Introduction: Inhaled nitric oxide (iNO) is used medically to lower the pulmonary vascular resistance of infants with acute respiratory failure and has become a common treatment for patients with respiratory disease. The Respiratory Therapy (RT) Department at SickKids observed a gradual increase in the use of iNO over five years and decided to review hours utilized with patient clinical indicators. The review focussed on adherence to the iNO guidelines in regards to indications, response to therapy and weaning, and opportunities were identified for enhanced iNO utilization. Based on the findings and a comprehensive literature review, both iNO guidelines from the Critical Care Unit and the Neonatal Intensive Care Unit were updated, and strategies were developed for the implementation and adherence to these guidelines. The RT leadership team recognized that mutual engagement in this initiative by physicians, respiratory therapists, nurses and other inter-professional colleagues was essential to be successful. This work led to the creation of the iNO Stewardship Program which was implemented in April 2013.

Objectives: The iNO Stewardship Program was established based on the necessity to optimize clinical practices. It was clear that the development of evidence based guidelines would not be enough and a creative way of influencing change needed to be identified. A multi-faceted strategy was developed, with engagement from stakeholders at all levels; including technicians, clinicians and leadership. The iNO Stewardship Program aimed at ensuring quality care, enhancing patient safety, minimizing variations in practice, and promoting efficient utilization of iNO.

Methods: The initial data collection occurred in 2012/2013, retrospectively reviewing all patients who received iNO in 2011/2012. Implementation of the iNO Stewardship Program and the new guidelines occurred in April 2013 with key metrics monitored over the 2013/2014. The number of hours of iNO utilized was captured on a weekly basis by the RT Technical Division. Each iNO cylinder is fitted with a tracking device and information was manually downloaded onto a memory stick. This data was translated into graphs for presentation with hours monitored weekly, monthly and yearly, per unit and as a total. Monthly targets, based on total hours purchased for the year divided by 12 months, were set and compared to actual data collected. Each patient started on iNO had qualitative data manually collected on a standardized form. This data was then collated into a shared database and trends in utilization were analyzed and shared with key stakeholders.

Results: In the first year of the iNO Stewardship Program, we were able to demonstrate its valuable effectiveness. The iNO contract for the 2012/2013 fiscal year was for 13,000 hours. With this stewardship as a key focus, we were well positioned to commit to purchasing a significantly lower number of hours. Therefore, for the 2013/2014 contract, SickKids purchased only 7,600 hours. This stretch goal of 7,600 hours influenced an elevated accountability by the clinicians and was necessary to drive change and best practice.
actually utilized 11,254.04 hours of iNO, despite purchasing 13,000 hours. In 2013/2014 SickKids purchased 7,600 hours but actually utilized 6,563.43 hours. Overall use from 2012/2013 to 2013/2014 in iNO utilization decreased by 4690.61 hours, with the implementation of the iNO Stewardship Program.

**Conclusion:** This decrease in iNO utilization is primarily attributed to the appropriate weaning of patients off iNO when clinically indicated and also to the alignment of our weaning practices with the guideline recommendations. The iNO Stewardship Program has proven to be successful, with an exceptional decrease in the number of iNO hours utilized. The final number of hours utilized for the 2013/2014 fiscal year proved that the iNO Stewardship enhanced awareness of appropriate utilization of the inhaled medication. We feel confident that these positive results can be maintained with continued collaborative engagement.

**References:**
5. Inhaled Nitric Oxide Delivery, Patient Care Procedures, Critical Care Unit, Hospital for Sick Children, Toronto, Canada; reviewed January 2002.
6. Neonatal Inhaled Nitric Oxide Protocol, Patient Care Procedures, Respiratory Services, Children’s Hospital of Orange County, California, USA.
18. Hany Aly, Rakeh Sahni Weaning strategy with iN0 treatemnt in