# Pooled dose auditing using dose management software
## or
# **The share-athon**

CT Users group meeting

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# Proposition

Can we share information and doses from dose management systems?



*Brought to you by - Suck it and see enterprises and the CTUG*

# Organisation

- CTUG members with dose management software installed and working requested to join short working group.

- Teleconference determined the ground rules.

N.B. this isn't a dose survey!!

# Method

- Centre to provide 1000 examinations where the CRIS code was CTPA using excel

- All protocols under this code to be sent regardless of what protocol used

- Data was anonymised – Caldicott Guardian at Nottingham consulted over IG issues

# Challenges

- CRIS code of CTPA poorly describes what examination was carried out.



- Total irradiation events too general – need types of each , scout, axial, helical, fluoro, prep.

# Challenges

- Data field names are not consistent
  - Range of software used

- Not all fields present – we used where possible
  - Local study description (CRIS)
  - Institution
  - Device name
  - Study protocol name (scanner)
  - Total DLP
  - Number of irradiation events

"The nice thing about standards is that you have so many to choose from."

# Results

- Data on 4063 examinations submitted

- 451 per centre

- 16 devices

- Huge range of protocols - record was 24

- This is one centre->

- So CRIS codes are
  not so useful

| |
|---|
| 5.12 PULM ANGIO  1,25 HS 7.5 |
| 5.14 PULM ANGIO/ABDOMEN 1,25 HS 7.5 |
| 5.8 PULM ANGIO  1,25 FEET FIRST |
| Abdomen/Abdomen/Pelvis_QMCI-DOSE |
| Abdomen/NON_CONTRAST_ABDO_I_DO_ |
| Neck/Neck_QMC |
| Spine/Trauma_C.spine_QMC_IDOSE |
| Thorax/CHEST_QMC |
| Thorax/CTPA_+_LEG_VENOGRAM_QMC |
| Thorax/CTPA_QMC_(SLOW)/I_DOSE |
| Thorax/CTPA_slow+Abdo/Pel_QMC |
| Thorax/CTPA+_T/A_AORTA_QMC_I-DO |
| Thorax/GOS_Pulm_angio_<15kg |
| Thorax/PE_CTA_+_BP |
| Thorax/PE_CTA_AND_ABDO_+_BP |
| Thorax/PLAIN_T/A.Aorta_QMC_I-DO |
| Thorax/T/A._Aorta_QMC_I-DOSE |

