

# Introduction of a New Electronic System in Surgery during the COVID-19 Pandemic

Neville Jacob, Osman Chaudhary, Nourelhuda Darwish, Helen Pardoe

Surgical Department, Princess Alexandra Hospital NHS Trust, Harlow, Essex, United Kingdom

## Introduction

The ongoing COVID-19 pandemic has emphasized the need for preventative measures to avoid spread of disease. This has included maintaining social distancing, thus making surgical handovers and ward care particularly challenging.

The surgical department at Princess Alexandra Hospital (PAH) were focused on improving surgical handover and ward care with particular focus on efficiency and information governance, while maintaining social distancing.

## Aims

To prospectively audit the introduction of a new electronic-handover (e-Handover) approach with a particular focus on;

1. Improving the efficiency of ward rounds.
2. Improving information governance.
3. Abiding by government advice regarding social distancing when appropriate.

## Methods

- A pre-implementation baseline questionnaire was sent to all surgeons at PAH to find information about the current system (n=37).
- A small group convened and proposed a project to introduce NerveCentre™ and iPads.
- Nervecentre™ software for handover and ward use was introduced with specific training for all staff via written information and tutorials.
- 10 iPads and 1 laptop were provided to junior doctors to assist them with their clinical work.
- iPads were modified to include limited clinical noting, clinical laboratory reports, radiology images and reports, and e-Prescribing
- A second questionnaire was sent out post-implementation to assess how the new system was being received and the results were analyzed (n=23).

Figure 1 – Comparison of safety and efficiency of key markers using paper lists vs electronic lists.

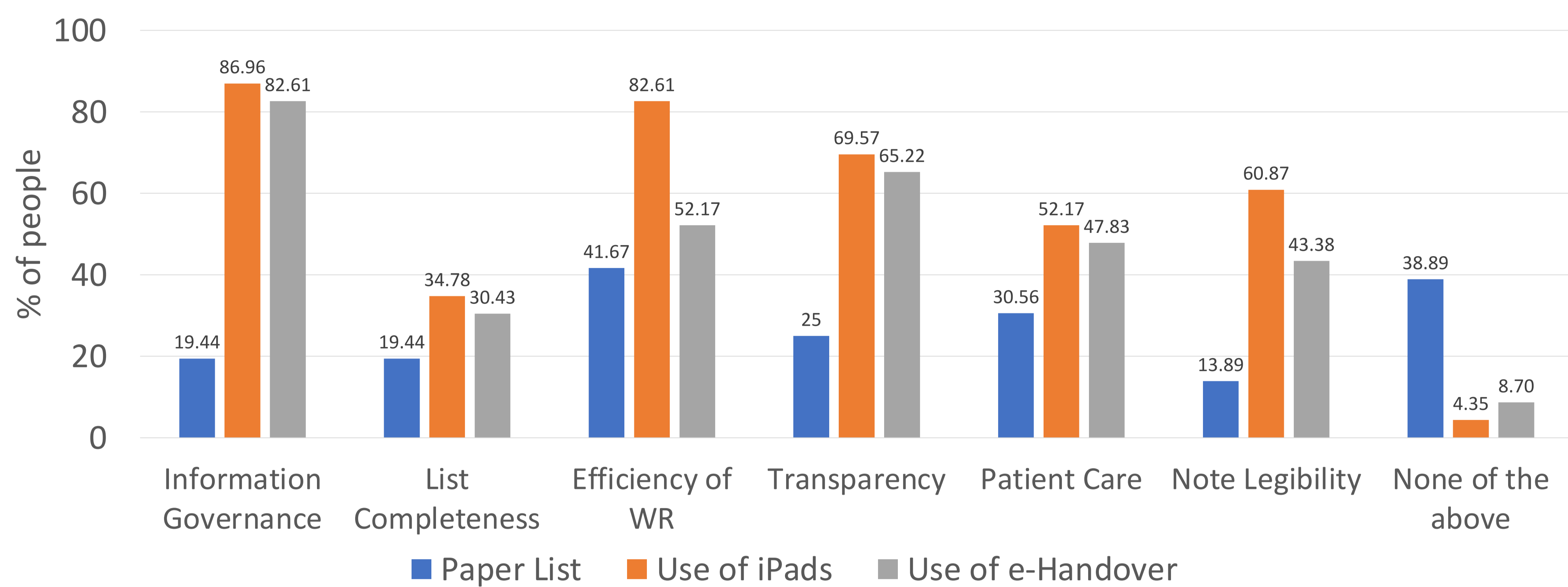


Figure 2 – Effects of using electronic system with respect to returning to an MDT room to check clinical information

