The Integration of Superficial Radiotherapy for Skin Cancer in a Dermatology Practice

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Executive Summary

The baby boomer generation has created a significant need for access to care by seniors. Along with that need, exists the opportunity for dermatology practices to add to their service-line offerings, in different forms of skin cancer treatments, which align with Medicare guidelines, and which exist consubstantially with the intent of the ACA's intent toward access to care (Lawson, 2014). Since a large portion of the baby boomer generation spent copious amounts of time in the sun, many of them will present with basal and squamous cell skin cancers (Gundalli et al., 2015; Overmark et al., 2016). Traditional methods for dealing with skin cancers has included surgery and cryotherapy. Recently, along with other advances in skin cancer treatment, there has been an increase in radiation therapy usage, specifically in the use of superficial radiotherapy, or low energy X-rays, which is highly effective for treating non-melanoma skin cancers as a painless, cost-effective and non-lifestyle-altering alternative to surgery (McGregor et al., 2015).

Dermatologists have begun to realize that in order to meet consumer-driven, and patient-centered baby boomer needs, they need to give consideration toward pursing alternative therapies inclusive of radiotherapy units ("HHS.gov," 2015). However, since dermatologists do not necessarily get this type of training in residency, they tend to be hesitant toward the technology. Additionally, many dermatologists have relied primarily on surgical interventions, with Mohs micrographic surgery being regarded as the 'gold-standard' in caring for non-melanoma skin cancers. However, even regarded as the gold standard, Mohs micrographic surgery does not preclude recurrences, and it can lead to scarring (Catala et al., 2014). In order to adequately meet the ever-increasing number of baby boomers needing treatment for skin

cancer with non-surgical alternatives, there manifests a potential opportunity, requisite with the pursuit of knowledge toward superficial radiotherapy usage, the applicable equipment and supportive staff necessary to implement the technology toward efficacious treatment delivery, along with a willingness to move outside a practice's 'comfort zone' toward non-surgical therapies.

Access to care is paramount in importance, and a key aspect of the Affordable Care Act. As health care organizations (HCO's) work toward compliance within health care reform, they must remain cognizant of an end-game focus of reimbursement, which will center on outcomes-based payment. Patient populations are becoming more and more diverse, and particular aspects of the population are manifesting with specific needs. One such group which has the potential to overwhelm the health care system in the U.S. manifests as the baby boomers. Health care worker shortages and reduced access to care will have dramatic effects on a population of seniors retiring at a rate of about 10,000/day from 2011 through 2025 (Plawecki, 2015, para. 1). The U.S. baby boomer population has created a unique need/opportunity for non-surgical solutions to sun-induced basal and squamous cell skin cancers, and since dermatologists are the skin cancer experts, the onus of stepping up to that challenge falls upon them to offer alternatives to solely removing skin cancers surgically, thereby improving quality of life, and increasing access to care consubstantial with health care reform.

This paper will examine the benefits of, and key considerations toward, the implementation of the newest form of treating non-melanoma skin cancers through the utilization of low-dose radiation, also known as superficial radiotherapy. The technology and benefits will be presented to the reader, along with the impact its implementation has on targeted patient

populations, and those dermatology practices implementing the technology. An executive summary of the problem/opportunity will be presented, along with a real-life health care organization, its history, a needs assessment, its recognized stakeholders, managed care, legal, economic and reimbursement considerations, a proposed strategy for implementation, marketing plans, and implementation controls.

Tru-Skin Dermatology's History and Structure

Tru-Skin Dermatology, hereafter referred to as TSD, is a real dermatology practice operating in central Texas for approximately thirteen years. For its first ten years, it existed as a small practice with three locations in the Austin area, utilizing primarily a surgical intervention approach, with Mohs micrographic surgery existing as its primary skin cancer treatment modality. TSD provides care for thousands of patients each year, ranging in age from teenagers to seniors of advanced years. In the last three years, it has expanded to eight locations throughout central Texas, and has added services and medical personnel to keep up with its growth. That growth has been substantially influenced by the increase in baby boomers needing access to care for sun-induced skin cancers. Although TSD has many service line offerings including cosmetics, a key driver in TSD's growth has been its skin cancer treatment volume, which has increased along with the aging segment of its target markets.

TSD's structure is typical of a dermatology practice, in this case manifesting as a for-profit, sub-S corporation owned entirely by the company's Chief Executive Officer (CEO) and spouse. The company CEO is also the company's president, with a Chief Operations Officer (COO) serving as his direct report. The COO oversees all financial, marketing, clinical operations and development endeavors, with a clinical practice administrator, information

technology manager, and accountant as his direct reports. The CEO and COO share responsibilities of oversight and contractual obligations toward the company's medical providers, totaling three physicians and five midlevel (PA/NP) providers. The remainder of staff includes an injection nurse, two triage nurses, an aesthetician, twenty medical assistants, ten patient care coordinators, a biller, and a products specialist.

