Toward Sustainable Dermatology

Cutting Waste, Eliminating Low-Value Care, and Increasing Efficiency

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KEYWORDS

• Carbon footprint • Climate change • Environmental indicators • Greenhouse gases • Dermatology • Environmental justice • Low-value care

KEY POINTS

- High value care is evidence-based and delivers significant benefits across 5 key areas: improved patient outcomes, reduced waste, time efficiency, cost savings, and decreased resource consumption.
- Implementing high-value care does not require new interventions, as the necessary evidence is already available for immediate integration into practice.
- Widespread adoption of high-value care is hindered by various barriers. Proposed solutions are described which aim to address these challenges.
- While adopting high-value care requires a shift in mindset, its benefits are far-reaching, positively impacting patients, health care providers, the environment, and future generations.

INTRODUCTION

Significant variability exists in the delivery of health care. While factors such as differences in health care funding, illness severity, and patient preferences can contribute to this variability, a significant proportion is influenced by physician preferences[1] and supply-sensitive factors where the availability of physicians, health care facilities, and medical equipment drives the overutilization of these services.[2] Much of this variability lacks a scientific basis, unnecessarily increases cost and does not enhance clinical outcomes.[3] The Dartmouth Atlas and the National Health Service (NHS) Atlas track this variability and highlight numerous examples of significant underuse of effective care.[4,5]

This article explores the concept of high-value care as a strategy to address variability within dermatology, highlights the close connection between high-value care and sustainable dermatology, and discusses the barriers to implementation along with potential solutions (**Fig. 1**).

HIGH-VALUE VERSUS LOW-VALUE CARE

Up to 40% of health care may be wasteful, termed *low-value care*.[6,7] This waste can take 2 primary forms: financial and environmental. Financial waste directly affects patients through out-of-pocket expenses for unnecessary services and indirectly, by straining health care systems, driving up expenditures, and diverting resources away from essential services. Environmental waste occurs when unnecessary

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Abbreviations

AAD	American Academy of Dermatology
AUC	Appropriate Use Criteria
CO_2e	carbon dioxide equivalent
CSU	chronic spontaneous urticaria
CXR	chest x-ray
EMRs	electronic medical records
GHG	greenhouse gas
NICE	National Institute for Health and Care Excellence
NHS	National Health Service
QALY	quality-adjusted life year
SSI	surgical site infection
TB	tuberculosis

medical practices generate excessive waste and consume resources without providing meaningful benefits, and the environmental impacts may be harmful to populations and future generations.

Additionally, low-value care may harm patients physically, psychologically, and socially.[8] Physically, unnecessary tests or treatments lead to iatrogenic complications such as infections, adverse drug reactions, or injuries from invasive procedures. Psychologically, false positives from unwarranted tests or biopsies often result in anxiety and stress. The time and resources devoted to low-value care can also delay critical interventions, adversely impacting patient outcomes. Such practices can erode trust in health care providers when patients perceive that unnecessary or ineffective care is being prioritized.

The *Choosing Wisely* campaign,[9] supported by 75 specialty societies, including the American Academy of Dermatology (AAD)[10] advocates for reducing unnecessary care while enhancing patient outcomes. High-value care and sustainable dermatology are tightly coupled making them complementary rather than zero-sum goals. In this article, the 5 pillars of high-value care will be explored in detail, with a specific emphasis on their application to dermatology (**Fig. 2**). These principles are not isolated concepts; instead, they overlap significantly, with each enhancing and supporting the others. **Table 1** provides specific examples of high-value care in both dermatologic surgery and medical dermatology.

IMPROVED PATIENT OUTCOMES

Prevention is a cost-effective, high-impact approach to care that reduces overall health care utilization and, in turn, lowers carbon emissions. Primary prevention of skin cancer—achieved through strategies like physical, topical, or systemic UV protection, combined with educational and behavioral interventions—significantly reduces skin cancer risk.[11] These benefits also extend to secondary prevention, which focuses on early detection, and tertiary prevention, aimed at preventing disease progression and identifying recurrences.[12] Focused preventive care is more impactful than general screening because it targets individuals most likely to benefit.[13,14] Screening for cardiovascular risk factors and providing education on cardiovascular disease in patients with psoriasis is another example of highly effective preventive medicine.[15] This strategy is lifesaving, as cardiovascular disease is the leading cause of excess mortality in individuals with psoriasis.[16,17] This may prove true for other inflammatory skin diseases, such as hidradenitis suppurativa, and others.