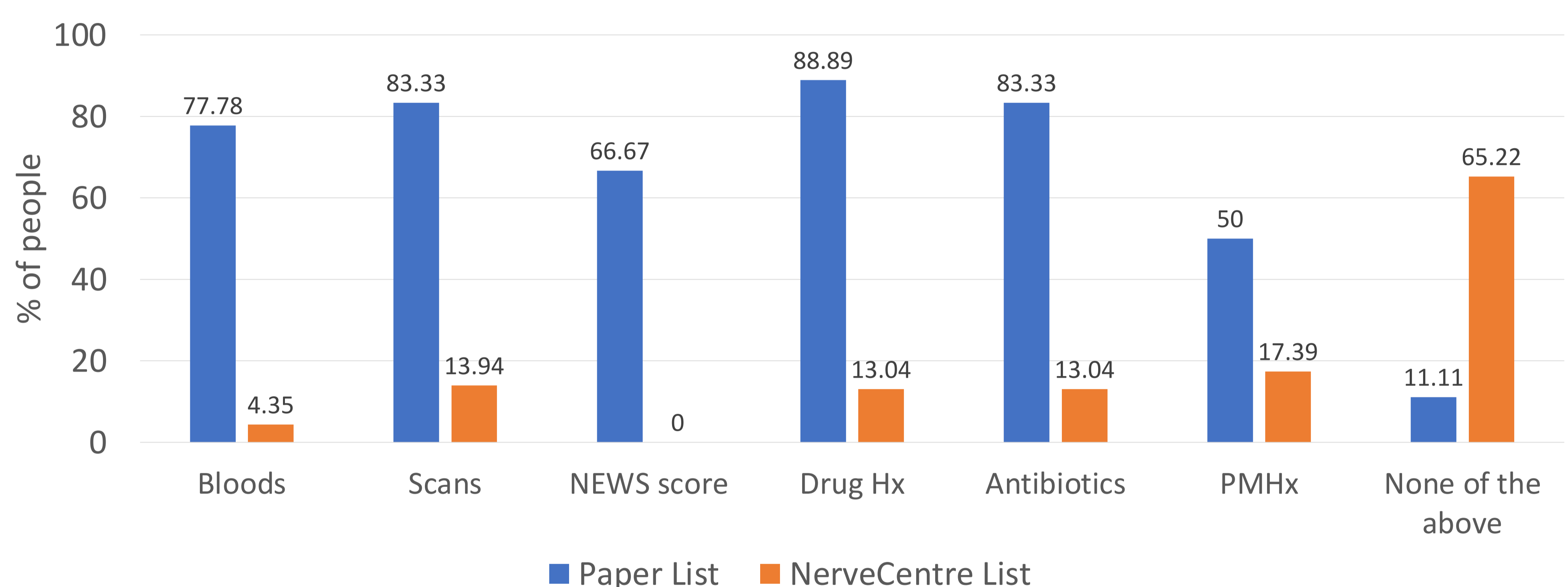


Figure 3 – Effects of an electronic system on information governance

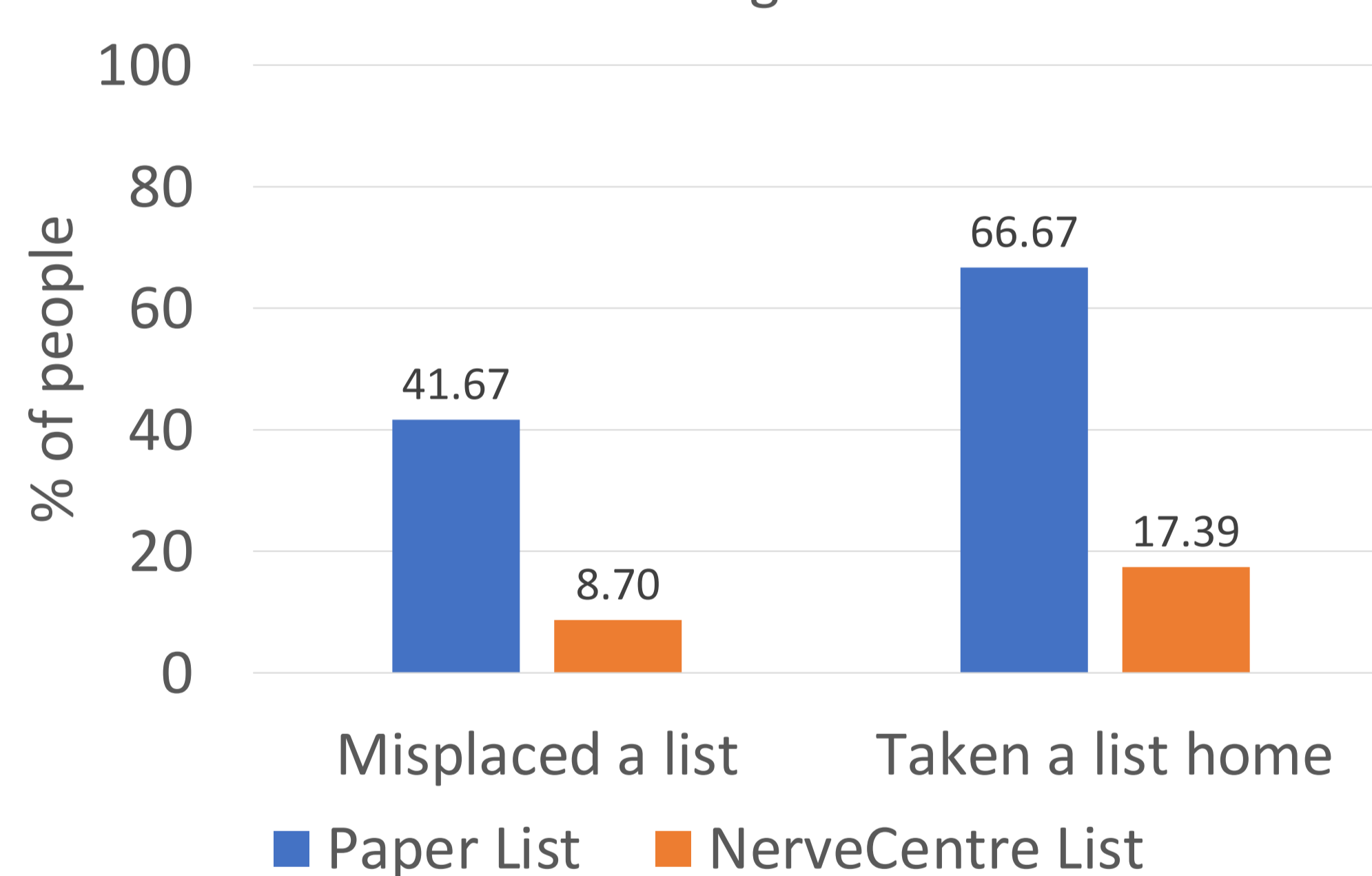
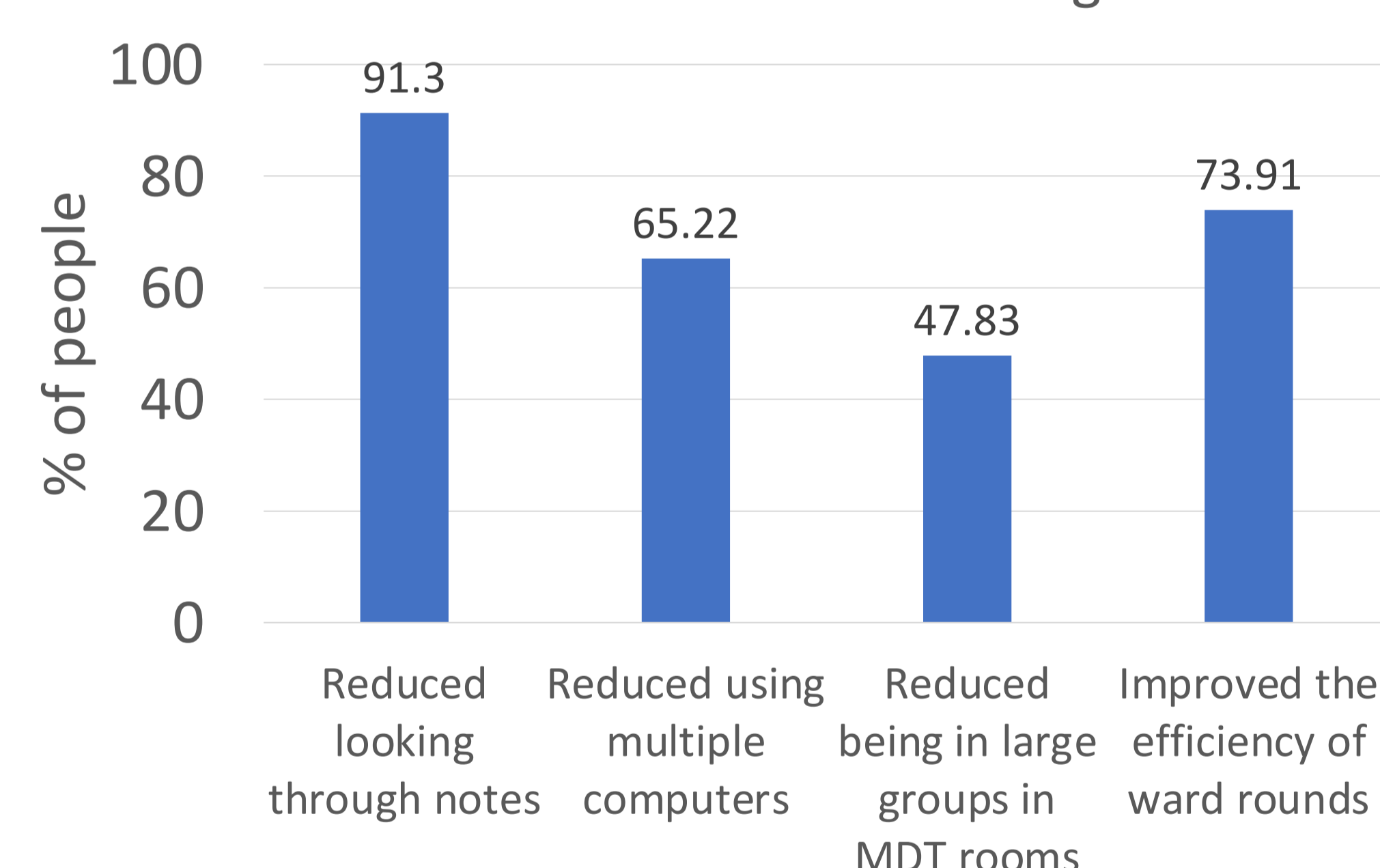


Figure 4 - Effects of using iPads and Laptop on Wheels on social distancing



## Results

1. **There was significant improvement in information governance ( $p<0.001$ ) and efficiency of ward rounds ( $p=0.002$ ) (Figure 1).**
2. **Less doctors needed to return to the multi-disciplinary team room during ward rounds to check a patient's bloods, scans, observations and medications ( $p<0.001$ ) (Figure 2).**
3. **Fewer doctors were misplacing lists ( $p=0.006$ ) or taking lists home ( $p<0.001$ ) (Figure 3).**
4. **65.22% less doctors used multiple computers and 47.83% more doctors said they were more able to maintaining social distancing. (Figure 4).**

## Conclusion

Being able to carry iPads and laptops during ward round and between wards, has restricted the number of times we enter busy multi-disciplinary team groups and thus improve the efficiency of our ward rounds. The surgical department at PAH is now functioning using a paperless handover, reducing the risk of losing paper with key identifiable clinical information. This has helped us to abide by information governance laws. We are working with the IT department to improve existing software, and have created a teaching program to educate new doctors to use the electronic handover so that we can continue using the system during yearly changeovers.