

Greener Dialysis: Reduce Medical Waste (MW) from each Hemodialysis (HD)

Small Change Big Impact

Renal Department, Auckland City Hospital,
Auckland District Health Board

GGHH Agenda Goals

- Waste

Hospital Goal

- Zero waste to landfill by 2040
- Reduce amount of medical waste and costs
- Reduce carbon dioxide emissions

Progress Achieved

- Financial benefits (at least save NZ\$16k/year)
- Environmental benefit (32.8 T of medical waste reduced /year, equals to 7.9TCO₂ emission reduced)

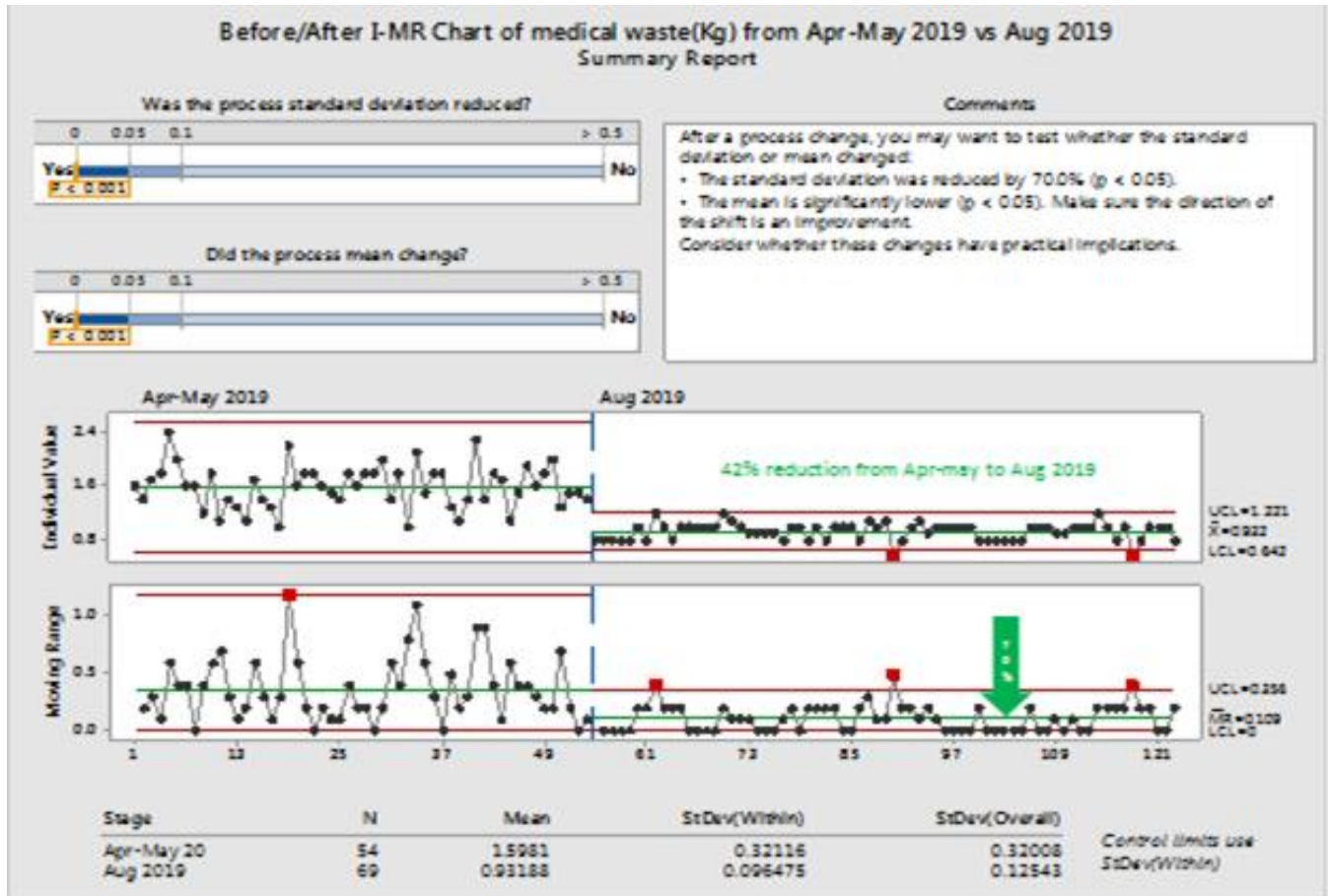
2

The Issue

1. Surgical and dialysis services generate higher volumes of infectious waste than any other area of health care.
2. Our baseline results from this audit:
 - We created average 1.6kg/HD of MW, min: 1.0kg/HD, max: 2.4kg/HD, if that was the average MW created per treatment from all our HD units in ADHB, then we would create 80t of MW in last year, it would equal to 19.36t CO₂e, and costs \$58,400.00 to process it. So our goal is to reduce medical waste from each haemodialysis treatment about 0.5kg/HD

