primary care was needed, especially in communities designated as underserved. McLeod Health decided to use national standards for delivering oral health education to their family medicine residents.[5] For Dr. Driggers, her family residents needed additional training in on (a) systemic conditions that manifest oral complications (diabetes, heart disease, pregnancy), (b) how to recognize oral disease in its simplest and more complicated forms, (c) how to perform basic dental procedures within scope of practice, (d) basic dental nomenclature, and (e) basic radiographic features that may be encountered outside of a dental practice.

CONCLUSION

By equipping these residents, for whom there is a high retention rate in the region, it is the collective hope that oral health inequities will be addressed more collaboratively and effectively.

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