Adherence to the most up-to-date clinical guidelines also improves patient outcomes while supporting environmental sustainability. For

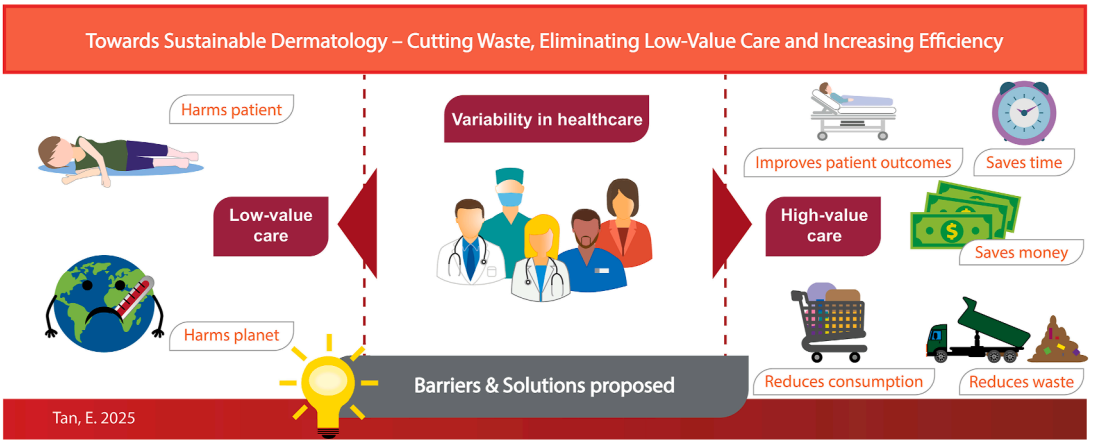

Fig. 1. Graphical abstract—toward sustainable dermatology.

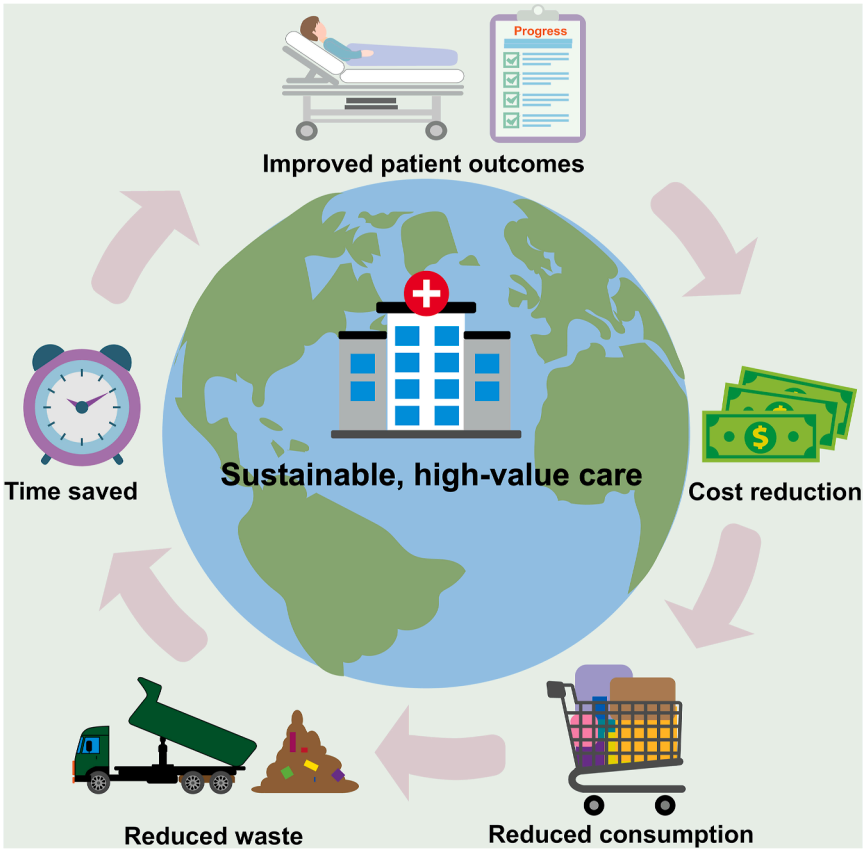

Fig. 2. High value care.