# Results

## Dose variation by centre (non-CTPA removed)
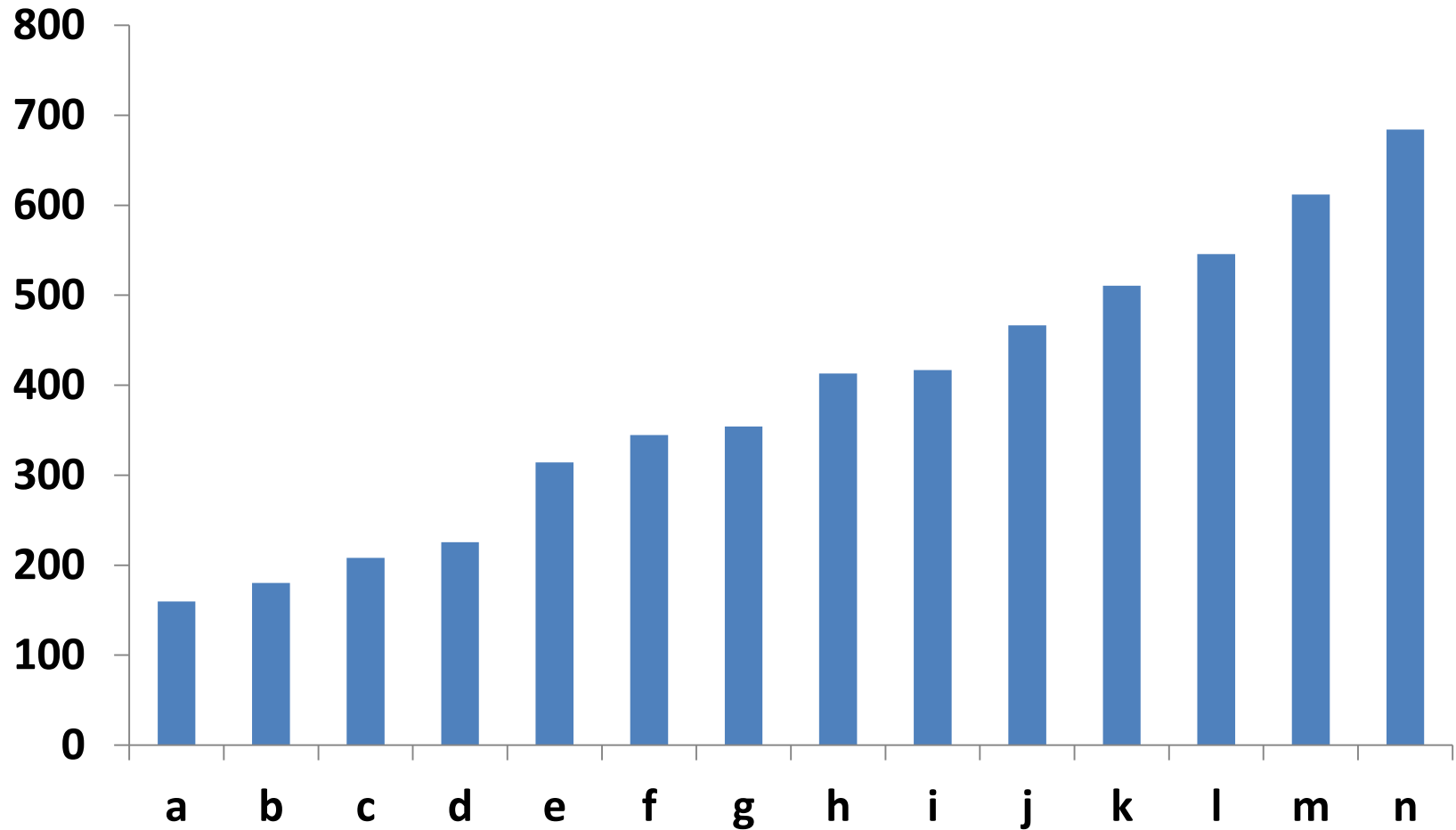
**Average DLP (mGy.cm)**
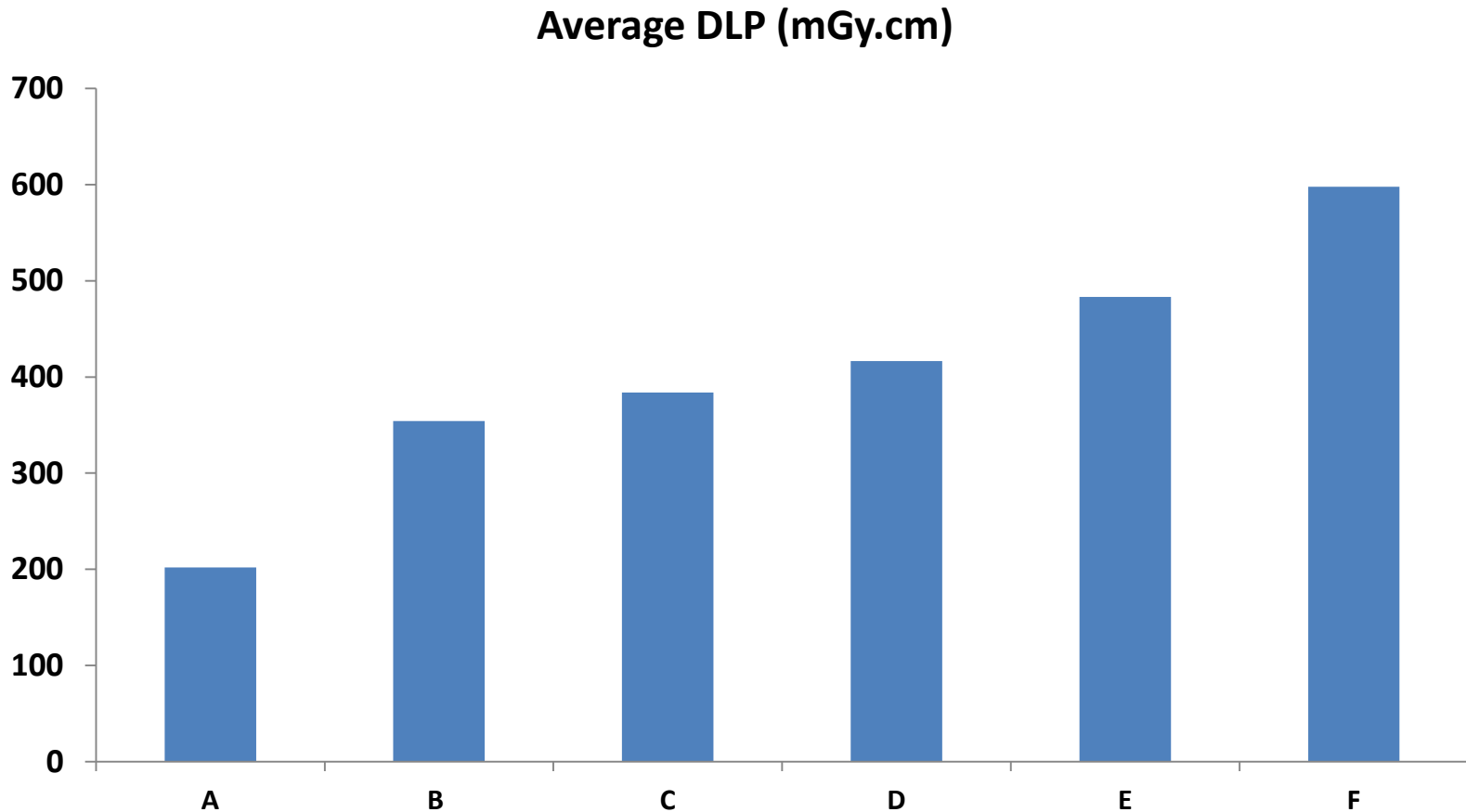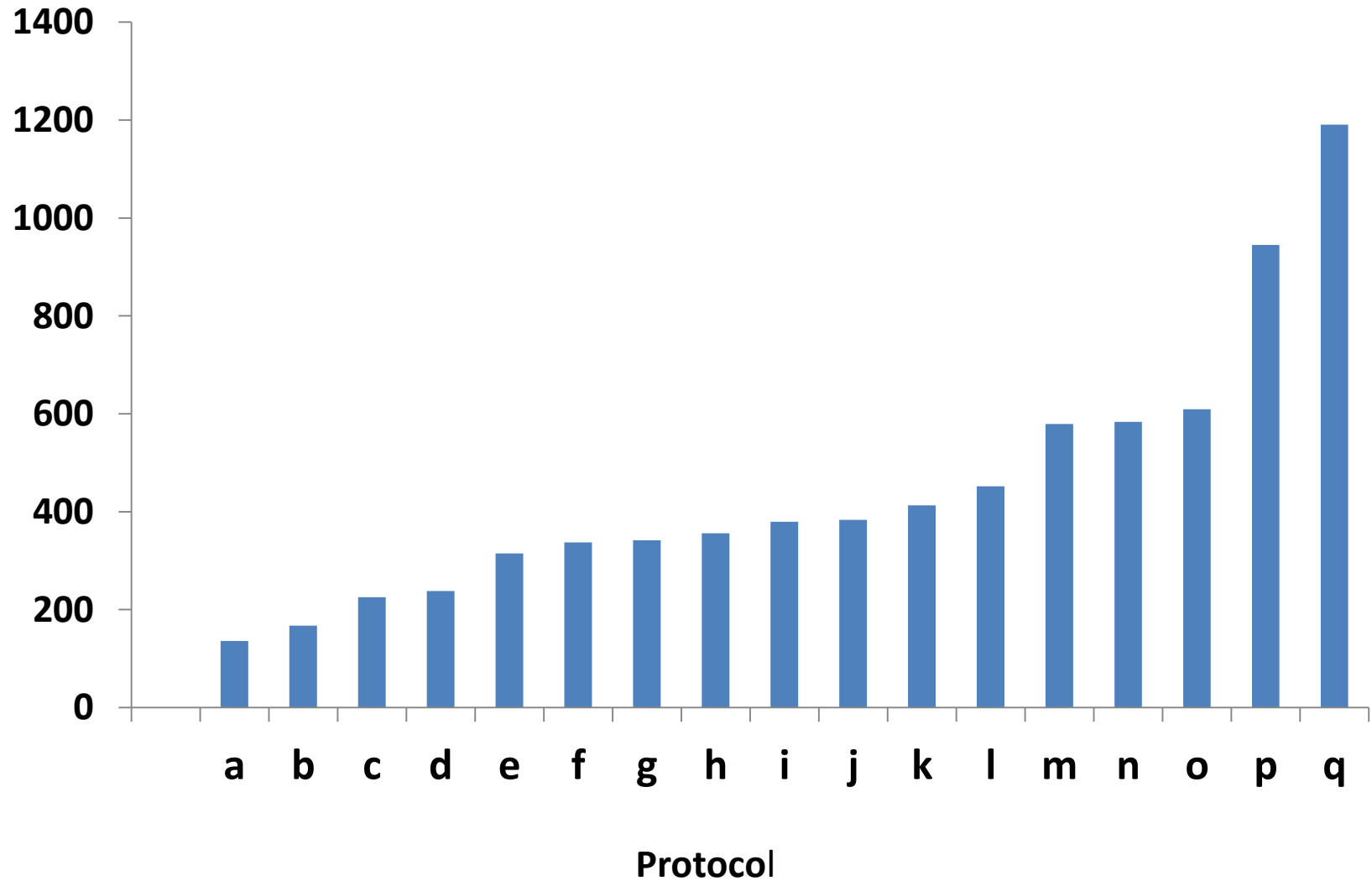
# No irradiation events as a % of total