



Mobile X-ray for patients with dementia

Professor, Helle Precht, Pica AB Andersen



Patient perspective

7 am. They say I am going somewhere. I wonder where?



8 am. I am in a car with a stranger and I do not know where I am and I am lying down so I cannot see where we are going.

9 am. I have been left in a building and strangers have told me to wait. I do not know what for. My leg is hurting

9.15 am. A stranger has taken me into a room and she is hurting my leg

9. 20 am. I am screaming at her to stop but she will not stop. Why is no one helping me? Who are all these people?

9.30 am. My leg is hurting so bad. The horrible woman has left me. I don't know where I am.

10.30 am. Why am I here? Who are the people passing me? Why is my leg hurting? Where am I?

11.30 am. A man is talking to me and telling me I am going home. Can I trust him? Will he hurt my leg? I need the toilet but I don't know what to do

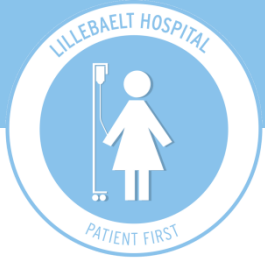
12.15 pm. I know this person's voice and it makes me happy. She is bathing me. That is all wrong. We usually eat now and bathe later

1.15 pm. I'm upset. It's all wrong.

8 pm. I cannot sleep. Where am I?



The examination lasted max. 15 minutes.



The organisation of Mobile X-ray

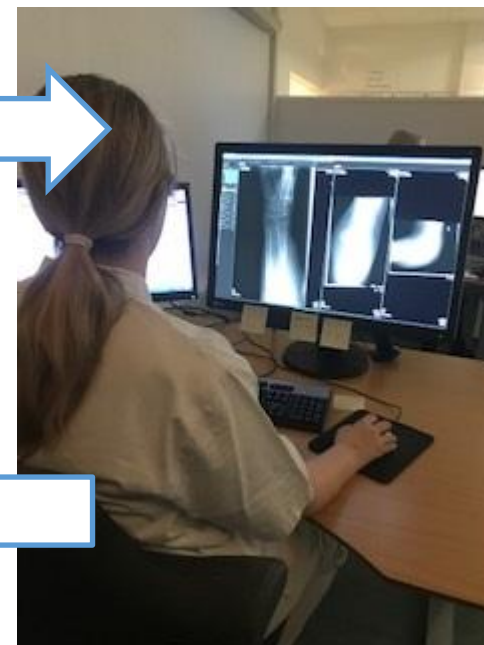
A MD sends a referral for a radiology examination to our department

The staff at the institution calls the mobile radiology unit and together they plan the visit

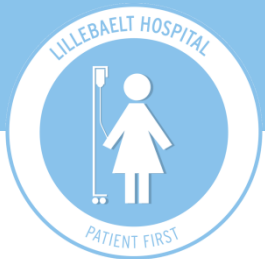
The radiographer obtains the images, sends them to PACS and the answer is sent to the referring MD

If the patients symptoms are acute the images are reported immediately

Mobile X-ray - How?