instance, transitioning melanoma follow-up care in England from the 2015 National Institute for Health and Care Excellence (NICE) pathway to the 2022 pathway reduces the carbon footprint by decreasing unnecessary follow-up visits, despite the increase in more effective radiologic surveillance.[18] One study at a single institution demonstrated that following the implementation of Mohs Surgery Appropriate Use Criteria (AUC) the percentage of tumors that underwent Mohs surgery and were deemed appropriate according to the AUC, exceeded 90% at an institution. This yielded significant benefits including cost savings for the health care system and improved patient outcomes by avoiding unnecessary tissue removal and minimizing the risk of surgical complications.[19]

Patient outcomes can also benefit from the adoption of a more streamlined health care model. Current NICE guidelines for tuberculosis (TB) screening prior to biologic therapy initiation recommend using an interferon-γ release assay, supplemented by chest x-ray (CXR) to assess active disease. However, given the high sensitivity of interferon-γ release assays (~96%) and the low sensitivity and specificity of CXR, reliance on CXR introduces several drawbacks. These include potential harms such as increased health care costs, exposure to ionizing radiation, the discovery of incidental findings ("incidentalomas"), and the false reassurance provided by normal CXR results.[20] Emerging evidence also supports discontinuing repeated latent TB infection screening after tumor necrosis factor-α inhibitor initiation in low-risk populations and eliminating the need for such testing entirely for specific low-risk biologics such as ixekizumab and dupilumab.[21,22] This approach enhances patient and population outcomes by minimizing harm, reducing treatment delays, and lowering health care costs.

REDUCING WASTE

Interventions that reduce waste, increase efficiency by achieving the same results with lower resource consumption. Effective waste segregation is crucial, as improper practices can cause non-hazardous waste to be treated as hazardous. This not only increases costs—hazardous waste disposal can be up to 10 times more expensive

Table 1
Examples of high-value care in dermatology

Dermatologic Surgery High-Value Care	Wasteful/Low-Value Care	Comments
Clean, non-sterile gloves are safe and effective for use in dermatologic surgery	Sterile gloves for every procedure	A systematic review assessing sterile vs non-sterile gloves in cutaneous surgery and common outpatient dental procedures found no difference in postoperative SSIs.[95]
Field sterility is appropriate and adequate for dermatologic surgery	Full patient draping	Full patient draping is costly, wasteful, and does not reduce SSIs for dermatologic surgery.[36–38] There is also no difference in SSIs between disposable vs reusable gowns/drapes.[96,97]
Reusable surgical caps and clean scrubs for dermatologic surgery	Disposable surgical caps and total body gowns	There are no well-conducted studies proving that sterile surgical gowns lower SSI rates compared to non-sterile surgical gowns. There is no evidence that disposable surgical caps are more effective than reusable hats in reducing SSIs.[98]
Clean surgical attire and surgical masks to protect the surgeon and scrub-nurse is adequate	Excessive surgical garb including head covering, sterile gowns, and dedicated theater shoes	Many studies addressing surgical attire for prevention of SSIs are observational or limited by small sample size.[51] The cause of SSIs are multifactorial and in many instances are related to endogenous (patient) and exogenous (surgery) factors.[40,41,43–46]
Waterless hand antisepsis	Water-based hand scrubbing for every procedure	Waterless hand antisepsis is as effective as a chlorhexidine water-based scrub based on a systematic review.[99]
Use topical antibiotics only in specific circumstances such as surgery on the lower legs in diabetic patients or in a previously infected wound	Topical antibiotics for every procedure	Routine topical antibiotics are not recommended as their use has not been shown to decrease SSI incidence but can cause contact dermatitis.[100–102]
Adhere to the Mayo Clinic recommendations for antibiotic prophylaxis	Routine postoperative oral antimicrobial use	The Mayo Clinic protocol is an amalgamation of guidelines from 3 large societies: American Heart Association, American Dental Association, and the American Academy of Orthopaedic Surgeon guidelines.[103] The abuse of antibiotics is a major cause of bacterial resistance.[104] For patients without high-risk factors undergoing lower leg surgery, shared decision-making is an effective approach to reduce post-operative antibiotic use, enhance patient satisfaction, and maintain favorable outcomes.[105]

