

## Science Policy and Advocacy

### Exploring disease-specific funding for systemic lupus erythematosus (SLE) and the associations between funding, research productivity, and health disparities

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**OBJECTIVES/GOALS:** \* To analyze and compare disease support (funding, research productivity, drug development) and burden between systemic lupus erythematosus (SLE), which particularly affects Black women, and similar conditions that affect other groups of Americans. \* To address the discrepancy of prevalence estimates of SLE in America. **METHODS/STUDY POPULATION:** This cross-sectional study examined publicly available data on disease funding metrics and research productivity indicators. We utilized the NIH Report database to calculate the total NIH funding and career development awards for SLE from January 1, 2008, to December 31, 2023 (estimated). We reviewed Form 990-T tax returns of SLE organizations to calculate private funding. We examined US-based interventional trials related to SLE on ClinicalTrials.gov between 2008 and 2024, using the terms SLE and lupus. We assessed FDA drug approvals for SLE from 2008 to 2024. We reviewed publicly available SLE disease characteristics such as prevalence, incidence, demographics, costs, and mortality rates. We repeated these methods for conditions like SLE but with different patient demographics. **RESULTS/ANTICIPATED RESULTS:** We will formulate SLE support based on its available federal and private funding, clinical trials, and drug approvals. We will determine the ratio of SLE support to disease burden and compare it to other conditions that affect different demographics in the US. There is currently a discrepancy in the range of prevalence of SLE in the US (178,362 to 1.5 million), so we will work with specialists to provide a better understanding of the actual prevalence. **DISCUSSION/SIGNIFICANCE:** SLE is a chronic disorder that is associated with hospitalizations, organ failure, and premature mortality. It has established disparities in incidence, treatment, and outcomes along gender, racial, and socioeconomic lines. Our study highlights the need for policy changes within research funding to address disparities and improve outcomes.

537

### Life Cycle Analysis of a Single Use Laryngoscope – A Target to Reduce Operating Room Environmental Impact

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**OBJECTIVES/GOALS:** Health care accounts for an estimated 10% of U.S. greenhouse gas (GHG) emissions. Concerted efforts to decrease

waste are needed including critical appraisal of single use items. The purpose of this study was to conduct life cycle analyses (LCA) of a pediatric single use laryngoscope to inform environmental impact and identify targets to reduce waste. **METHODS/STUDY POPULATION:** LCA was used to quantify the environmental impact of a single use pediatric laryngoscope. LCA is an industry standard measure of energy consumption, water consumption, and GHG emissions encompassing a “cradle-to-grave” assessment. The GREET model (Greenhouse gases, Regulated Emissions and Energy use in Technologies) and Open LCA model were used as sources for product/raw material data. Separate analysis was completed for the battery powering the light emitting diode (LED) lights. **RESULTS/ANTICIPATED RESULTS:** The LCA revealed 598.2 g of CO<sub>2</sub> equivalents for the 121g single use pediatric laryngoscope. There were an estimated 26,849 cases that used single use laryngoscope last year at our free-standing children’s hospital resulting in 16.1 metric tons of CO<sub>2</sub> equivalents. This is equivalent to 41,273 miles driven by an average gasoline powered vehicle. The 1.5 V battery was the highest contributor to the laryngoscope’s GHG emissions. While the battery has an estimated 2,800 hours of life, single use laryngoscopes are reported in the literature as being used for only an average of 30 seconds to 2 minutes. **DISCUSSION/SIGNIFICANCE:** Single use laryngoscopes are high contributors to GHGs. Specifically, the batteries contained in the laryngoscopes are wasteful and challenging to remove and recycle. Future efforts to decrease waste in the OR should target use of similar items that have reusable battery components to improve environmental sustainability.

539

### Identifying best practices: Content analysis of Plain Language Summary (PLS) resources for disseminating study results to participants

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**OBJECTIVES/GOALS:** Investigators have an ethical obligation to return study results back to participants in a timely and layperson-friendly manner, but most do not. This lack of communication can erode trust in the research enterprise. One solution to this issue is Plain Language Summaries (PLS). **METHODS/STUDY POPULATION:** We investigated and collected best practices for PLS and results dissemination as part of formative research for a pilot PLS project. This pilot was used to inform the development of our own PLS resources, which we will share broadly with other CTSAs. We employed a two-part system for analysis. First, we examined extant PLS resources from five major, publicly accessible sources spanning academia, government, publishing, and nonprofits for themes and best practices. Then, we examined actual PLS from each source and collected more specific feedback. We examined PLS structure, length, inclusion of graphics, multiple language availability, readability, and potential for improvement. **RESULTS/ANTICIPATED RESULTS:** Guidance sources recommended that PLS have logical and organized structures, and included essential trial information (e.g., study drug, adverse events). Suggestions for length varied widely, from 250 words to 15 pages. Guidance also recommended the use of media, including infographics, audio,