# FROM FIXED-DOSE TO WEIGHT-BASED DOSE

# Sustainable Precision Imaging that Supports Hospital at Home

Lye K. W.
Depratment of Diagnostic Radiology
Khoo Teck Puat Hospital

## Aim / Objectives

To transform CT contrast practice from a one-size-fits-all approach to precision dosing, enhancing patient safety, reducing waste, and enabling sustainable healthcare that extends from hospital to home.

## Background

### WHY IT MATTERS IN HOSPITAL AT HOME

Every resource we optimize in the hospital creates greater capacity to deliver safe, sustainable, and patient-centred care beyond hospital walls. Precision contrast dosing reduces unnecessary waste while preserving diagnostic quality—supporting a healthcare system that is ready to care for more patients at home.

Precision dosing → Safer, personalised imaging for every patient

Value-based care → Reduce unnecessary contrast use and healthcare costs

Sustainable healthcare → Lower waste and environmental impact

Hospital at Home → Free resources to support care beyond hospital walls

## Interventions / Implementation

**Retrospective study at KTPH Outpatient CT**
June 2025 – February 2026

**1,076 patients with recorded weight**
**(1,747 exams; 671 excluded – no weight)**

**Comparison of Fixed Dose and Weight –Based Dose (0.38 gI/kg)**

**Injector: Medrad Centargo; 370 mg/ml concentration contrast**
**Scanner: GE Reolution Apex CT**

Fixed-dose protocol

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Implement standardized weight-based dosing

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Personalized contrast administration

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Safer enhancement • Reduced contrast use • Lower waste • Sustainable care

## Results & Outcomes/ Discussion

### OPTIMISED CONTRAST UTILISATION

Weight- based dosing reduced contrast use by

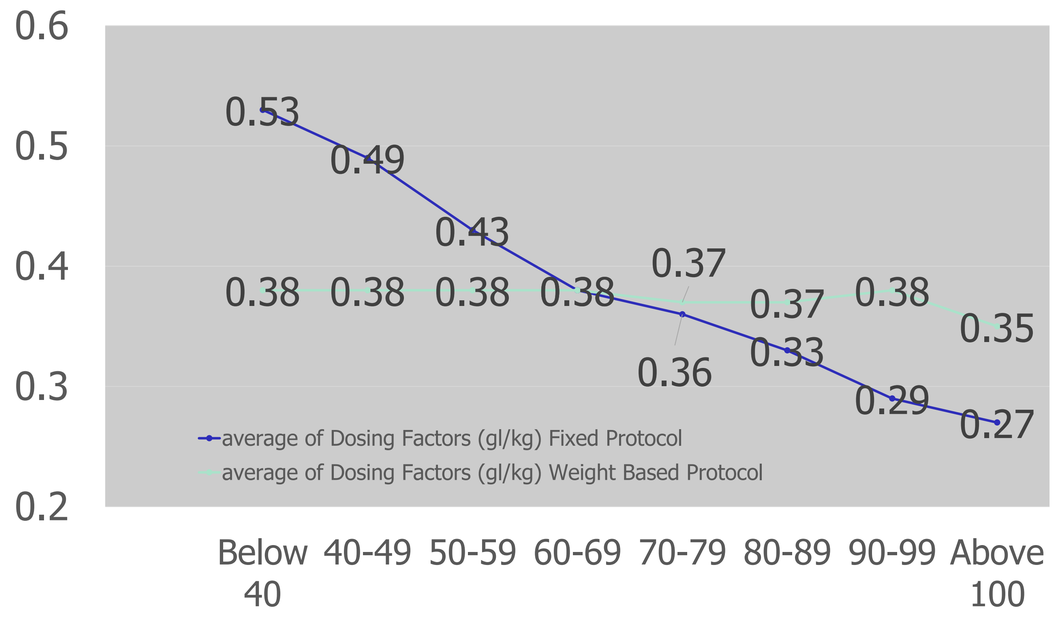
**13.16%**

≈ 13 bottles (100mL) saved per month

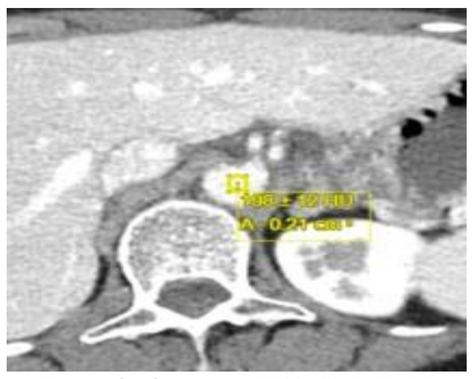
936 mL less contrast used each month

### AVERAGE OF DOSING FACTORS (gI/kg) BY WEIGHT CATEGORIES AND PROTOCOL TYPE

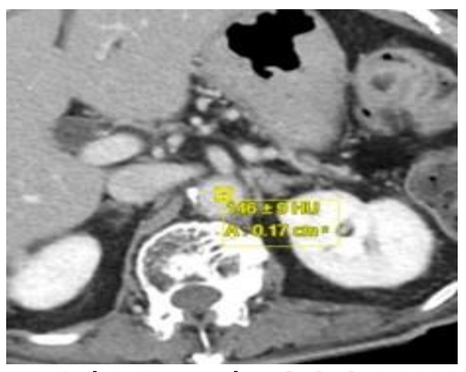
Mean abdominal aorta attenuation (Portal Venous Phase)




### IMAGE QUALITY MAINTAIN



Fixed dose **152.24 HU**
(SD 12.14)



Weight Based **136.24 HU**
(SD 11.17)

## Conclusion

**BETTER FOR OUR PATIENT**

Personalised, weight-based dosing delivers the right contrast for the right patient—enhancing safety while maintaining diagnostic image quality.

**BETTER FOR OUR HEALTHCARE SYSTEM**

Optimised contrast use reduces unnecessary costs and improves resource stewardship, creating greater capacity to support Hospital at Home and value-based care.

**BETTER FOR OUR ENVIRONMENT**

Less contrast consumption means less waste, a lower carbon footprint, and a more sustainable imaging service

**BETTER CARE BEYONF HOSPITAL WALLS**

Small changes in imaging practice can create lasting system-wide benefits—supporting safer, smarter and more sustainable care closer to home.