Use absorbable sutures or dermal sutures (without epidermal sutures) where appropriate	Non-absorbable sutures for every case	Using only absorbable or dermal sutures eliminates the need for patients to travel for suture removal, saving time for health care professionals and administrative staff, as well as reducing the use of additional supplies. A follow-up survey of patients after Mohs surgery found that those with longer drive times to the clinic were more likely to prefer absorbable sutures, especially when reconstruction involved primary closure.[106] Absorbable sutures achieve the same cosmetic results and SSIs.[107–110]
Using reusable surgical instruments	Using single use surgical instruments for dermatologic surgery	Swapping from single-use surgical instruments to reusable instruments reduces global warming potential by up to 227%.[111]
Buffered and diluted local anesthetic use	Unbuffered, undiluted local anesthetic	Buffered and diluted lidocaine to concentrations as low as 0.25% reduces injection pain,[76] and is as efficacious as undiluted lidocaine while being cost effective.[77,112]
Re-using the same instruments during Mohs tumor extirpation.	Using a new set of instruments for every stage of Mohs tumor extirpation.	Re-using the same instruments during Mohs tumor extirpation does not increase SSIs and is more sustainable.[113,114] However, clear protocols must exist to prevent the use of wrong instruments.[115]
Medical Dermatology		
High-Value Care	**Wasteful/Low-Value**	**Comments**
Think of preventive care at every clinical encounter	Treating disease without consideration of prevention	Preventive medicine, particularly when targeted at high-risk groups, reduces the burden of disease by preventing illness.[11–17]
Adhere to best practice guidelines for management of dermatologic conditions	Managing patients based on perception alone without regard for best-practice guidelines	The *Choosing Wisely* campaign[9] has involved organizations such as the AAD and the ACD to produce guidelines which improve quality and reduce unnecessary spending. Guidelines are available at: https://www.choosingwisely.org/
Adopt a personalized approach to laboratory or radiologic monitoring	Requesting a battery of tests for the evaluation and monitoring of each patient to ensure nothing is overlooked	Follow patient management guidelines closely and ensure that they are regularly updated and streamlined.[9,10,86,116]

(*continued on next page*)

Table 1
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Medical Dermatology High-Value Care	Wasteful/Low-Value	Comments
Be part of an outreach clinic or engage in telehealth	Offering services only at a single, urban site and not engaging in telehealth	Out-reach clinics provide care closer to home for patients and reduces total distance traveled/vehicle-related emissions.[117] It also reduces out-of-pocket expenses for patients such as lost-time from work, lodging/meals, and vehicle-related costs such as tolls/parking.
Separating waste into hazardous, non-hazardous, and recyclable categories	Throwing all medical waste into the hazardous waste bin	Accurately separating recyclable materials, landfill-bound waste, and hazardous medical waste is essential for effective waste management. When landfill waste is mistakenly classified as biohazardous material, it undergoes unnecessary decontamination and treatment, leading to higher financial and environmental costs.[118] Effective staff training and clear, understandable signage can significantly improve compliance with these sorting protocols.[119]
Engage in sustainable sourcing/procurement	Selecting suppliers solely based on convenience and cost, without considering other factors	Work with suppliers who adopt sustainable practices and choose eco-friendly products/packaging. Where possible, source products locally to reduce transportation distances and its associated emissions. Optimize inventory to reduce waste and excess stock/storage needs. Use data-driven purchasing by auditing current consumption and forecasting future needs.

