

## Introduction

- Pediatric patients are a radiosensitive population. Stringent adherence to the ALARA principle is important.
- Abdominal X-rays (AXRs) despite its low effective dose (0.1mSv-0.7mSv), is a frequently ordered study.
- It is worthwhile to audit the local referral practice, dosage and image quality of pediatric digital AXRs at the three centers in the New Territory West Cluster (Tuen Mun Hospital, Tsan Yuk Hospital, Pok Oi Hospital)

## Standard

- Dosage:** the 2016 European Diagnostic Reference Levels for Pediatric Imaging (EDRL), measured in terms of Dose-area product (DAP)
- Image quality:** the European Guidelines on Quality Criteria for Diagnostic Radiographic Images in Pediatrics
- Referral Indications:** iRefer Guidelines published by the Royal College of Radiologists

## Aims

- The median dosage should be below the EDRL for all age groups
- 90% AXRs with DAP below EDRL should be of adequate diagnostic quality

## Methodology

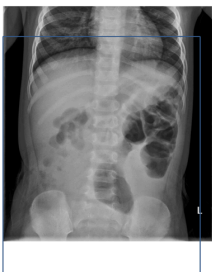
- 3 center, retrospective review
- October 2018 – Nov 2018

Consecutive AXRs (n = 60) DICOM images, DICOM data, booking forms, medical records were reviewed on PACS and EPR. Data collected on

- Dosage
- Image quality
  - Assessed by 2 FRCR radiologists
- Referral indications

## Image quality : inclusion

- superiorly - diaphragm
- inferiorly - pubic symphysis or ischial tubersity



CURRENT PRACTICE



NEW PROTOCOL

## Results

- 30% of AXRs had suboptimal image quality. These films failed to include the field of view superiorly from the diaphragm to the ischial tuberosity/pubic symphysis inferiorly
- 13% of our patients had concomitant supine and erect AXRs, which was not recommended by the iRefer Guidelines
- The dosage of AXR in all age-groups is up standard

## Recommendations

- Establish a new departmental radiographic protocol for pediatric AXRs to ensure optimal image quality
- Share iRefer guidelines with clinicians at the clinical-radiological conferences to establish better referral practice