|  |
| --- |
| **A pilot study of respiratory inhaler recycling.** |
| Sophie Timmins1 Mellissa Batger2,Katrina Tonga3,4, |
| *1 Department of Respiratory Medicine and Sleep Medicine, Royal North Shore Hospital, Sydney, NSW, Australia*  *2 Department of Pharmacy, Royal North Shore Hospital, Sydney, NSW, Australia*  *3 Department of Thoracic Medicine, St Vincents Hospital, Sydney, NSW, Australia*  *4Northern Clinical School, Faculty of Medicine and Health, University of Sydney, NSW, Australia* |
| **Introduction/Aim:**  Metered dose inhalers (MDIs) are used in the treatment of airways disease as symptom relievers and disease controllers. MDIs have a large carbon footprint related to the hydroxyfluorocarbon used as a drug propellant. Approximately 25% of the carbon footprint is released into the environment during the “end of life” phase, after their clinical usage. Currently there is no pathway for capturing residual greenhouse gas and the inhalers are placed in landfill. The aim of this study was to calculate the carbon footprint of respiratory inhalers suitable for disposal, collected from high use wards over a two month period as a pilot study for a potential recycling scheme.  **Methods:**  Results from an initial audit were used to identify the wards within a tertiary hospital in Sydney that had the highest prescription of salbutamol inhalers. An education campaign to inform staff about the pilot recycling project consisted of ward inservices, pharmacy inservices, presenting to senior nurses and flyers. Small inhaler collection bins were placed in the ward utility rooms. The carbon footprint of MDI inhalers was calculated using published equations.  **Results:**  122 respiratory inhalers were collected across eight weeks. This consisted of 104 MDIs (85%), 14 dry-powder inhalers (DPIs) (12%), and 4 soft mist inhalers (SMIs) (1%). Of the 104 MDIs, 60 were salbutamol inhalers (58%) and 24 were atrovent inhalers (23%). The wards with the highest contribution were the Respiratory (29), Paediatrics (24), and Cardiothoracic wards (11). The highest number of inhalers was collected in the final week.  The carbon footprint of the inhalers was calculated as 1150kgCO2e. This is approximately the same carbon footprint of a standard car driving 4750km, further than Melbourne to Broome.  **Conclusion:**  This pilot study has shown that collection of respiratory inhalers for a specific recycling program is feasible. This has the potential to save a significant carbon footprint from landfill. Education about appropriate inhaler recycling is an important part of improving the carbon footprint of healthcare. **Grant Support: North Foundation** |