Abbreviations: AAD, American Academy of Dermatology; ACD, Australasian College of Dermatologists; SSIs, Surgical Site Infections.

than regular waste[23,24]—but also contributes to carbon emissions and toxic pollutants.[25] Up to 85% of hospital waste is general, non-hazardous material suitable for recycling or landfill disposal without special processing.[26] However, much of this waste is improperly discarded alongside hazardous materials, leading to unnecessary incineration or autoclaving before landfill disposal.[26]

Surgical settings a prime target for implementing waste-reduction interventions. Traditional operating rooms are responsible for up to 30% of hospital waste,[27–29] with approximately 90% classified as non-infectious.[30] Dermatologic surgery is no exception with most of its waste (65% by weight) being non-hazardous packaging material.[31] Addressing this issue involves 2 primary strategies: proper waste segregation and reducing consumption of non-essential consumables that do not enhance patient outcomes (**Table 1**).

Reducing consumption is often more impactful than recycling. Many health care products and packaging materials are non-recyclable due to their composition (eg, mixed materials/mixed plastics)[32,33] or policy restrictions impose barriers to recycling by mandating the disposal of all medical waste, even if uncontaminated.[25] Additionally, medical companies often do not disclose recyclability information.[34,35] A clear example of reducing consumption is avoiding the use of full patient sterility, which generates unnecessary waste without improving patient outcomes.[36–38] Field sterility is adequate for dermatologic surgery procedures, which are considered clean surgeries[39] with a low risk of wound infections.[40] When infections do occur, they are typically due to the patient's own microbial flora, particularly *Staphylococcus aureus*.[41] Studies show that about 80% of infectious isolates match colonization isolates from the same patient, indicating that endogenous colonization is the primary source of infection.[42] Patient-related factors such as diabetes, immunosuppression,[43] and surgery at lower extremity locations[40,44,45] also contribute and are acknowledged by the World Health Organization .[46] Such evidence should guide strategies to reduce surgical site infections (SSIs) rather than an overemphasis on full patient sterility.

Re-useable surgical gowns, drapes, and caps should be used for their lower carbon footprint and comparable efficacy to disposable alternatives.[47–49] Additionally, surgical attire guidelines should be critically evaluated particularly in the context of excessive surgical garb.[50,51] For instance, the 2015 Association of Peri-operative Registered Nurses recommendations included extensive scalp, hair, ear, and arm coverage,[52] yet subsequent studies have shown no associated benefit in reducing SSIs from these recommendations.[53–55] An evidence-based approach should guide decisions on what is truly necessary in dermatologic surgery to minimize waste without compromising patient care (see **Table 1**).

Location is also an important consideration—dermatologic surgery is best performed in a procedural room or outpatient setting rather than a main operating theater. A case–control study found that the cost of treating skin cancer in an outpatient setting was 10 times lower than in an operating room.[56] This pattern is observed across other specialties as well.[37] The higher costs, increased solid waste production, and inconvenience associated with main operating room surgeries are often unjustifiable, as they do not significantly reduce the risk of postoperative infections.

COST REDUCTION

Optimizing supply chains delivers environmental and financial benefits.[57] A global assessment of health care's environmental impact revealed that supply chains contribute over half (51%) of carbon emissions.[58] However, only 23% of studies (48 out of 205) in a systematic review addressing strategies to mitigate health care's climate impact focus on this area.[59] At the hospital level, supply chains account for 65% to 80% of its total greenhouse gas (GHG) emissions.[60,61] At a national level, the carbon footprint of the NHS in England amounted to 25.0 megatons of carbon dioxide equivalent (CO_2e), with 62% originating from its supply chain and only 24% from the delivery of care.[60]

Strategies to optimize supply chains include auditing current procurement practices to identify areas for improvement, partnering with companies that prioritize sustainable sourcing, manufacturing, and packaging, selecting local distributors to reduce transportation-related emissions, and eliminating unnecessary products or services. Notably, hospitals adopting sustainable procurement practices in a resource intensive area such as the operating room, can save up to US$56,000 annually.[57]