TSD's Needs Assessment

TSD realized that in order to meet the needs of the growing senior population, it needed to expand locations, and add to its service line offerings in pursuit of differentiation from its competitors, while maintaining profitability in an era of managed care moving toward pay-for-performance outcomes (Wolper, 2011). The pursuit of that differentiation is requisite with an understanding of where the company was currently, and where it wanted to go, or its stated goals. Those goals must align with the company's mission and vision, and be achievable with current and/or future resources. TSD had to give critical thought toward its mission which has been to meet, and when possible exceed the needs of both its internal and external stakeholders, and tie that to its vision for long-term growth. Based upon that thinking, TSD had to also critically look at itself from a perspective of its lack of non-surgical alternatives for patients with skin cancer.

In order to substantiate that premise, TSD decided to focus on its most populous market segment in the form of the baby boomers, by asking patients what they believed were their needs as it centers on dermatology, and specifically skin cancer. The feedback garnered, indicated that because of conditions associated with aging, and any comorbid conditions they might have, seniors were looking for alternatives to solely surgical interventions. To put it frankly, they were

tired of being ‘cut on’ all the time, and were open to the idea of non-surgical alternatives. There was also concern about being able to spend what amounted to an entire day during Mohs micrographic surgery, and the often necessary return visit the next day for final closure of the wound. When asked if they would be open to the idea of being treated with superficial radiotherapy over the course of several weeks, patients happily said “yes,” as they were already routinely making trips to see other specialists, which could coincide with superficial radiotherapy visits.

Data examined to further TSD’s intent to target baby boomers and their generation X caregivers also included database mining, and evaluation by TSD’s contracted marketing partners. TSD was an early adopter of electronic medical records, and after having been in operation for over ten years, it is afforded the luxury of a large database of patients. Pursuant to HIPAA guidelines, reports run from the system have allowed TSD to look at age ranges and/or patients, past visit information, and potential comorbid conditions, indicating prime candidates for superficial radiotherapy in the future ("HHS," n.d.). Additionally, SEO management conducted by TSD’s marketing partners has allowed for evaluation of customer interest in the technology (Weiss, 2013). Based upon positive feedback from patients, database mining, and SEO interest validation, TSD felt confident in pursuing superficial radiotherapy as one of its marque service line offerings. TSD then considered its own associated needs for bringing the technology into its service line offerings, based on an intervention believed culturally appropriate, further two-way interaction between itself and its baby boomer patients and their generation X caregivers, in an attempt to improve its customer loyalty, and market position (Chang et al., 2014; Tesseras, 2014).

Identification of Stakeholders

TSDs identification of stakeholders goes beyond the obvious market segment of baby boomers. Stakeholders are recognized as both internal and external customers required to bring the proposed technology to the baby boomers. Internal customers manifest as board certified dermatologists trained in the use of superficial radiotherapy and radiation safety, board certified radiation therapists, medical physicists trained in the usage of superficial radiotherapy, supporting staff trained in radiation safety, and potentially a radiation oncologist based on the requirements of a practice's state regulators. Additionally, either one of the dermatologists, or radiation therapists must be designated as the radiation safety officer for program oversight. Lastly, there is requisite input required from TSD's executive team toward how the program will be funded, its operational budget and control mechanisms.

External customers manifesting as stakeholders include the baby boomers themselves, but also their immediate caregivers noted as their grown children, or generation X population in the 32-50 year old population, recognized as lifestyle approach consumers (Ogden & Ogden, 2014). That group is seen as key in importance as they tend to be internet savvy, and involved in the care of their baby boomer parents. Drilling down even further, it was noted that the generation X caregiver most involved in their baby boomer parent's care, tends to be female. That household decision-making segment of TSD's market share is seen as key in importance, and aligns well with its other service line offerings of skin care, for themselves, their own children, and their baby boomer parents. Lastly, external customer stakeholders are recognized as commercial insurance carriers, TSD's regional Medicare administrative contractor, Texas State regulating officials, TSD's malpractice and commercial insurance underwriters, contracted

marketing individuals, the superficial radiotherapy technology suppliers, and TSD's financial capitalization partners.

Managed Care Considerations

Although more relevant currently to hospitals, providers must remain cognitive of the realities associated with managed care before embarking on new endeavors, and TSD believes that the use of superficial radiotherapy is well-suited for use within the managed care era. Pay for performance has been talked about for a while, with renewed interest as better patient outcomes are appearing with quality. Providers and HCOs must give consideration not only to patient care, but also to patient outcomes which invariably will drive reimbursement as time goes along. Under meaningful use, TSD's providers are required to attest to criteria assessed about the patient, or suffer decreased reimbursement. Additionally, it is likely that patient outcomes will drive reimbursement, with those providers and HCOs demonstrating best outcomes receiving favorable reimbursement, and being in the best positions for negotiating contracts with commercial payers (Stanowski, Simpson, & White, 2015).

