

A Qualitative Analysis on the Implementation of a Community-Based Free Sunscreen Dispenser Program

Alyssa M. Jobe, BS; Drake Seibert, BA; Simran Bedi, BS; Jacqueline T. Cooper, MD; Sophia Neman, MD; Sarah Seiter, MD; Akorfa Adobor, BS; Karolyn A. Wanat, MD

ABSTRACT

Background: Skin cancer is the most common malignancy in the United States, underscoring the need for effective prevention strategies. The Community Sun Protection Program (CSPP), a medical student-run initiative, aims to improve access to sunscreen through the provision of free sunscreen dispensers.

Objectives: This study evaluated the impact of a sunscreen dispenser initiative and identified factors that may inform future community sunscreen dispenser programs.

Methods: The CSPP provided 13 sunscreen dispensers to 8 community partners in Milwaukee County, Wisconsin. After at least 1 summer of dispenser use, community site managers were interviewed, and responses were transcribed for thematic analysis.

Results: Community site managers identified 3 primary themes: improved accessibility, positive community engagement, and increased educational opportunities related to sun safety.

Conclusions: These findings highlight the value of a collaborative public health intervention aimed at improving sun safety awareness and access to preventive resources.

compared with 94% in White individuals.⁵ Therefore, it is important for all patients, regardless of skin color, to wear sunscreen. Decreasing barriers to sunscreen use is an important public health intervention to reduce the risk of skin cancer.

Despite the known positive effects of chronic sunscreen use, there are several reported barriers to its use, including cost, education, and accessibility.⁶ In 2014, the US Surgeon General declared skin cancer a major public health issue and recommended that Americans use sun protection while outdoors.⁷ As part of that initiative, health care organizations were encouraged to partner with communities to implement preventive resources and

education aimed at reducing skin cancer.

In Wisconsin, melanoma incidence and mortality rates are higher than the national average and continue to increase in Milwaukee County.⁸ The Community Sun Protection Program (CSPP) is a medical student-run, community-based program that provides free sunscreen dispensers to promote sunscreen use and improve access to sun protection in Milwaukee County. The CSPP was created in collaboration with the Medical College of Wisconsin Department of Dermatology including funding and general program oversight with community partnerships and equipment managed by a medical student team.

This study evaluated the CSPP by assessing its strengths and challenges to inform recommendations for future community sunscreen dispenser projects.

METHODS

The CSPP provided 13 sunscreen dispensers to 8 community partners within Milwaukee County over 3 consecutive summers.

BACKGROUND

Skin cancer is the most common malignancy in the United States, and survival rates for metastatic melanoma remain poor.¹ Daily and long-term sunscreen use has been demonstrated to decrease the risk of melanoma and nonmelanoma skin cancers, with the effect being greatest among individuals with a history of blistering sunburns, lighter skin tones, and numerous nevi.²⁻⁴ While skin cancer is rare in people of color, it often presents at a later stage, and the 5-year survival rate among Black individuals is 70%

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Author affiliations: Medical College of Wisconsin (MCW), Wauwatosa, Wisconsin (Adobor, Bedi, Cooper, Jobe, Neman, Seibert, Seiter, Wanat); Department of Dermatology, Medical College of Wisconsin, Wauwatosa, Wisconsin (Wanat).

Corresponding author: Karolyn A. Wanat, MD, 8701 W Watertown Plank Rd, Milwaukee, WI 53226; email kwanat@mcw.edu; ORCID ID 0000-0001-6262-2559

Community partners were selected based on their responsiveness to outreach and the goal of reaching a diverse population. Sites included the county zoo, a public pool, a golf course, 3 outdoor educational centers, a beer garden operated by Milwaukee County Parks, and a community center.

Each dispenser is a freestanding, automatic, touch-free dispenser with a support pole and base (Figure). Each dispenser contains 1000 mL of sun protection factor (SPF) 30 broad-spectrum hybrid sport sunscreen. Each dose is 1.5 mL. The sunscreen is water resistant for 80 minutes, zinc-based, and free of para-aminobenzoic acid (PABA), avobenzone, and oxybenzone. Refills were available on request. In addition, informative placards with an optional survey were attached to each dispenser (Figure).