Choosing effective medications as first-line therapy can be a cost-effective measure. A recent systematic review on the cost-effectiveness of management strategies for chronic spontaneous urticaria (CSU) found that using the biologic omalizumab for refractory CSU was cost-effective compared to H_1 antihistamines in spite of its higher upfront costs.[62] Additionally, eliminating ineffective investigations such as routine laboratory testing of CSU individuals with normal histories and physical examinations saves money, and importantly those tests rarely impact patient diagnosis, management,

or disease course.[62] These tests incurred costs exceeding US$1.4 million per quality-adjusted life year (QALY) gained—far above the commonly accepted cost-effectiveness thresholds and thus should be avoided.

Typically, the incremental cost-effectiveness ratio threshold reflects the maximum amount a health care system is willing to pay for one additional QALY. While thresholds between $100,000 and $150,000 per QALY are generally deemed acceptable, interventions exceeding $200,000 or $300,000 per QALY, such as the laboratory tests mentioned, are considered not cost-effective.

TIME SAVED

Primary prevention as previously discussed, is the most time and resource-efficient intervention by preventing disease from occurring altogether.

However, adopting a targeted approach to laboratory monitoring offers significant benefits by saving time for both patients and doctors, while also reducing costs for health care systems (see **Table 1**). For instance, frequent blood monitoring is standard practice for patients on biologic therapy.[63] The British Association of Dermatologists' 2020 guidelines recommend monitoring full blood count, creatinine, electrolytes, and liver function tests at initial 3 to 4 monthly intervals, followed by 6 monthly checks or as clinically indicated thereafter.[64] Extending the interval between blood tests can significantly reduce the monitoring burden, health care expenses, and time commitments, as abnormal blood results beyond the first year of treatment are uncommon.[65,66]

A 2 year real-world study involving patients prescribed adalimumab, ustekinumab, and risankizumab found that while 37% of patients exhibited blood abnormalities, none were directly attributed to the biologic therapy or necessitated its cessation. Based on these findings, the authors concluded that annual blood monitoring is sufficient for patients without comorbidities or concurrent use of disease-modifying agents.[66] Switching to annual monitoring for such patients could save an estimated 850 kg CO_2e annually from reduced patient travel alone in the United Kingdom.

A similar case exists for laboratory monitoring in patients prescribed isotretinoin for acne. Earlier guidelines recommended routine monitoring of serum lipid profiles and liver function tests, leading some dermatologists to conduct monthly testing.[67] However, a recent systematic review found no evidence to support frequent monitoring, as adverse events were extremely rare (<1 in 10,000), idiosyncratic, or not preventable through monitoring.[68] The authors suggested that routine laboratory monitoring in healthy young individuals on isotretinoin is unnecessary and may detect non-serious biochemical abnormalities.[68]

The environmental impact of laboratory tests is significant. For example, 1000 complete blood count tests have a carbon footprint equivalent to driving 478.5 miles (770 km).[69] Challenging the concept of "routine" monitoring is crucial, as it often overlooks the importance of individualized care and the complexity of clinical decision-making. Similar initiatives have succeeded in other specialties, such as cardiology, where guidelines now recommend liver enzyme tests for patients on statins only before initiating therapy and as clinically indicated thereafter, eliminating the need for routine periodic monitoring.[70]

Virtual consultations also offer an opportunity to save time, deliver effective care, and reduce GHG emissions. In a retrospective cross-sectional study during the COVID-19 pandemic, virtual isotretinoin management for acne eliminated 14,450.2 miles of travel for in-person visits—translating to substantial time savings for both patients and providers, along with a 5137 kg reduction in GHG emissions.[71]

Strategic service planning, such as scheduling surgeries on the same day as in-person consultations, can also help save time. At a tertiary dermatology center in Ireland, implementing this practice not only saved patients valuable time but also reduced travel by a total of 21,919 miles (35,275 km), averaging 56.35 miles (90.68 km) per patient.[72] This change also resulted in a decrease of 6.02 metric tonnes of CO_2e emissions, demonstrating significant environmental and logistical benefits.[72]

REDUCING CONSUMPTION

Minimizing waste not only saves time and money but also lowers overall consumption. This is particularly critical given the findings of a recent American Academy of Dermatologist survey, were 40% of dermatologists face drug shortages daily and 90% encounter shortages at least monthly.[73] These shortages disrupt workflows, create administrative challenges, and compromise patient care.

