

Equipment and Inventory Management in Dermatology

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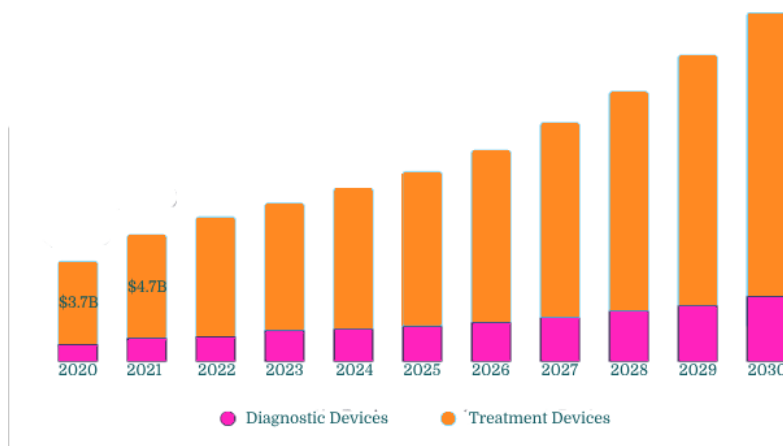
Introduction

Dermatology is a rapidly growing field in the global market. The Global Dermatology market is divided into many segments including dermatology devices, medical dermatology, dermatopathology, pediatric dermatology, and cosmetic dermatology (Emergen Research). The Global Dermatology market size in 2021 was 1.11 billion and is expected to accumulate a revenue of 6.9% (Emergen Research). This increase in revenue is due to the growth of the pharmaceutical industry, an aging population, the presence of an out-of-pocket cosmetic segment, an increased awareness of skin health, and advancements in laser treatments (DelGrosso). As such a large part of dermatology is based on cutting edge technology and equipment, this paper's aim is to focus on inventory and equipment management immersed within dermatology.

Key players in the Global Dermatology market are Allergan PLC, Takeda Pharmaceuticals, Pfizer Inc, DermBiont Inc., Novartis, and Galderma. Some key players in the Dermatology Devices market include Alma Lasers GmbH, Syneron Medical Ltd., Image Derm, Inc., Bausch Health Companies Inc, Genesis Biosystems, Inc, and Heine Optotechnik GmbH & Co. Kg. The Global Dermatology Devices market size was valued at over USD 12.5 billion in 2021 and is anticipated to grow at a compound annual growth rate (CAGR) of 11.9% over the forecast period (Grand View Research).

Dermatologic devices can be divided into two overarching categories: diagnostic devices and treatment devices. Diagnostic devices include dermatoscopes, microscopes, imaging devices and biopsy devices. Treatment devices include light therapy devices, lasers, electrosurgical equipment, liposuction devices, microdermabrasion devices, and cryotherapy devices.

U.S. Dermatology Devices Market



Information taken from Grand View Research: <https://www.grandviewresearch.com/industry-analysis/dermatology-devices-market>

As shown in the above graph, treatment devices will have an exponential growth in market within the next 10 years. According to Grand View Research, the treatment devices segment held about 79% of the market share in 2021 and will continue to grow. This is mainly due to the wide applications of dermatology treatment and the implementation of novel technologies such as lasers.

Cosmetic Dermatology Leading with Sustainable Growth

When it comes to dermatologic practice, profitability is dependent upon payer mix (dependent on insurance), procedure mix, organizational efficiency, leverage of fixed overhead, and ancillaries (DelGrosso, C. 2023).

The dermatology industry is steadily changing in response to shifting customer preferences from medical dermatology to cosmetic dermatology. Cosmetic dermatology focuses on improving the appearance of the skin, hair and nails through non-surgical and minimally invasive procedures in order to enhance the skin's overall appearance (DelGrosso, C. 2023). The cosmetic dermatology segment accounted for a significant revenue share in the Global Dermatology market in 2021 (Emergen Research). These include Botox injections to reduce the appearance of wrinkles and fine lines, dermal fillers to add volume to the face and lips, chemical peels to improve skin texture and tone, laser treatments to correct skin pigmentation, as well as

microdermabrasion to exfoliate the skin and reduce the appearance of fine lines (DelGrosso, C. 2023).

Botox and laser resurfacing are two cosmetic procedures that can help reduce signs of aging such as fine lines, UV damage, and loss of collagen. Physician fees vary from \$450–\$850 for Botox and fillers to \$1,400–\$2,500 for non-invasive fat reduction, laser skin resurfacing and non-surgical skin tightening (DelGrosso, C. 2023). Among the treatment devices, laser products held the largest share in 2021 and will also record the fastest CAGR over the forecast period owing to the wide usage of laser products (Grand View Research).