After Institutional Review Board approval, interviews were conducted via phone with each site manager after at least 1 summer of dispenser use. A phone script with a preapproved set of questions was utilized. Responses were transcribed and analyzed thematically. Data were interpreted using grounded theory methodology.⁹

RESULTS

Four community site managers were interviewed in Fall 2022. One site manager declined to be interviewed. Three site managers were not eligible for interviews because they did not have at least 1 full summer of dispenser use. All managers interviewed described their overall perspective of the dispenser program as “positive” and identified the availability of free sunscreen as the most important aspect of the program. Themes identified and described in the Table were accessibility, positive community engagement, and education, respectively. Other positive themes identified during interviews included innovation, novelty, excitement, and usefulness.

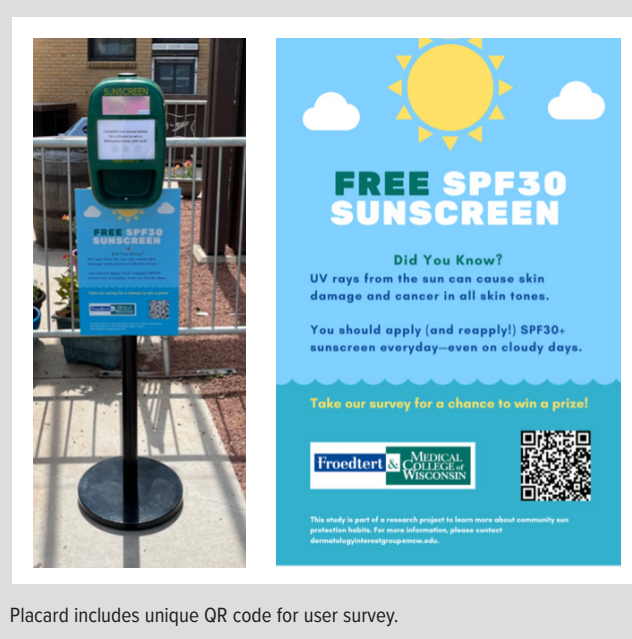
DISCUSSION

The goal of the CSPP is to provide free sunscreen throughout Milwaukee County, and this study evaluated factors that affected the use of sunscreen dispensers within the community.

Themes

Accessibility: Cost was the most influential factor identified by the site managers interviewed. This aligns with literature identifying cost as a significant barrier to sunscreen access emphasizing the need for low-cost, convenient sunscreen initiatives.⁷ Our findings suggest that site managers perceive cost as a barrier not only for individual users but also for their organizations, which recognize the benefits of sunscreen use but may have limited resources to provide sunscreen independently. By offering free sunscreen dispensers and routine refills, the CSPP reduced this burden on community partners. This was particularly beneficial for organizations with limited budgets, such as government-funded institutions, including the community center. As a result,

Figure. Automatic Freestanding Sunscreen Dispenser and Educational Placard



Placard includes unique QR code for user survey.

the initiative expanded access to sunscreen in community settings that otherwise might not have been able to provide this resource. Placement of dispensers in outdoor, sun-exposed locations also supported sunscreen use when individuals forget or choose not to bring their own.

Positive Community Impact and Engagement: Community members and site managers all expressed positive perceptions of the sunscreen dispensers. As noted by the pool manager, patrons felt cared for knowing their community was providing a resource for their benefit. Community members requested refills from site managers and inquired about sunscreen type, brand, and ingredients, which program managers viewed as evidence of strong community engagement.

A strength of this small-scale pilot program was the direct relationship with each site, allowing for a close partnership with the academic dermatology department. Medical students helped manage the dispensers and communicated directly with site managers to improve the program. These close partnerships are essential for improving health outcomes through evidence-based interventions.

Education: While formal interactions positively influence health education, the impact of informal conversations is often overlooked in community-based health interventions. One study noted that casual conversations can fill knowledge gaps by sharing health information, encouraging adoption of new and positive behaviors, and leveraging personal connections and trust.¹⁰ This community engagement approach can help address educational gaps in real time.