One example is lidocaine, a commonly used local anesthetic among dermatologists, which is currently in short supply.[74] Buffering lidocaine with sodium bicarbonate and sodium chloride can neutralize its pH, reducing discomfort during administration while maintaining effectiveness and decreasing the required amount of lidocaine (see **Table 1**).[75,76] A recent double-blind randomized controlled trial provides strong evidence that reconstituting lidocaine concentration to as low as 0.25% is both safe and effective while enhancing resource utilization.[77] However,

regulatory barriers such as the United States' Drug Quality and Security Act have complicated the use of compounded formulations by restricting access to compounded pharmacies and prohibiting dermatologists from preparing such formulations themselves.[78,79] A collaborative effort by dermatologists successfully overturned these restrictive policies, underscoring the power of collective advocacy to challenge regulations that hinder patient care, increase medication consumption, and lack scientific justification.[80]

Consumption is closely tied to waste generation, and waste audits can play a vital role in identifying root causes and driving targeted interventions. In a quality improvement study conducted across 4 outpatient sites in the United States, a waste audit served as the foundation for reducing waste from skin biopsy trays, leading to an 84% decrease in unnecessary supplies.[81] This initiative involved collaboration among all members of the clinical team, including physicians, medical assistants, nurses, and clinic managers. The study highlights how reevaluating standard operating procedures can effectively reduce waste without adversely impacting patient care.

BARRIERS AND SOLUTIONS

It may seem intuitive that interventions benefiting patients, minimizing harm, saving time and money, and helping the planet would be adopted immediately. Yet, progress remains slow.[82,83]

How can we make high-value care mainstream? First, we must address health care variability which does not improve patient outcomes—a challenge dermatology has successfully tackled in the past. To address overuse of stages during Mohs Surgery, the American College of Mohs Surgery *Improving Wisely* intervention identified outliers, developed an overuse metric and provided feedback to the outliers benchmarking them to their peers.[84] A 5 year follow-up study confirmed the durability of this approach potentially saving Medicare an estimated $92 million while improving quality of care.[85] This model should be adopted in other areas of dermatology where low-value care exists.

Second, guidelines must be updated frequently to reflect new evidence. More than a decade has passed since *Choosing Wisely* was established, yet only 10 dermatology recommendations have been issued.[86] Dermatologists should have the ability to present evidence of high-value care to the guidelines committee. This evidence would be reviewed, and if found appropriate, lead to a timely revision of the existing guidelines. Currently, guideline groups like NICE schedule reviews on a fixed 3 year cycle.[87]

Third, national indicators of high-quality care must be developed to establish benchmarks for comparison. These indicators should include metrics such as lifecycle analysis[88] to evaluate the full environmental impact of interventions or products, waste audits, and measures of time and cost savings alongside improved patient outcomes. As of this writing, only one study has specifically quantified the carbon footprint of an outpatient dermatology practice.[89] Such detailed analyses are essential, as they provide the quantifiable evidence needed to inform and support actionable policy decisions.

Fourth, the effectiveness of these interventions must be rigorously evaluated to establish their impact. A recent systematic review analyzed strategies ranging from policy and governance to waste management for reducing the carbon footprint of health care.[59] The total number of studies assessing the impact of these interventions remains low.[59] Notably, a separate review specifically examined studies on interventions aimed at reducing GHG emissions and found no clinical trials; all but one study carried a risk of bias.[90] This highlights a critical research gap that needs to be addressed. Such research should be prioritized for publication in high-impact dermatology journals, where climate change and sustainability topics are currently underrepresented.[91]