According to the International Society of Aesthetic Plastic Surgery, treatments such as non-invasive fat reduction witnessed a 21.1% increase, laser hair removal witnessed a 76.1% increase, and photo rejuvenation had a 32.3% increase in 2020 as compared to 2019. This indicates that the demand for aesthetic treatments is increasing (Grand View Research). According to a recent benchmarking report based on 2019 pre-COVID data, the revenues per FTE physician for cosmetic dermatology (approximately \$1.8 million) is higher than that of medical dermatology (approximately \$1.3 million) (DelGrosso, C. 2023).

Laser Equipment

One of the major upcoming trends in the global dermatology market is advancement in laser technology. In the last 20 years, advancements in laser technology have revolutionized laser use in the treatment of many skin conditions including vascular and pigmented lesions, the removal of tattoos, and the minimization of scars and wrinkles. These laser treatments have demonstrated notable effectiveness in treating skin issues with little skin damage.

The mechanism of action of these lasers involves laser frequencies that target and kill specific cells with destroying the surrounding cells. As different cells are composed of different proportions of elements, they absorb light differently. For example, vascular skin lesions contain oxygenated hemoglobin, which strongly absorbs visible light at 418 nm, whereas pigmented skin lesions contain melanin, which absorbs light at a different frequency. Infrared lasers are broadly destructive because they are absorbed by water in and between skin cells. Short pulses reduce the amount that the damaged cells heat, thereby reducing thermal injury that could result in scarring (Dermnet).

These laser machines cost thousands of dollars, but are a great investment to some practices. By having laser equipment in practice, practices can attract a broader range of clientele who will come to the office just for the laser treatments. Instead of solely offering medical

dermatology treatments, dermatologists can also provide cosmetic treatments in the same appointment. Lasers can be used to treat popular complaints including discoloration, port wine stains, rosacea, acne scars, hair follicle stimulation, and hair follicle destruction.

Dr. Chacon, MD, advises to perform due diligence on competitors offering similar services, including MediSpas and aesthetic and cosmetic physicians. If there is an opening in the local market, the most important differentiator is expertise. Dermatologists need to perfect their skills with any new equipment. Staff should also be well-informed about the new services offered so that they can inform patients about what to expect and potential benefits/risks. Dr. Chacon also recommends practices take the time to analyze approximate patient demand, office space required, schedule availability, overhead costs, and time and money spent on staff training. This helps identify possible devices that are a good fit for the practice's needs.

Med Spas as a Consumer-Directed Offering

Med Spas are a popular new trend that have been emerging in big cities. It is a combination of a non-medical spa center that provides traditional spa service such as facials, massages, body wraps but also has a dermatologist overlooking any cosmetic dermatology inclusions such as laser hair removal or Botox injections. These procedures are relatively low risk and have little to no comorbidities which is why medical dermatologists have differing opinions on whether they want to practice cosmetic dermatology. Med Spas advertise themselves as a "one-stop shop."

However, being a 'one-stop shop' requires significant control over inventory and equipment. These med spas have to manage a variety of aesthetic dermatology machines and tools in addition to the standard Medical and Surgical Supplies. These include equipment for, Laser therapy, Light therapy, Mechanical exfoliation, Liposuction, Spa treatment, and Spa treatment tables. Just using Laser Therapy as an example, below is a table illustrating the different types of laser procedures, the corresponding average physician fee per treatment, and the differing machines that can carry out such a procedure. In addition to the cost of the machine, these factors need to be considered as well before purchasing a machine as equipment for practice.

Dr. Anna Chacon, MD, from *Dermatology Times* states it is important to compare devices and calculate the amount of profit per unit of time. She recommends buying only one device at a time and to beware of hidden costs for devices including consumables, maintenance, follow-up visits and service contracts that can be up to \$10,000 per year (*Dermatologytimes*). These are all

considered lost revenue. An additional lost revenue could come from hidden costs for devices that include consumables, maintenance, and follow-up services. These can cost up to \$10,000 per year (Dermnet).

Dr. Chacon also concludes it is important to consider buying, renting, leasing, or purchasing a used device. When renting devices, lasers are usually not the latest ones on the market; however, renting can help determine if a practice has enough demand to actually purchase the item since lasers are extremely expensive machines (Dermatologytimes).

Equipment Management

One of the main goals of healthcare is to balance the 'iron triangle' of cost, accessibility, and quality. America has been struggling with all three of these pillars with the largest disparity between healthcare spending vs. quality of care given. America spent \$3.2 trillion on healthcare in 2016, with medical supplies and equipment accounting for the most significant spike in healthcare spending (Modern Healthcare). In 2020, hospital spent \$93 billion on medical equipment lifecycle costs and were missing savings up to 16% (Becker's CFO Report)

Accruent suggests four considerations when it comes to managing equipment: 1) Knowing what is included, 2) Managing priorities effectively, 3) Gathering intel, and 4) Having a cost-reducing strategy.

