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Creating a Rural Plastic Surgery Practice: Social and Financial Impacts

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Summary: In the United States, 25 million people are without reasonable access to a plastic surgeon. Previous studies have demonstrated that rural populations have limitations to healthcare, and these limitations result in poor quality of life and poor outcomes. New research points to the importance of rural plastic surgery, but still lacks clarity of what the creation and development of a rural plastic surgery practice may entail. Our aim with this study was to discover both the surgical compilation and financial impact of a single rural plastic surgeon's practice. We reviewed the first 1.5 years of a single surgeon's plastic surgery practice from its beginnings in a rural community at a critical access hospital with no previous plastic surgery presence. During the study period, the surgeon completed 2062 clinic visits and 305 surgeries. The practice involved approximately 70% hand surgery and the remaining general plastic surgery. The practice generated approximately $8 million in charges and $3.5 million in collections. Collections were broken down by $2.6 million in surgical procedures, $560,000 from clinical practice, and $330,000 from downstream revenue. A rural plastic surgeon's practice may have noted positive impacts on medical care and financial bottom lines in rural communities.
(Plast Reconstr Surg Glob Open 2022;10:e4293; doi: 10.1097/GOX.0000000000004293; Published online 2 May 2022.)

INTRODUCTION

Clear evidence exists in the literature that patients in rural populations have limitations to healthcare, and these limitations result in poor quality of life and poor healthcare outcomes.[1] Improving healthcare access for rural patients remains a challenging endeavor. Limited access to care is a burden. It most commonly manifests as traveling long distances for specialized care located in large urban centers. This impacts rural patients in several ways: needing more costs for travel, requiring time away from work, adding additional stressors to patients and their families, and ultimately, leading to complex medical care being provided by nonspecialized physicians, resulting in poorer outcomes and eventually, total avoidance of medical care by rural patients.[2,3]

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Received for publication January 10, 2022; accepted March 7, 2022.

DOI: 10.1097/GOX.0000000000004293

The strain of delivering medicine in small communities seems to only be intensifying with declining physician numbers, paired with the lack of specialists located in rural America.

When broken down by the National Cancer Institute's designated health service areas in the United States, approximately 50% of them have no active plastic surgeon. The majority of the populations impacted by this shortage are designated rural.[4] If broken down by population sizes, this corresponds to 25 million people without reasonable access to a plastic surgeon. Another 29 million live in health service areas with access to one or fewer plastic surgeons per 100,000 people.[5]

It would seem intuitive that a rural community could greatly benefit from a local plastic surgeon's specialized care. However, with a lack of information regarding rural plastic surgeons and their practices, few recognize the merit of rural plastic surgery.

Previous studies on general surgeons have demonstrated the immense impact that those surgeons can have on a rural setting. A rural general surgeon can generate $1.4 million for the hospital and $2.7 million for the community in a year and potentially create 26 new jobs for a rural community.[6]

We aimed to discover with this study both the compilation and financial impact of a single rural plastic surgeon's practice from its beginnings in a rural

Disclosure: *The authors have no financial interests to declare in relation to the content of this article.*

community at a critical access hospital (CAH) with no previous plastic surgery presence. Our goal was to define the scope of a rural plastic surgeon's practice and express its benefits to rural patients, rural hospitals, and rural communities.

METHODS

A retrospective review was completed on a single rural plastic surgeon's practice from its inception (October 2019–April 2021). The surgeon was employed by a hospital in a rural area of Washington state. The practice was located in a critical access hospital, which is defined as a hospital with no more than 25 inpatient beds in a location deemed underserved and in need of access to 24-hour medical care. The practice was located in an area without a previous plastic surgeon at the hospital or in the surrounding area, and no access to plastic surgery care within an hour from the hospital. The surgeon's practice consisted of a blend of reconstructive plastic surgery. Surgeries were performed on an inpatient and outpatient basis.

The practice (totaling approximately 1.5 years) was reviewed from its inception. The surgeon had completed a plastic and reconstructive surgery residency and hand fellowship before beginning this practice in October 2019. The period of study included the practice initiation through the COVID-19 pandemic and during board collection and board certification process.

Outcomes measured included both clinic office visits and procedures, and operative surgeries. Clinic variables included number of clinic visits and level of visit.

Operative variables included number of surgical cases, variety of cases based on type of surgery (hand surgery, general plastics, and wound reconstruction), and variety of cases based on acuity (trauma versus elective).

Financial variables included patient insurance type (Medicare/Medicaid, private insurance, worker's compensation, self-pay, and governmental), professional charges (clinic and surgical), and estimated downstream revenues (imaging, laboratory, and therapy referrals).

Data were compiled using Excel spreadsheets (Microsoft Corp, Redmond, Wash.), and quantitative measurements were completed to make sums and average estimates for the practice.