Fifth, barriers to implementing high-value care must be identified and strategies to deimplement low-value care must occur concurrently. Clinical behaviors pose a significant barrier to changing health care practices, as they are often automatic and deeply ingrained[1,92] explaining why guidelines alone, rarely result in meaningful change.[93] An effective deimplementation strategy must include feedback mechanisms and the replacement of unhelpful habits with cues that promote high-value care. For instance, integrating high-value care principles into practice management systems or electronic medical records (EMRs) could be instrumental. One example is displaying the carbon footprint of medications alongside their details in EMRs. Achieving a change of this scale will necessitate collaboration among steering committees, pharmaceutical industries, provincial programs, and national stakeholders. Equitable access to guideline-concordant medications or interventions is another barrier that will need to be addressed. Demonstrating that an intervention adheres to principles of high-value care is crucial; however, these efforts are undermined if governmental or insurance policies favor cheaper, low-value alternatives.

Finally, integrating high-value, sustainable dermatology into training programs is essential.

This approach will prepare future dermatologists to address conditions influenced by climate change while embedding sustainability as a fundamental element of high-quality patient care. For practicing dermatologists, joining a sustainability group within their professional organization is an excellent next step. Groups like the AAD's Expert Resource Group, the European Academy of Dermatology and Venerology Climate Working Group, or the Environmental Sustainability Group of the Australasian College of Dermatologists offer valuable resources and actively advocate for high-value, sustainable care.

SUMMARY

Health care is a significant contributor to GHG emissions and with Earth-system boundaries at risk of being breached and time running out,[94] accelerating progress is imperative. High-value care is a cornerstone of sustainable dermatology, grounded in evidence-based medicine. Embracing this approach requires a shift from traditional practices, which prioritize exhaustive investigations and interventions regardless of cost, toward a more focused strategy where evidence drives patient management and procedures are thoughtfully streamlined. Incorporating high-value care as mainstream care will benefit patients, the environment, and future generations.

CLINICS CARE POINTS

Pearls

- Follow Guidelines for High-Value Care—These guidelines improve patient outcomes, cut costs, and consumption while having a lower environmental impact (eg, Choosing Wisely guidelines).
- Prioritize Prevention—UV protection, targeted screening, and early intervention reduce disease burden and resource use.
- Reduce Unnecessary Interventions—Adherence to updated clinical guidelines (eg, 2022 Melanoma follow-up pathways, Mohs Surgery AUC) prevents wasteful practices, lowers the carbon footprint, and improves patient safety.
- Streamline Lab Monitoring—Blood tests for patients on biologics and isotretinoin should be tailored to the patient rather than routine, as frequent monitoring often detects insignificant abnormalities and increases health care burdens without clear benefits.
- Perform Procedures in the Right Setting—Avoiding main operating rooms for dermatologic surgeries reduces costs, waste, and CO_2 emissions.
- Improve Waste Segregation—Proper classification prevents unnecessary incineration and landfill use, reducing costs, and emissions.
- Choose Reusable Over Disposable—Reusable surgical gowns, drapes, and caps have a lower carbon footprint than single-use alternatives while maintaining equivalent infection control outcomes.
- Minimize Unnecessary Sterilization—Field sterility suffices for most dermatologic surgeries, reducing waste and expenses.
- Optimize Supply Chains—Sustainable procurement and local sourcing reduce emissions and health care costs.
- Incorporate Sustainability into Guidelines—Embedding environmental impact into dermatology training and policies ensures that sustainability becomes a key metric in medical decision-making and equips future dermatologists to address the challenges posed by climate change.

Pitfalls

- Overuse of Low-Value Care—Excessive tests and treatments strain health care systems and harm patients.
- Lack of Sustainability Metrics in Dermatology—Environmental impact is rarely considered in guidelines, limiting progress toward sustainable dermatology.
- Underrepresentation of Climate Change Literature in High Impact Dermatology Journals—Dermatology ranks the lowest among medical specialties in its representation of climate change-related articles highlighting a notable lack of focus on this topic within the specialty.
- Slow Adoption of Evidence-Based Change—Outdated practices persist due to lack of awareness, training, and policy updates.

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DISCLOSURE

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