Quality measures have also been seen as improving in the era of managed care. As HMOs came and went, the evolution of managed care dictated that in order for HCOs to remain competitive they needed to look for value-added features in order to create differentiation (Jiang, Friedman, & Jiang, 2013). Quality measures must align with a HCO's mission and vision, and are requisite with employee empowerment and decision-making, in order to make them effective. TSD understands that for the new service line offering to succeed, its executive staff has to embrace feedback from stakeholders to ensure needs are met (Wynne, 2003). It is simply easier

to market a program that boasts quality measures, and creates buy-in from stakeholders, while at the same time offering opportunity for cost savings consubstantial with managed care.

Prevention of disease is another aspect of managed care considerations relevant to today's HCO environment. Attestation of systems review, and prevention instructions by providers as mentioned earlier as part of meaningful use is part of that consideration. However, HCOs and providers need to look beyond meaningful use toward 'true' preventative patient education. TSD started, and maintains, a not-for-profit organization with two purposes, skin cancer prevention due to sun exposure, and in raising funds to build shade structures for children's playgrounds. Along with simply being the right thing to do, TSD feels compelled to give back to its communities through prevention, in addition to caring for its patients.

Regulatory and Legal Considerations

Regulatory considerations for utilizing ionizing radiation in a therapeutic approach vary by state, and those dermatology offices attempting to pursue such endeavors will need assistance in securing registrations. TSD has a registration for this technology which was laborious in attainment, and requisite with succinct policies and procedures for use with patients, and radiation protection. Approval from the State of Texas takes a significant amount of time to gain, and is requisite with annual surveys of the program and its controls. Film badge dosimetry (received radiation records) for employees and providers requires succinct record-keeping, and documentation of patient treatments must be carefully maintained. Such programs are also requisite with support from board certified medical physicists, often radiation oncologists, and a specified radiation safety officer. Dermatologists must be trained in radiation safety, and only they, and board certified radiation therapists, are allowed to treat patients with the technology.

Malpractice and commercial insurance provisions must also be taken into account under legal considerations. With the utilization of superficial radiotherapy, dermatology practices must give consideration to their level of malpractice insurance coverages. Additionally, those practices should give consideration to their levels of commercial insurance in order to mitigate potential liability from accidents or a misadministration. Since the concept of dermatology practices using the technology is fairly new, care must be taken to ensure coverages are adequate under state law, including states with tort reform. Practices may also want to consider individual policies for those individuals serving in contractual roles such as radiation therapists, radiation oncologists and medical physicists.

Economic Considerations

Economic considerations will be significant when pursuing the addition of superficial radiotherapy to a dermatology practice, and consideration toward the economic sustainability of the endeavor should be taken into account. Practices must give diligence toward not only the cost of the equipment necessary to carry out the treatment, but also to the additional overhead associated with it, compared to potential reimbursement. Such costs will include insurance, maintenance agreements, radiation therapists, medical physicists, and in some cases vehicles designed to transport the units. There will also be associated costs with facility build out, which will normally entail adding lead to walls, or replacing existing walls with leaded sheetrock. All of the aforementioned should be taken into consideration when preparing an operational budget for the endeavor, which can easily exceed several hundred thousand dollars in the first year for each of the treatment units.

Reimbursement Considerations

Dermatology practices pursuing such endeavors should give consideration to reimbursement. Such reimbursement will vary greatly based upon geographic location, and negotiated insurance contracts. However, because of the very nature of patients manifesting as baby boomers, they will likely be covered under Medicare reimbursement. Providers must be cognizant of the realities of patients having payment responsibilities when they do not possess a Medicare supplemental or secondary plan, potentially resultant in upset patients if they receive a large bill in the mail. Dermatologists need to take the time to explain the potential benefits, and work with patients so they understand their responsibilities.

Each region of the country is overseen by a Medicare administrative contractor, and they are responsible for making payment to providers. Since they are independent of one another, providers and practice administrators should take time to look up fee schedules, and have a strong understanding of the codes used for treatment. Often times, it is necessary to include modifiers to bill submissions in order to get properly paid. Homework done on the front end of the process will help to mitigate reimbursement issues later. Practices should also stay abreast of potential reductions in reimbursement, which tend to happen as technology utilization increases. Lastly, succinct record-keeping must be maintained in case of audit by one of Medicare's recovery audit contractors, in order to justify treatments and charges (Squire, 2016).