Site managers identified educational conversations on topics such as skin cancer risk among people of color, appropriate sunscreen use, and characteristics of quality sunscreen, includ-

Table. Summary of Postintervention Interview Themes and Comments

Description	Evidence	Supporting Comment (Dispenser Location)
Theme: Accessibility		
Increased availability of sunscreen alleviated barriers (eg, cost, inconvenience)	All respondents reported access to free sunscreen as the important factor for engaging with the program	“Receiving the dispenser free of charge was important because we are limited in our funding. Having this apparatus and having this maintained wouldn’t be in our budget for the summer. I knew it was important to have.” (Community Center) “A lot of people don’t apply sunscreen, and being in the Midwest it can get quite hot and sun can definitely burn your skin so it’s great that they have the opportunity to use the sunscreen free of charge.” (Golf Course)
Theme: Positive Community Impact and Engagement		
Provision of sunscreen positively affected users and facilities	All respondents noted community members approaching them and their employees to express positive feedback and excitement.	“An amazing form of engagement that needs to happen more...bridges the af-gap from not just a recreational facility but also it shows the community that we... care about the public. (Pool) “When it was out, people said, ‘Didn’t you used to offer sunscreen?’ People clearly enjoyed this resource.” (Beer Garden) “We appreciated how the kids can use this sunscreen before going on their field trips to the nature center.” (Community Center)
Theme: Education		
Sunscreen dispensers and accompanying resources provided education on safe sun practices	Initiated informal educational conversations on necessity of sun safe practices	“People felt that sunscreen is not something they think about putting on on a daily basis unless they go to a beach...” (Community Center) “...maybe an educational pamphlet of some sort about sunscreen would be good.” (Pool)

ing broad-spectrum protection and SPF. Through these conversations, the program identified educational gaps that may be addressed through future outreach efforts. An educational pamphlet was created to address common sunscreen misconceptions and provide information about the sunscreen available in the dispensers, along with contact information for additional questions or concerns.

Challenges and Limitations

Due to the nature of a self-service dispenser, we were unable to accurately monitor sunscreen use. Location of application (eg, face, arms, legs, chest), amount of sunscreen used, and reapplication are all important considerations for effective sunscreen use. BrightGuard, the sunscreen vendor, estimates approximately 650 uses per 1000-mL bag of sunscreen, allowing only an estimate of dispenser use. This assumption also requires that each bag be used completely and without any waste.

Partnership with community site managers is essential for monitoring dispenser use. Some site managers were able to directly monitor dispenser use because of its location within their facility; however, no formal recording of use patterns or user behaviors was performed. For sites with consistent observation, managers provided descriptions of user behaviors, including generalized demographic characteristics, such as frequent use by young adult at the pool location during swim meets. Because many community partners do not collect detailed demographic data on visitors, these observations provided only a limited understanding of user demographics.

A limitation to program expansion is the need to establish a dedicated point of contact at each new community partner

site. Potential locations including public beaches and local parks have been proposed to capture a larger user population; however, successful implementation depends on identifying an individual who can assume responsibility for dispenser oversight. Many larger public locations lack a consistent manager to oversee issues such as weather-related damage, graffiti, and routine maintenance.

Future Goals

The Community Sun Protection Program continues to expand within and around Milwaukee County. As the program grows, it is seeking partnerships in neighborhoods of lower socioeconomic status, where cost may represent a greater barrier to sunscreen use. Future site selection efforts also will focus on populations known to have lower sunscreen use, including men, people of color, and Hispanic individuals. The CSPP continues to seek funding to support maintenance of existing dispensers and purchase additional units.

CONCLUSIONS

This study evaluated community partners’ perceived perceptions of a free sunscreen dispenser program. Community partners identified increased accessibility, positive community impact, and enhanced education through formal and informal interactions as the most important outcomes of this partnership. These findings highlight the value of collaborative public health interventions for improving sun safety awareness and access to preventive resources.

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