



Reducing the rays: Prevention of unnecessary imaging in complex & frequent users (CUED) of the emergency department

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Introduction

- Frequent users of the ED (> 4 visits/yr) have poorer health outcomes and psychosocial adversity¹
- Management of CUED is challenging, and many CUED undertake regular investigative imaging
- Excess imaging has teratogenic effects²
- Various existing measures to reduce low value imaging
- For CUED, case-management may reduce imaging via fewer presentations³
- Little known about decreasing low-value imaging in CUED when they present
- Individualised Acute Management Plans (AMPs) are constructed at the PAH

AMPs: guidelines constructed by ED staff to direct management of patients who have presented challenges

Aim: assess whether AMPs are effective in reducing the rate of imaging in CUED

Method

- Data extracted from medical records
- $N = 11$ (female $n = 8$)
- Freq. of X-ray (XR) and CT, total and by region

Doctors: Don't worry, this x-ray is completely safe.
Also doctors:



Results

- Repeated measures ANOVA
- No change in ED visit freq. ($M = 40.0$)
- **Reduction in XR freq., $p = .05$:**
(pre: $M = 20.2$, post: $M = 30.9$)
- No change in CT freq. ($p = .962$) or radiation dose ($p = .733$)⁴
- No change in scan freq. per body region

Discussion

- Possible that AMPs were clearer in guidance for XR indications than CT
- Possible that XRs were used less frequently to exclude minor pathology, but CTs still required when major pathology suspected

Strengths

- First study of personalised plans in CUED

Limitations

- Small sample, low power
- Clinician observance of AMPs unknown
- Possible for CUED to attend other EDs

References

- 1 LaCalle E, Rabin E. Frequent users of emergency departments: The myths, the data, and the policy implications. *Annals of Emergency Medicine* 2010;56(1):42
- 2 Lin EC. Radiation risk from medical imaging. *Mayo Clinic Proceedings* 2010;85(12):1142-6.
- 3 Grover CA, Sughair J, Stoopes S, Guillen F, Tellez L, Wilson TM, et al. Case Management Reduces Length of Stay, Charges, and Testing in Emergency Department Frequent Users. *West J Emerg Med* 2018;19(2):238-44.
- 4 Mettler F, Huder W, Yoshizumi T, Mahesh M. Effective doses in radiology and diagnostic nuclear medicine. *Radiology* 2008;248:254