RESULTS

Clinical Numbers

Data demonstrated that since the inception of the practice, there have been 2062 clinic visits. This averages to 115 clinic visits per month. Clinic visits tended toward level 3 and level 4 ICD-10 codes.

Operative Numbers

The surgeon has completed 305 surgeries in the past 1.5 years. This averaged to approximately 17 surgeries per month. Surgeries were divided according to categories of type and acuity. Breakdown of surgical practice included 69% hand surgeries, 17% plastic and reconstructive surgeries, and 14% wound reconstruction. The acuity of cases was 75% elective and 25% traumatic (Fig. 1).

Takeaways

Question: Do rural plastic surgeons make a positive impact on rural communities both medically and financially?

Findings: This study focused on a practice from its beginnings in a rural community at a critical access hospital with no previous plastic surgery presence. It demonstrated a successful and varied surgical practice with a financially positive impact on the hospital.

Meaning: Plastic surgeons can transform medical care in rural communities both medically and financially.

Financial Breakdown

Since the inception of the practice by payer type, patient insurance demonstrated 63% Medicare/Medicaid, 30% commercial private insurance, 4% worker's compensation, 2% government insurance, and 1% self-pay (Fig. 2).

During the study period, billable charges related to all works in the clinical setting for the physician's fees were charges totaling $1,428,755 and a total collection of $529,595.

Billable charges related to all works in the surgical setting for the physician's fees were charges totaling $5,755,070 and a total of $2,590,173 in collections. On average, operative cases were charged approximately $18,869 per case, and the charges in collection amounted to approximately $8,492 per case.

During the study period, billable charges related to all downstream-revenue-generating services related to the physician's practice were charges totaling $815,421 and a total of $331,722 in collections. Downstream revenues included imaging services (x-rays, CT scan, MRI, ultrasound, and mammography), therapy referrals, and laboratory orders created by the presence of the practice (Fig. 3).

The total of related charges based on the plastic surgery practice since its inception during the study period was $7,999,247 and total related collections was $3,451,491 (Fig. 3).

DISCUSSION

Only in recent years has rural plastic surgery become endorsed as an important topic at major meetings and in plastic surgery magazines.[7–9] Yet, there still remains a paucity of information about the subject within the literature.

In regard to the importance of plastic surgery care in rural communities, the evidence is clear. With increasing distances from a plastic surgeon, there are delays in reconstruction or possibly no reconstruction at all for patients.[2,3] With an estimated 54 million people with limited access to a plastic surgeon, there is little doubt that rural patients suffer when compared with their urban counterparts.[4]

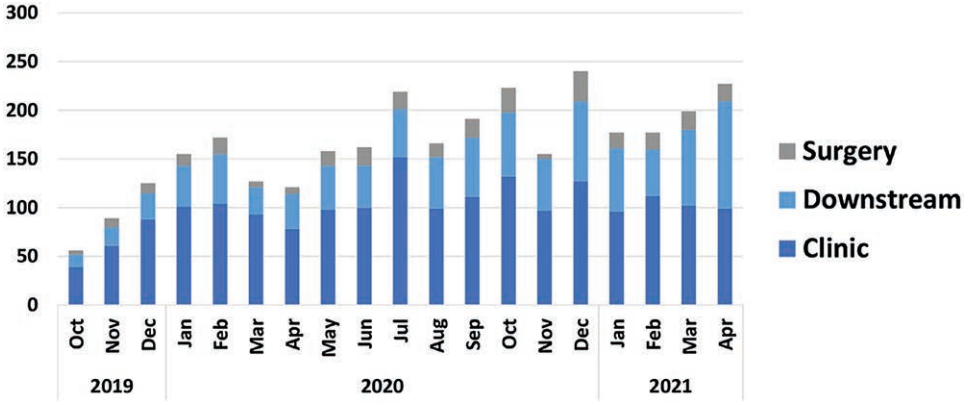

Fig. 1. Practice visits by encounter type and location (surgery, clinic, or downstream).