exams
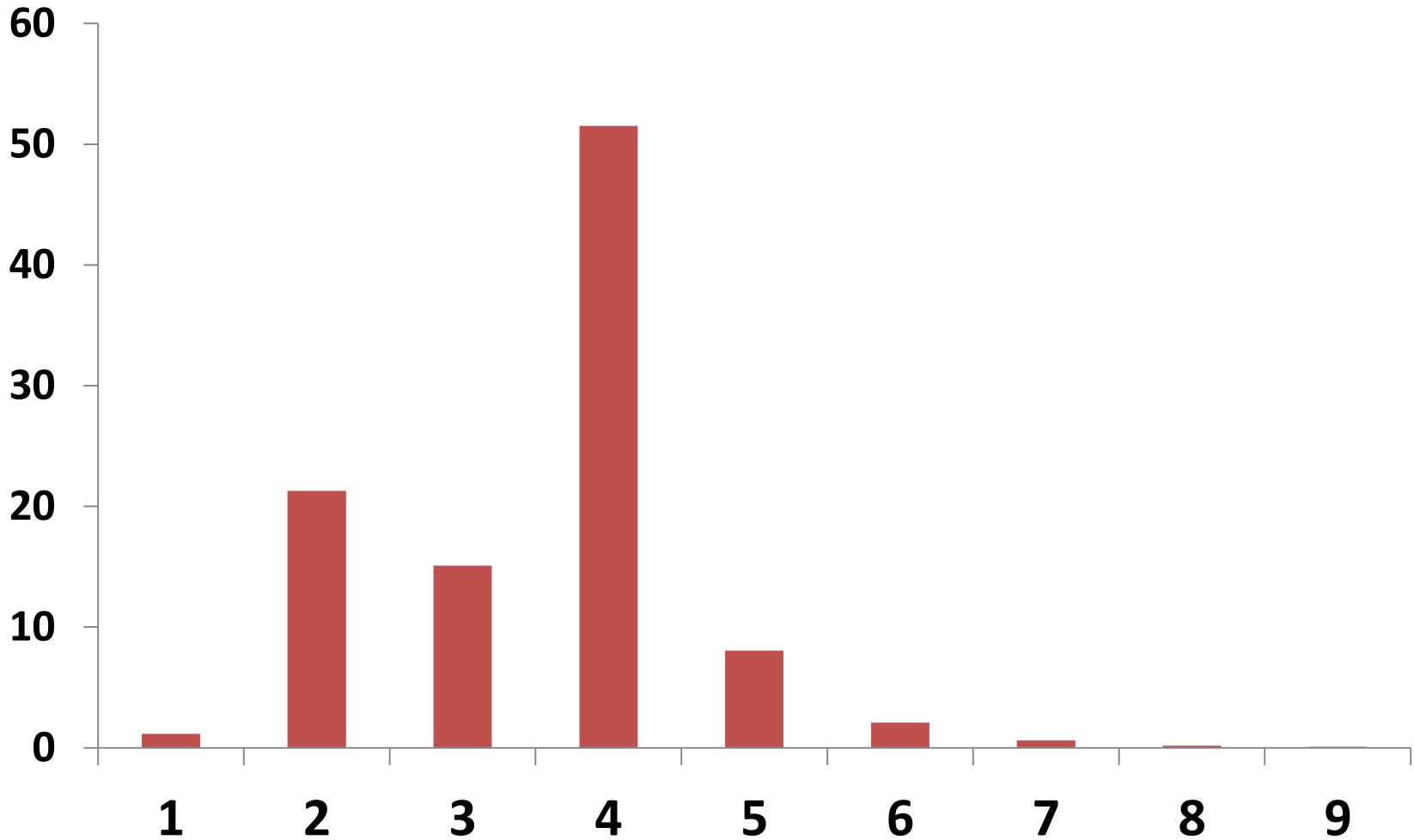
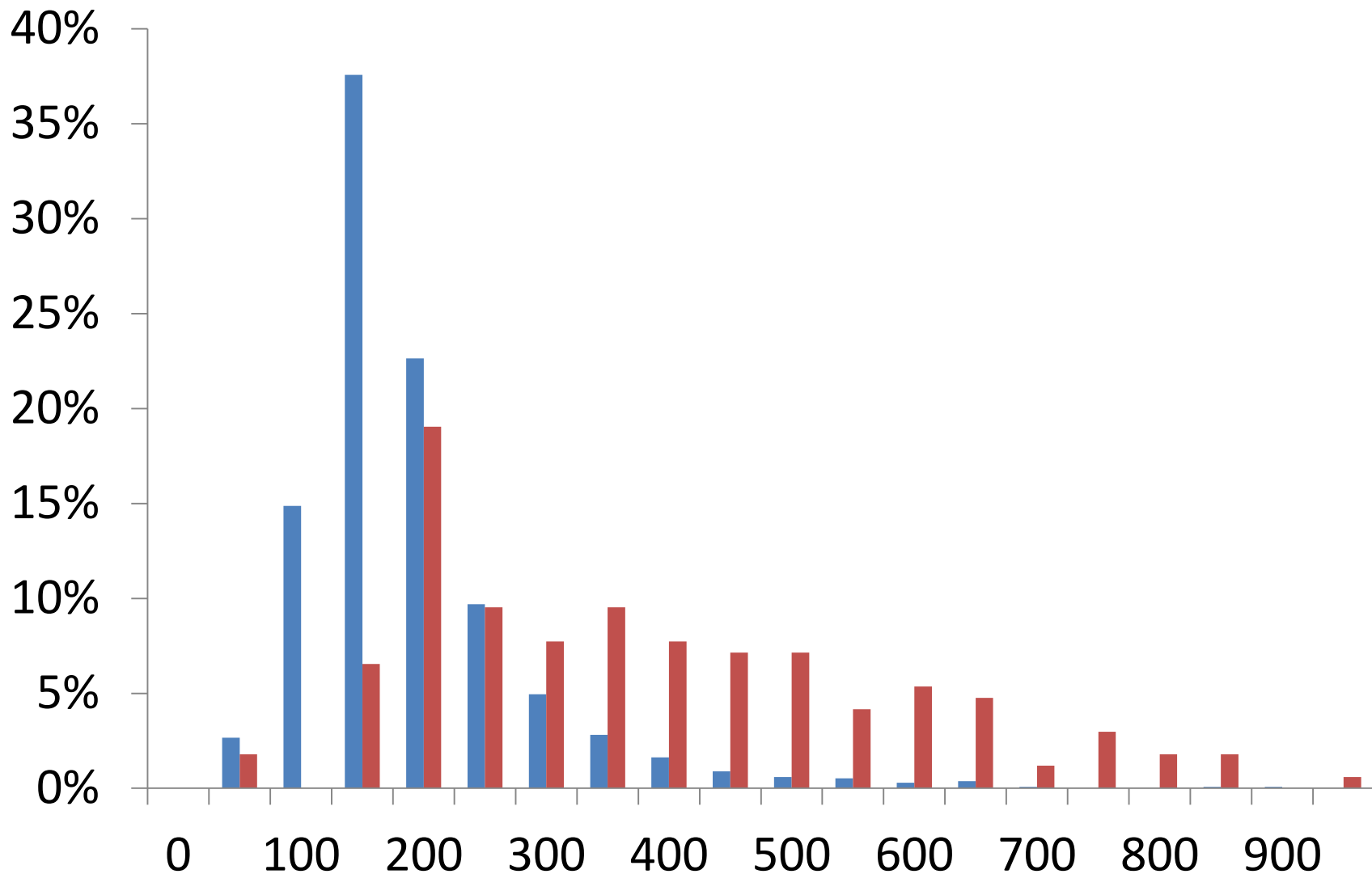# Average of Total DLP by scanner (mGy.cm)  N>10

# Average dose by protocol

N>10

**Average of Total DLP by protocol (mGy.cm)**



Protocol

Comparison of dose distributions between two scanners
(one protocol each) mGy.cm

# Conclusions

- Relatively easy to get large amounts of data
- Results are powerful
- Standards and definitions etc are key to speed up analysis/avoid confusion
- A protocol lexicon will be essential for each survey
- Just dumping the data to a data store will not work – analysis would not be useful for optimisation
- Get yourself a dose management solution

**Thank you** - to those who took part in all aspects