The Implementation Plan

The implementation plan must start with an analysis of how the desired technology marries with the organization's mission and vision. Next, stakeholder needs are requisite with being met, therefore, copious communication about the tasks and support levels necessary must be communicated to providers and support personnel team as it centers on the opportunity. Care

must be taken to ensure, who, what, where and when are clearly spelled out, along with how the endeavor will be evaluated through control measures and sustained improvement. Lastly, feedback mechanisms, necessary training, and written documentation of the plan's implementation should be made available to pertinent stakeholders ("AHRQ," 2014).

In TSD's scenario the implementation plan begins with communication between key stakeholders, an operational budget, and acquisition of capital financing. Upon capitalization, necessary equipment can be ordered, along with advertising for qualified support personnel, and initial marketing. Policy and procedure development is undertaken prior to technology acquisition for submission to the appropriate state entity, along with necessary post-registration documentation from the manufacturer deliverable to the regulating entity. During the final regulatory approval process, and after receipt of the technology, training of the necessary providers and support staff can take place. Lastly, control and feedback mechanisms will be implemented, along with the finalized marketing plan and operational budget.

The Marketing Communication Plan

In the case of TSD, its marketing and communication manifest as integrated in nature, by combining its mission and vision with its strategic planning into a seamless program (Ogden & Ogden, 2014). In other words, the firm looks to marry new endeavors such as superficial radiotherapy with its overall marketing platform, requisite with consideration of its market position, its branding, and feedback from key stakeholders including its executive management team, its providers, those who will provide the services, and input from its contracted marketing partners. Careful consideration of the targeted market segments includes evaluation of consumer demographics and psychographics in order to offer the best chance for reaching the intended

consumers. That premise goes beyond just selling goods and services, an instead represents a mantra for succinct marketing in line with consumer relationships, which allow for customer loyalty over the long-haul (Tesseras, 2014).

With the concept of marrying superficial radiotherapy with strategic planning, potential effect on brand identity, a carefully thought out operational budget, consideration of the firm's market presence and competition, and feedback from key stakeholders in hand, the marketing of the new service line can begin. Based on database mining, the target segments will include the baby boomers themselves, and as mentioned earlier, their generation X caregivers, by demonstrating a non-surgical alternative to traditional surgical interventions. The mechanisms to be used will include radio advertising, periodical advertising, direct mailers, and in-office graphics designed to 'peak' consumer interest in the technology. Deemed key in importance, TSD will also use a robust social media campaign specifically targeting the generation X segment who are believed to spend significant amounts of time using social media (Ogden & Ogden, 2014).

Implementation Plan Measurement of Effectiveness

Even the best intended plans for implementation can fail to achieve desired results if not evaluated on an ongoing basis for effectiveness, process and quality improvement and cost savings. Therefore, it is imperative that those carrying out the implementation fully understand the technology, their roles, tasks, and associated timelines, or benchmarks for implementation. Based on that thinking, there exists the need for copious communication and reporting mechanisms as feedback toward the endeavor, as well as flexibility built into the implementation plan allowing for necessary changes (Wolper, 2011). As it centers on TSD, that will be measured

based on adherence to budgetary constraints, reporting and feedback from key personnel toward benchmark success and necessary changes, recognition of new consumer-adopters of the technology, and reports from TSD's marketing partners regarding SEO inquiries.

There must also exist consideration to the overall results as they affect TSD's market differentiation. Monitoring of competitors' willingness to pursue the new technology is likely to manifest, which can dilute brand awareness and profitability over time. Consideration must be given toward the quality of the new technology's application from a patient benefit perspective, as well as how the cost of providing the technology can be reduced over time. In other words, TSD must remain cognizant of how the technology offering marries with the concept of managed care, and pay-for-performance based on outcomes. Careful thought toward how the offering of non-surgical solutions to an ever-growing patient population offers tremendous opportunity if controlled from a management engineering perspective (Wolper, 2011).

Conclusion

The baby boomer generation has created a problem which also manifests as opportunity for HCOs to look for mechanisms which appeal to a large target segment of patient-consumers. Because of the high prevalence of basal and squamous skin cancers associated with baby boomers, there exists a significant opportunity for offering non-surgical alternatives to addressing skin cancers. This paper examined the benefits of superficial radiotherapy as a non-surgical alternative to traditional surgical interventions in a dermatology setting. Consideration was given toward how the technology can benefit the baby boomer population, and how it marries with the concepts of the ACA and managed care. A real-life dermatology practice was

presented as an example for implementing the technology based on its needs assessment, and regulatory/legal, economic and reimbursement considerations. Lastly, the paper examined implementation, marketing and evaluation of the proposed implementation plan, and an attempt was made to tie those elements to the company's communication integration, consubstantial with its mission and vision.

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