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Sustainable dermatology: a service review at Warwick and quality improvement initiatives

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Dear Editor,

There are significant opportunities for services to improve their sustainability and carbon footprint.[1] We report a sustainability review of our dermatology department with a focus on human behaviours, which was initiated by younger people in the department and family members of staff.

The review was based on the four principles set out by the Centre for Sustainable Healthcare: (i) prevention, (ii) patient empowerment and self-care, (iii) lean systems and (iv) low carbon alternatives.[1] We further describe the findings from a number of our initiatives to make our services more sustainable (Table 1).

We identified opportunities to reduce paper usage and introduce recyclable products within our service. We have run initiatives to shift our service towards a paper-free environment.

One of our quality improvement projects (QIPs; see Data S1 for details) involved reintroducing recycling bins back into our minor operation procedure room, following their temporary removal during the COVID-19 pandemic due to initial concerns over infection control. Prior to this reintroduction, we surveyed a total of 42 procedures performed over 10 surgical lists, and found they generated a combined total of 13 kg (average 0.31 kg per procedure) of nonsharps waste, which was all disposed into orange clinical waste bags. Following reintroduction of the recycling bins in September 2021, we surveyed a total of 49 procedures performed over 10 surgical lists, which identified a total of 16 kg (average 0.33 kg per procedure) of nonsharps waste, of which 13.4 kg (84%) was disposed into orange clinical waste bags and 2.6 kg (16%) was disposed into recycling waste bags. Thus, our QIP identified that an estimated 16% of nonsharps surgical wastes could be recycled.

In another QIP, we found multiple identical copies of academic journals deposited in the departmental library due to staff subscribing to the same professional bodies, which is a wasteful practice. While it is possible to purchase institutional online subscription of academic journals and textbooks, this can have significant cost implications to the institution. Environmentally conscious publishers are shifting towards online-only issues, which will reduce the carbon footprint; this includes *Clinical and Experimental Dermatology*, which will be online only from January 2022.

There are limitations to our sustainability review as this was an internal departmental level review without involvement from any experts in the field, and we did not evaluate the impact of higher-level sustainability policies and recycling schemes (e.g. organizational and government level) on the sustainability of our services. There is so much more we should do as a department. Nevertheless, the insights we gained through this broad overview of our service will help us incrementally transition at a department level into a more sustainable healthcare service. We encourage other departments to critically reflect upon their sustainability and to explore avenues to make our world a better place for our future generations.

S. Mann,[1] N. Sebastian,[1] E. Okonji,[1] V. B. Y. Tso,[2] C. Thind,[1] S. Unter,[1] B. C. Gee,[1] A. J. Bedlow,[1] J. J. Carter,[1] H. Eykyn,[1] T. Williamson,[1] S. Barrass[1] and S. Tso[1]

[1]*Jephson Dermatology Centre, South Warwickshire NHS Foundation Trust, Warwick, UK and* [2]*Paddox Primary School, Rugby, UK*

E-mail: simontso@doctors.org.uk

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Table 1 Evaluation of the different domains of sustainability and recycling in the dermatology service.

	Current status	Opportunities	Examples of our recent initiatives
Prevention			
Paper usage	The department is not completely paper-free and still relies on paper records for some aspects of our work and communication	To move towards a paper-free working environment	Since 2020, we have switched from paper to telephone/electronic referrals for inpatients to reduce paper
Paper posters	The department uses paper posters to display information for patients and staff	Improve longevity of suitable posters by laminating them or keeping them in protected notice boards	
Patient surveys and patient information leaflets	The department uses paper patient surveys and gives out paper patient information leaflets	Consider offering electronic formats of patient surveys and leaflets	
Poster presentations	Historically, large posters were printed for presentation at scientific meetings	E-posters can replace the need for printed posters	
Blood tests		Ensure that tests are requested based on genuine clinical need and patient safety reasons	
Textbooks	There are many old paper textbooks in the department, sometimes multiple copies of the same book	Consider purchasing digital versions of textbooks in future when required. Donate old textbooks	
Printed journals	Many doctors are members of the same professional organization and receive the same complimentary copies of printed journals, as well as having access to the electronic versions of these journals	Consider institutional subscription to professional organizations and opt out of receiving printed copies of journals where possible	
BNF	The department holds old paper copies of the BNF	Access the electronic version of the BNF	Since 2019, we have stopped ordering paper copies of the BNF
Blood test and prescription requests	The department uses paper forms to request blood test and uses paper prescriptions	Consider electronic request for tests and electronic prescriptions	
Stock supplies	The department stocks some blood test tubes and cosmeceutical samples	Encourage the department not to overstock to avoid supplies passing their expiry date and therefore reduce waste	
Patient/staff empowerment and self-care			
Sustainability of skin-directed therapies that we use or recommend	Some full-size and sample-size cosmeceutical products and prescription-only topical treatments do not have clear recycling labels on their packaging or are not recyclable	To increase product user awareness about the sustainability of products they use	See Tso *et al*. 2021[2]
Availability of recycling bins	Since the COVID-19 pandemic, there was a noticeable reduction in the number of recycling bins in some clinical areas in the department	Reintroduce recycling bins	See Data S1
Types of recycling bins	Currently there are only dry-mix recycling bins in the department. The department uses some battery-operated equipment such as dermatoscopes but battery recycling is not available at the Trust	Introduce recycling schemes for other materials such as batteries and glass	

