Waste management in Hemodialysis unit
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Introduction and Background:
Medical waste is defined as the materials disposed from hospitals or clinical settings (clinics, dispensaries, dialysis units...). It includes sharps, non-sharps, chemicals, and blood and body fluid materials (WHO, 2016).

• Hemodialysis is aimed to maintain hemostasis inside the human body by removing the wastes and extra fluids.
• Number of dialysis patients has increased, in Lebanon at 0.9% of population in 2013.
• Very few studies have been conducted in Lebanon on hemodialysis patients and none on proper waste management at hemodialysis centers.

American University of Beirut medical center (Hemodialysis center):

• Increase in number of hemodialysis patients by 35% during the year of 2016.
• Monthly generated wastes during year 2015 was 2350kg/960 session (2.44kg/session).
• Cost of clinical waste disposition is 0.45$/kg.

Objectives:
• Decrease the generation of waste
• Decrease the cost of waste management
• Promote reuse and recycle of waste
• Conduct regular evaluation of performance with waste functions.
• Promote waste minimization and recycling through education system
• Develop guidelines for proper waste management.

Methodology:
Performance improvement is needed to decrease the impact on the environment and the cost on the unit budget.

Variations:
• Non-hazardous 75-95%
• Infectious 10-12%

Challenges:
• Staff compliance
• Continuity of the project

Public health significance:
Environment: Environmental burden
Air pollution
Water pollution

Hemodialysis unit: Extra cost
Green Environment unit

Community: Mental health
Reproduction problems

MOPH: National guidelines
Adoption of evidence based interventions

Output:
Comparison of wastes generated from Hemodialysis unit pre and post intervention:

Implication at a national level:
• Development of hospital guidelines for waste management.
• Decrease clinical waste by segregating recyclable wastes generated from Hemodialysis unit.
• Conduct a national survey of health care waste practice.
• Develop national guidelines for waste management.
• Share the experience and the outcome with other dialysis centers.

Water management:
• Reject water can be innovatively used and redirected to central sterilizing department for steam generation, hospital janitor station, for toilet flushing, and for landscape maintenance.

Ethical consideration:
Sustainability: Use of recyclable material
Reuse of resources wisely
No Harm: Providing a safe environment (clear air, clean water)

Take home message:
Evidence based intervention
Performance improvement model
Educational materials
Monitoring & follow up