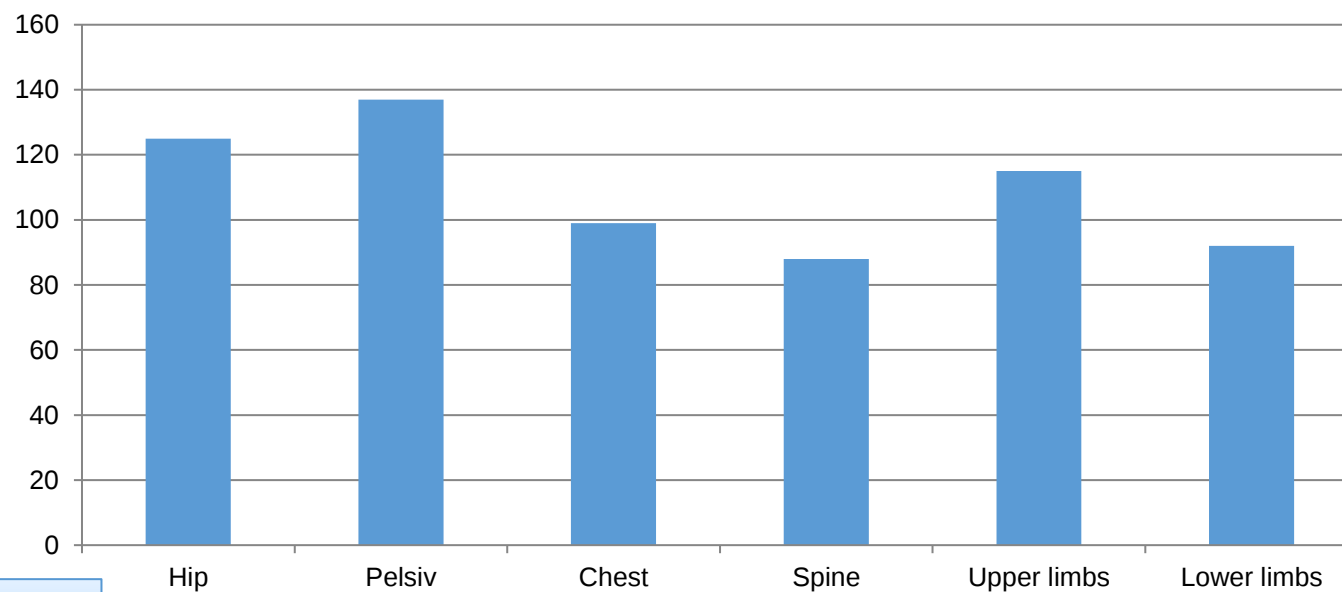


Answer to the
patient/staff before
the radiographer
leaves



430.000 Citizens

Mean yearly:
656 images of 422 patients



Mobile X-ray - How?

- 5 dedicated radiographers
- Open all week days 9am- 3pm
- All patients referred to us have dementia or other psychological disorder and will benefit from a home visit
- The patient must be living at a home care facility or other institution
- Images of bones and chest



Pros

- Patients remain feeling safe and secure, even long after the examination
- Meaningful work for the radiographers
- More proximity to health - less hospital
- Developing for the radiographers

Currently still during preparation but a pilot study shows that there is pathology in 19%, of which 50% come for treatment at the hospital. This saves 92% of the patients a trip to the hospital

Cons

- Challenging physical work environment
- Not economically viable in its current form
- Requires investment funds
- Requires a great deal of communication effort to get the knowledge out to referring doctors
- Requires permission from the authorities

How about the image quality?

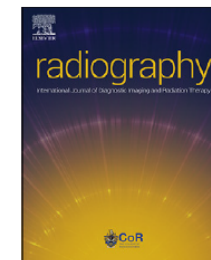


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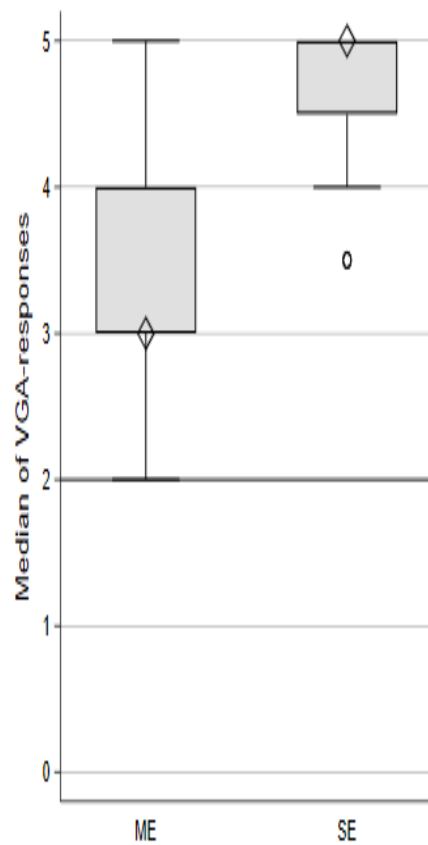
Radiography

journal homepage: www.elsevier.com/locate/radi

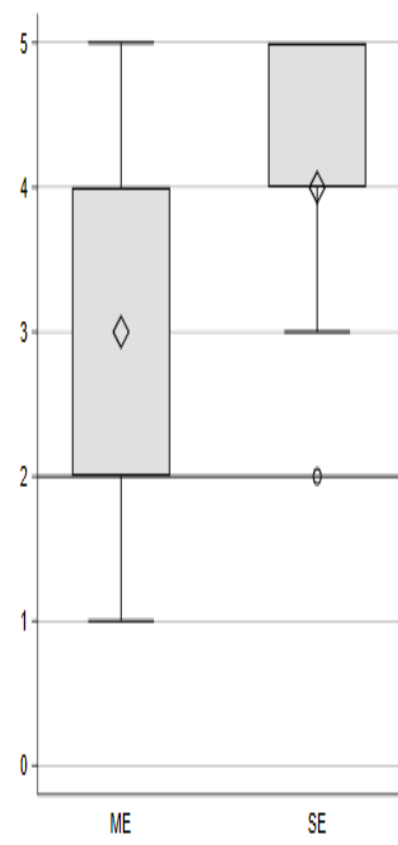


Comparison of image quality in chest, hip and pelvis examinations between mobile equipment in nursing homes and static indirect radiography equipment in the hospital

