

EyeRecycle: A Pilot Program to Reduce the Environmental Impact of Contact Lens Waste in Clinical Cornea Practice

Nitya Devireddy, MPH¹; Priyanka Bhatnagar, BA²; Margaret A. Tharp, MPH³; Ruby Hollinger, MD⁴; Minali Prasad, BA⁵; Jeremy Shapiro, MD⁶; Daniel Hu, MD⁷; Alexis Cherry, MS⁸; Simran Sarin, BS⁹; Ishani Majmudar, BA¹⁰; Anisha Kasi, BS¹¹; Baotram V. Nguyen¹²; Brionna L. Bennett, BS¹³; Stephanie P. Chen, MD^{14,15}

¹Pennsylvania State University College of Medicine, Hershey, PA

²George Washington School of Medicine and Health Sciences, Washington, DC

³Indiana University School of Medicine, Indianapolis, IN

⁴Lewis Katz School of Medicine Department of Ophthalmology, Philadelphia, PA

⁵Boston University Chobanian & Avedisian School of Medicine, Boston, MA

⁶University of Michigan Medical School, Ann Arbor, MI

⁷Warren Alpert Medical School of Brown University, Providence, RI

⁸Virginia Commonwealth University School of Medicine, Richmond, VA

⁹University of Iowa Department of Ophthalmology and Visual Sciences, Iowa City, IA

¹⁰Northwestern University Feinberg School of Medicine, Chicago, IL

¹¹Icahn School of Medicine at Mount Sinai, New York, NY

¹²Drexel University College of Medicine, Philadelphia, PA

¹³University of South Carolina School of Medicine Greenville, Greenville, SC

¹⁴Altos Eye Physicians, Los Altos, CA

¹⁵Department of Ophthalmology, University of California San Francisco, San Francisco, CA



EyeSustain

Background



Contact lens = hidden plastic pollution



45 Million
U.S. Users¹



21%
Improperly Disposed²



93%
Do Not Recycle³

- Microplastics have been **detected in marine life, food chains, and mammalian tissues**, posing substantial health risks.^{4,5}
- Standard recycling facilities are unable to process contact lenses, leading to **unclear recycling pathways for consumers**.

Purpose

EyeRecycle is a student-led pilot recycling program designed to reduce waste while **engaging medical trainees** and **fostering environmental stewardship** among the medical community and patients.

- **Primary:** To introduce a structured recycling framework for contact lenses, blister packs, and associated packaging.
- **Secondary:** To assess the impact of a medical-student led initiative in diverting plastic waste from landfills.

Methods

- Longitudinal, multicenter pilot study
 - 11 academic ophthalmology clinics
 - Medical student led at respective institutions
- Collection began in July 2024, with staggered start dates continuing through December 2024.
- Projected annual waste diversion was estimated from pilot phase collection rate.

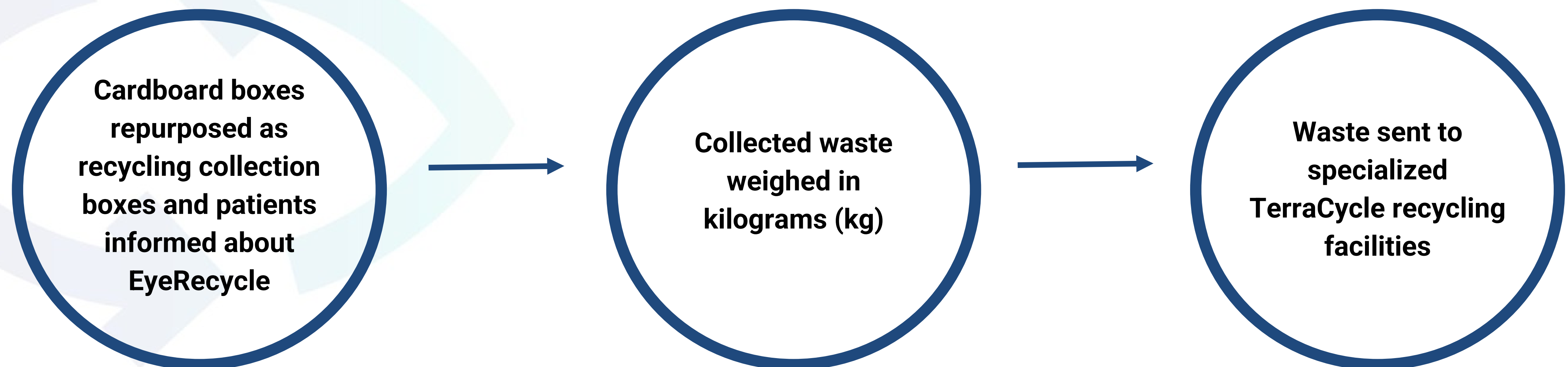


Figure 1. Collection Boxes Used in Ophthalmology Clinics



Figure 2. EyeRecycle Program Flyers



Results

- **Contact Lens Recycling Collection Sites**

- 11 students established active contact lens recycling collection sites at their institutions in the following states: IL, MI, RI, VA, MA, SC, IA, PA, NY, and Washington DC.