Sustainability Strategy Implemented

1. We've created a team with charge nurse manager, Registered Nurse (RN) and clinical renal physiologists, sponsored by our Service Clinical Director
2. Invited hospital waste management experts and sustainability team to visit our unit to clarify which parts of our MW should not be counted as MW; and some of them can be reduced by updating procedure and practices
3. Standard Operating Procedures (SOPs) for starting and ending HD were reviewed, with emphasis on the proper draining process of dialyzer and emptying of bi-bags at the end of HD
4. Any non-contaminated waste should be in general waste
5. Staff education sessions have been given



Implementation process

1. Related Issues have been added on Management Operations System (MOS) board, to review and remind daily
2. Small paper bag was provided for general waste which includes equipment packaging and disposable cups from patient's for better segregation
3. Recycle anything that can be recycled
4. Discuss this in staff meeting, circulate e-mail to each staff
5. Educated patient to put normal waste to general waste bin/bag supplied
6. Presented to our nephrology multidiscipline team meeting
7. Communicate with hospital sustainability team for support

Tracking Progress

1. Pilot test done in a small group to see if the new process (SOPs) is working. Checking the MW created with new SOPs
2. Confirmed the positive results and feedback to all staff
3. Have done a big review in Aug 2019 at same unit: collected two days treatment details and MW created then compared with our baseline data
4. Results from Aug 2019 VS Apr/May 2019: average MW created from 1.6kg/HD down to 0.93kg/HD,(reduced 0.67kg/HD, 41% reduction, $P < 0.001$).

5. Minimum MW down from 1.0kg/HD to 0.6kg/HD, maximum MW down from 2.4kg/HD to 1.2kg/HD
6. The Standard deviation from each treatment down from 0.32kg/HD to 0.09kg/HD, i.e. 71% reduction $P < 0.001$, that means our practice are more stable and in a standardized way.

Challenges and lessons learned

1. Small changes that staff and patients do make a big impact on our climate and all our health as well.
2. Added this to our daily MOS board for continuity
3. Feedback from staff are considered and implemented



Next Steps

1. Added this to our renal management meeting's agenda to promote greener practice all over our renal service
2. Will implement this to all our other units including satellite and home- based HD
3. Will discuss this topic with ADKS (Auckland District Kidney Society) to see if their self-care patients dialyzing in their kidney house can do this project as well
4. Regular review of the results to ensure that the unit is doing well.
5. Counties DHB visit for possible implementation

Demographic information

The Board's vision: Healthy communities, world-class healthcare, achieved together

Kia kotahi te oranga mo te iti me te rahi o te hāpori

Auckland District Health Board located in Auckland New Zealand, is one of the largest healthcare providers in New Zealand to approximately one million patients each year. It provides healthcare services to the 510,000 residents living in the Auckland isthmus, including Waiheke and Great Barrier Islands and also specialist services to people living in other parts of New Zealand.

The New Zealand Public Health and Disability Act 2000 Section 22, Objective (j) requires that District Health Boards 'exhibit a sense of environmental responsibility by having regard to the environmental implications of its operations'. The New Zealand government has committed to the Paris agreement to reduce greenhouse gas emissions by 30% below 2005 levels by 2030.

Hemodialysis service, Renal Department, Auckland City Hospital, Auckland District Health Board (ADHB), we have total about 320 HD patients with acute unit, hospital Incentre unit, satellites and home HD as well. It is located in the biggest city of New Zealand-Auckland; we have total around 100 staff under renal department.

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Quotes:

Small practical changes with big impact for a Green environment.

“Good to hear that even as patients, we are doing something for the environment, If patients can do it, everyone can” – from a Hemodialysis patient.

Team members from this study: Dr Ian Dittmer, Transplant Nephrologist, Service Clinical Director, Josaphat Flores, Charge Nurse Manger, Maria Ylanan, RN, Shibu Joseph, Clinical Renal Physiologist (CRP), Gurdeep Singh (CRP), and Glenn Vitug (CRP)

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