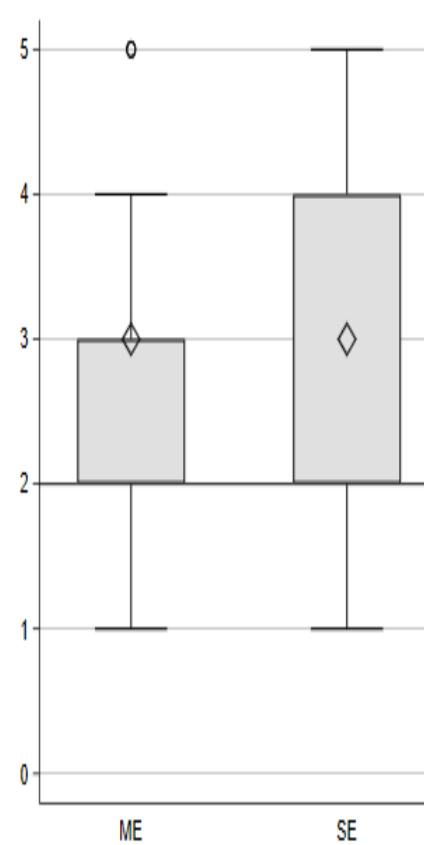
H. Precht ^{a, b, c, *}, D.L. Hansen ^{d, e}, B.M. Ring-Pedersen ^{a, f}, L.F. Møller Hansen ^{a, f}, D. Waaler ^g, A. Tingberg ^h, M. Midtgaard ^f, M.G. Jensen Ohlsen ^f, S.T. Juhl Hankelbjerg ^f, P. Ravn ^f, I.E. Jensen ^f, J.K. Christensen ^f, P.A. Blackburn Andersen ^f



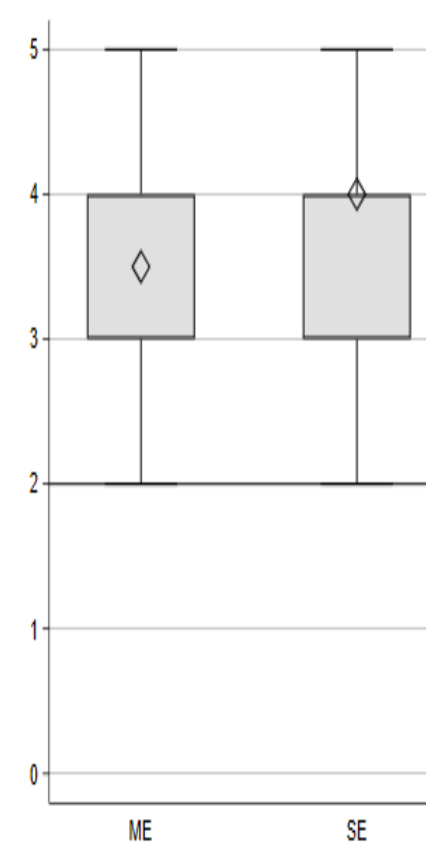
Pelvis



Hip AP



Hip Axial



Chest

Do the patients benefit?

“Every time a demented citizen goes to the hospital, they become disoriented and overstimulated, which makes them very frustrated. It can take days, and sometimes several weeks, for them to recover”

Nurse from a facility for demented citizens

“If there was no mobile X-ray, he would go with a fracture until it healed on its own. It would require anesthesia to have him examined at the hospital. Now he is just as calm as when you came, so mobile X-ray is, especially for the demented citizens, worth its weight in gold”

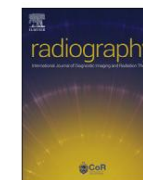
Nurse at care center



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Exploring the patient perspectives of mobile X-ray in nursing homes – A qualitative explorative pilot study



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ABSTRACT

Introduction: For patients with dementia, behaviour and reactions to stimuli can change and an X-ray examination in the hospital can have be a frightening experience. The aim of this study was to identify

Qualitative research methods:

1. Participant observations, with dementia patients living in nursing homes.
2. Semi-structured interviews, with health care professionals from the nursing homes.

A red speech bubble containing the word "results" in white lowercase letters.

results

4 main themes:

- *The importance of an usual environment, behavior and reactions*
 - *The impact of human contact*
 - *The consequence of outpatient examinations for dementia patients*
- The experience of mobile x-ray*

Radiographers perspectives

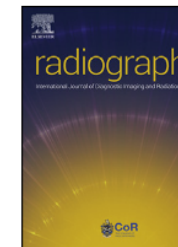


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Exploring radiographers' experience with mobile X-ray of patients in their homes

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ABSTRACT

Introduction: To offer citizens with frailty or dementia living in nursing homes or other institutions a less stressful and anxious X-ray examination, a Danish hospital offers to perform the examination in the citizen's residence. This has changed the working procedure for the radiographers performing the examination.

Individual semi-structured research interviews

Outcome structured after 5 themes:

- *Communications*
- *Care*
- *Quality assurance*
- *Utilization of competences*



Publication on Patient Centred Care & implementation

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Advantages & Disadvantages

Technical note

How to set up a mobile X-ray unit in the community - Implementation initiatives for patient-centred care



Practical aspects

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ABSTRACT

Background: Mobile X-ray unit have previously been widely used within hospitals in general, predominately for imaging patients admitted to intensive care units or for patients who cannot tolerate a visit to the radiology department. It is now possible to have an X-ray examination outside the hospital in nursing homes or to bring the service to frail, vulnerable or disabled patients. A visit to the hospital can be a frightening experience for vulnerable patients living with dementia or other neurological disorder. It can potentially have a long-term impact on the patient's recovery or behaviour. This technical note aimed to