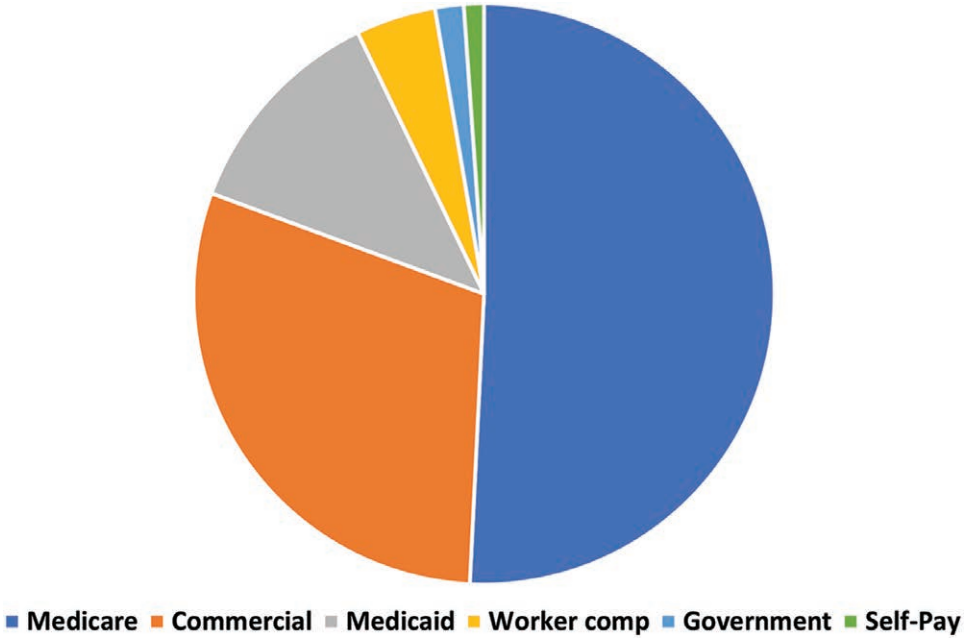

Fig. 2. Practice visit breakdown by insurance payment (Medicare, Medicaid, commercial, worker's compensation, governmental, and self-pay).

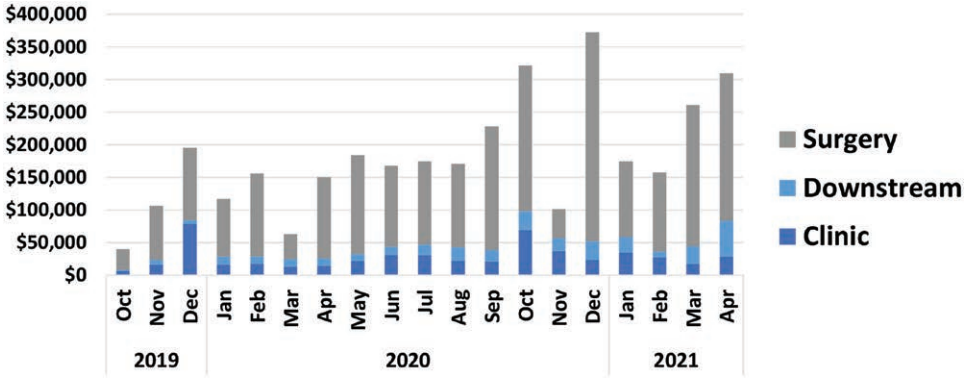

Fig. 3. Practice visits by collection type and location (surgery, clinic, or downstream).

When considering a plastic surgeon's broad spectrum of specialized training, it seems intuitive that rural medical care would greatly benefit from local plastic surgeons. Although many issues may lead to the lack of plastic surgeons in rural areas, previous studies point to hospital administrators being unfamiliar with the broad practice of a plastic surgeon and have a narrowed view of plastic surgery as a cosmetic service.[10] Tied together with the lack of rural experiences and backgrounds in medical school and residency trainees, the disparity in care seems likely to continue.

Our study reports on a single surgeon's practice in a community in need. This is illustrated by the ability of a plastic surgeon to come out of training in a rural community with no previous notion of plastic surgery and create a busy and diverse practice. Not only was this practice developed from its nascency, but it continued to grow and expand at a critical access hospital (the smallest hospital type that exists) during the global COVID-19 pandemic. These facts help validate the importance of plastic surgeons in rural America.

Additionally, critical to any practice is providing not only patient care but also financial viability. Elrich et al demonstrated the immense impact a general surgeon can have in rural practices. They demonstrated that during a fiscal year, a rural general surgeon can expect to generate $700,000 for the practice itself, $1.4 million for the hospital, and $2.7 million for the community, and can potentially create 26 new jobs for a community.[6] We previously demonstrated that certain surgeries (carpal tunnel release and breast reductions) performed by two different rural plastic surgeons in two different locations generated a notable revenue for hospital systems.[10]

This article provides a clearer and more granular understanding of the financial possibilities of a rural plastic surgeon's practice financially. The first 1.5 years of this practice generated approximately $8 million in charges and $3.5 million in collections. When looking purely at actual dollars collected, we could see that the breakdown of the revenue was as follows: $2.6 million was from surgical procedures, $560,000 was from clinical practice, and $330,000 was from downstream revenue generation.

Additionally, if we remove low-production months secondary to start-up time, board certification, reduction in patient volumes, and surgeries during the beginning of the pandemic, it is reasonable to assume that these estimates may represent the low end of the spectrum.

CONCLUSIONS

Plastic surgeons can transform medical care in rural communities. We hope that this article demonstrates a prototype for what a rural plastic surgeon's practice may entail and that the information within this article can be used by plastic surgeons, plastic surgery societies, and hospital administrators. The goal is to define the scope and financial impact of a rural plastic surgeon's practice and express its benefits to rural patients, rural hospitals, and rural communities.

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