To know what is included in purchasing equipment, a company must first familiarize themselves with factors that contribute to the Total Cost of Ownership (TCO) such as purchase, repairs, maintenance, upgrades, service, support, installation, and training. Furthermore, a company should be aware of the components involved within the lifecycle process of equipment. The lifecycle process encompasses stages of conception, design, deployment, acquisition, operation, maintenance, decommissioning, and disposal (CPS). Factors that contribute to the lifecycle process include planning, specification, procurement, installation, warranty, operation, and disposition (Accruent). Questions to ask are: "Will the new equipment work with the current technology? If upgrades are needed, what are those costs? Will staff have to learn new technologies to operate the equipment? How flexible is the material for future changes in technology (Accruent)?"

Furthermore, it is important to manage priorities effectively by balancing risk, cost, and benefits. Accruent organizes 5 questions to ask including when purchasing equipment. These are: Will the equipment provide better care? Will it improve efficiency? Will it bring in Revenue?

Will it Lower Maintenance Costs? And will it attract new patients? The components will help assist in the decision making if the total cost is worth the return on the investment.

As in all decision making, gathering intel is extremely important. When it comes to equipment purchasing, it is important to compare product specifications, installation requirement, and price benchmarking data as well as having a transparent information pool (Accruent). Physicians and healthcare organizations should have a cost-reducing strategy including equipment standardization, contract compliance, early decisions, strategic sourcing, and enterprise asset lifecycle management (Accruent). Lastly, equipment should always be up to date.

Inventory Management

Maintaining an inventory in a dermatology practice is crucial for ensuring that the clinic operates smoothly, treatments are conducted efficiently, and patients receive the best care possible. The types of items that might be included in a dermatology practice's inventory include medical supplies (gloves, face masks, gauze pads, etc.), topical medications (antibiotics, corticosteroids, antifungals, etc.), equipment (dermatoscopes, cryotherapy, laser and light therapy, biopsy punches, etc.), diagnostic tools (skin analysis devices, Wood's lamp, etc.), injectable treatments (botox, dermal fillers, prescription medications), administrative supplies, and storage and organization supplies.

The treatment supplies and retail products used in medical aesthetic practices represent the second-largest operational expense, after personnel costs. (Myers, 2014). Inventory control is incredibly important in the aesthetics practice because many of the products are high-value and “Items like fillers and toxins such as Botox are expensive and they can tend to walk away if you don't keep track of them” (www.pesconsultants.com). Inventory management is the process of overseeing and controlling the items or materials a business holds in stock. Effective inventory management ensures that a company has the right quantity of products on hand, at the right time, and in the right place, while minimizing costs, waste, and stockouts.

Czenko& Peffley recommend 6 steps to keep inventory organized and accounted for. The first step is to accurately define inventory. Different categories include single-use consumables in treatment such as a syringe of filler, multi-use consumables such as cleansers, medical supplies such as gowns and needles, retail supplies such as prescriptions o skincare products, and “free” goods such as special promotions (Czenko& Peffley 2021). It is important to keep track of all these categories to ensure they are used for their intended purposes.

The second step is to properly account for and organize inventory. The authors recommend the first-in, first-out (FIFO) approach as it ensures that the most dated purchased consumables such as an injectable that will expire are the first to be used. The third step is to assign responsibility and set inventory protocol. The authors point out that an office most likely has multiple people and even locations handling and using inventory which requires proper management of staff. Staff should be responsible for entering products into inventory, sorting inventory, and tracking the inventory as it is used.

The fourth step is to safeguard inventory from loss. Losses include product expiration, theft, over use, add-ons to treatment waste of product, and gifts with purchases (Czenko & Peffley 2021). The authors recommend that all of these will impact the value of the inventory and best be avoided. The fifth step is to monitor and audit inventory. The authors recommend having an additional system outside of the practice management software. Checks and balances should be applied. The sixth and final step is to maintain proper inventory levels. The authors recommend at least two weeks' supply as it will protect the practice from falling short on supplies without overspending on materials.

Summary

Dermatology is an ever-growing field, with advancements in technology and equipment fueling its growth in the global market. This growth has been largely due to treatment devices in which laser therapy and cosmetic procedures are leading the way. Inventory management of cosmetic products as well as equipment management of advancing technology are crucial aspects of running a dermatology practice efficiently, as well as in emerging 'Med-Spas.' Properly managing equipment and inventory helps ensure patient care, safety, and the smooth operation of the facility. Equipment management techniques include knowing what is included, managing priorities effectively, gathering intel, and having a cost-reducing strategy. Inventory management techniques include conducting routine audits of inventory to track usage, identifying expired items, and using the "first in, first out" principle to rotate stock and prevent items from expiring products. Regular monitoring, proper storage, and efficient ordering processes are key components of this management. Effective management of equipment and inventory in dermatology is crucial for providing quality patient care, maintaining a safe environment, and running a successful practice.

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