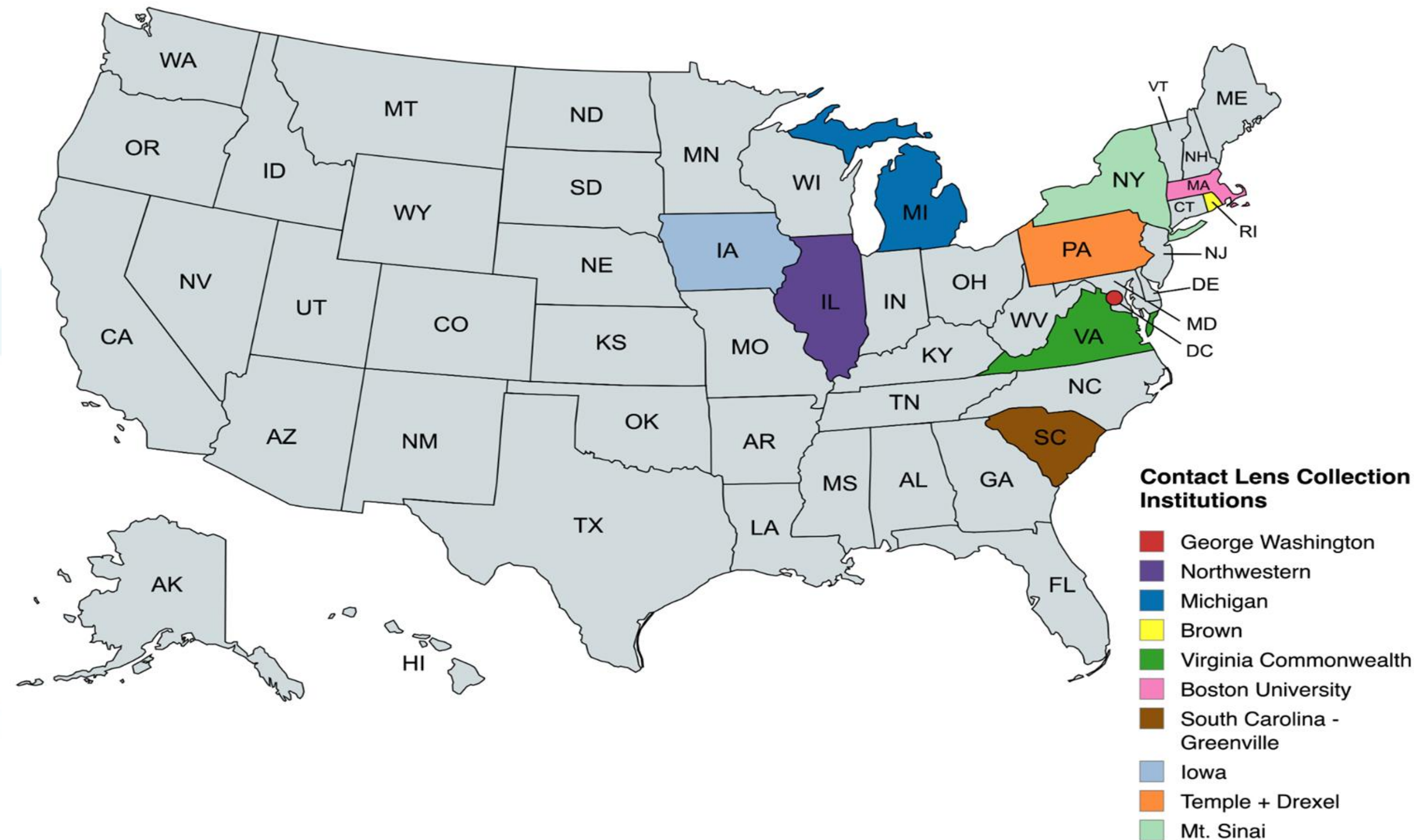


Figure 3. EyeRecycle Collection Sites at Institutions Across the U.S.

Results

- **Contact Lens Waste Sources**

- Patients
- Medical students
- Clinic staff
- Expired clinic inventory

- **Waste Collected**

- A total of **46.98 kg of plastic waste** was collected across participating sites over the collection period. This is equivalent to the weight of **2,654 500mL plastic water bottles** (*assuming a standard PET plastic water bottle weighs 18 grams*).
- The projected **annual estimate of waste diverted** from landfills is **161.62 kg**.

Table 1. Projections for academic ophthalmology clinic annual waste diversion estimated from pilot phase collection rate.

Institution	Collection period (months)	Waste collected (kg)	Projected annual waste collection (kg)
Lewis Katz School of Medicine Department of Ophthalmology at Temple	3	13.61	54.43
Boston University Chobanian & Avedisian School of Medicine	4	11.29	33.88
University of Michigan Medical School	3	8.53	34.11
Warren Alpert Medical School of Brown University	7	3.40	5.83
Virginia Commonwealth University School of Medicine	4	2.24	6.72
George Washington School of Medicine and Health Sciences	7	1.91	3.28
University of Iowa Department of Ophthalmology and Visual Sciences	3	1.91	7.62
Northwestern University Feinberg School of Medicine	7	1.80	3.09
Icahn School of Medicine at Mt. Sinai	2	0.91	5.44
Drexel University College of Medicine	2	0.87	5.23
University of South Carolina School of Medicine Greenville	3	0.49	1.96

Conclusions

- A **structured recycling framework** for contact lenses can **streamline the recycling pathway** and **cultivate environmental stewardship** practices among the ophthalmic community and patients.
- This pilot study demonstrated that **medical students** can **successfully scale a recycling initiative** to reduce plastic waste in ophthalmology.
- Future directions include:
 - Creating a long-term, self-sustainable recycling collection process
 - Promoting sustainable practices among contact lens wearers and raising awareness of recycling options
 - Collaborating with manufacturers and industry to minimize contact lens packaging

References

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