Table 1 continued

	Current status	Opportunities	Examples of our recent initiatives
Bin bags	The department uses standard (noncompostable) bags for general waste and recycling waste bins	Consider appropriateness of compostable bin bags for the general and recyclable waste bins	
Paper information leaflets for patients	It is our standard practice to give out paper forms of patient information leaflets on diagnosis and management, where relevant	Rather than giving paper form of information leaflet by default, we should start asking patients if they would prefer the website address of the information leaflet instead	
Water usage	The department has standard taps with handles for turning the water on and off	Regularly check taps and toilets to ensure they are closed properly and there is no leakage. Use of motion-sensor taps might reduce water usage	
Staff food	There is food available for purchase from the staff canteen	Encourage staff to bring their own lunch and encourage healthy eating	
Thermostatic heating controls	Some office and clinic rooms do not have thermostatic heating controls	Considering installing thermostatic heating controls as this may reduce energy usage	
Lean systems			
Teledermatology clinics to reduce travel and waste	The department offers a teledermatology service delivered from hospital. During the exceptional circumstances of the COVID-19 pandemic, some clinics were conducted by clinicians from home	To increase our teledermatology offerings to suitable patients as technology continues to improve. To consider homeworking for staff, if appropriate	
Face-to-face clinics at convenient location for local population to reduce patient travel	The department delivers face-to-face clinics at two sites. There is a separate, community dermatology service run by another provider that delivers clinics at additional sites in the community	To increase our teledermatology offerings to suitable patients	
Staff travel	18 of 20 departmental medical and nursing staff reside locally. Electric car charging points, bicycle parking spaces and car sharing schemes are available at the workplace	To continue to encourage car sharing and walking or cycling to work	
Heating	The department has central heating and adjustable radiators in some rooms	Ensure that the heating and radiators are switched off when the department is empty overnight and at weekends	
Low-carbon alternatives			
Energy-efficient lights	Some existing lights are fluorescent strip lights	Change to energy-efficient alternatives when current lights stop working	
Printing paper	We have access to recycled paper and white paper for printing. Some stocks of white paper do not specify if they contain recycled materials or originate from well managed forests. Also we have access to printers with capability of double-sided printing	Only print when absolutely necessary. Use recycled paper and double-sided printing whenever possible	

Table 1 continued

	Current status	Opportunities	Examples of our recent initiatives
Stationery usage	Currently pens available are not recyclable or reusable once they run out There are old resources in the department that are no longer in use	Use recyclable pens. Opportunity to recycle the old resources and reuse the stationery (e.g. folders) from them	
Computers	There are many computers and monitors throughout the department	Opportunity to reduce the monitor's screen brightness to save energy Encourage staff to turn off monitors at night and when not in use	

BNF, British National Formulary.

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Supporting Information

Additional Supporting Information may be found in the online version of this article:
Data S1. Reintroduction of recycling bins in minor operation procedure room.

Ulcerating nodules on the face due to *Mycobacterium chimaera* in a patient with diabetes

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A 78-year-old woman presented with a 1-month history of ulcerated lesions on her face. Her medical history included diabetes mellitus with poor glycaemic control.

Physical examination revealed two well-defined nodules (measuring 30×40 mm and 20×20 mm in size) with central ulceration and surrounding erythema on the right side of chin (Fig. 1a). Dental caries was noted in the right lower anterior teeth.

Laboratory investigations showed an elevated erythrocyte sedimentation rate (65 mm/h; normal range 0–30 mm/h). Orthopantomography revealed a periapical abscess with sinus tract extending to the skin. Chest radiography was unremarkable and Mantoux test was negative. Tissue smear showed the presence of acid-fast bacilli (AFB). An excision biopsy was taken from the larger lesion, and extraction of the infected teeth and excision of the sinus tract were performed.

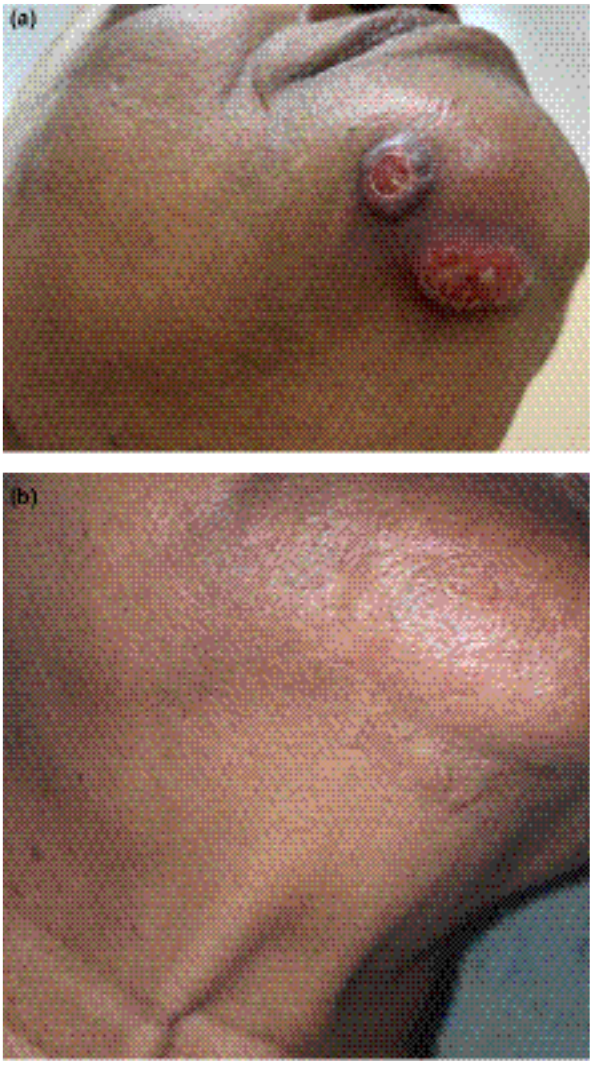

Figure 1 (a) On the right side of the chin, there were two well-defined nodules, measuring 30×40 mm and 20×20 mm, with central ulceration; (b) complete resolution of lesion after 8 weeks of treatment.