

Improving the Sustainability of Early Phase Clinical Trials: Developing a Kit Tracking Tool to Reduce Trial Related Waste

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Background

- Climate change caused by waste production is having a detrimental impact on the environment and human health.
- Internal audits indicate that clinical trials produce a considerable amount of waste due to clinical trial kit (kit) management.¹

Aims

- To design and implement a tool that can be used to keep a kit inventory and assess its feasibility.
- To capture information on kit management and kit disposal.

Methods

- A kit tracking and waste survey was distributed to research teams at The Christie NHS Foundation Trust to understand how clinical trial kits are managed.
- Kit disposal for early phase clinical trials was monitored for eight weeks from 6th Dec 2021 – 28th Jan 2022.
- A kit tracker was developed in Microsoft Excel and distributed to seven clinical research nurses (RNs) at The Christie for use over eight weeks. Feasibility of the kit tracker was assessed using:
 - Stock counts at weeks four and eight.
 - Feedback questions sent via email at weeks two and six.
 - Final survey that was distributed after eight weeks.

Results

Survey on Kit Management at The Christie

- Out of the 42 staff members, 36 (86%) do not keep any tracker or inventory of clinical trial kits that have been delivered, used and disposed of.
- Staff members were asked to rate on a scale of 1-10 (1= extremely easy, 10 = extremely difficult) how easy is it to monitor clinical trial kit supplies. 32 (76%) staff members responded with ≥6 out of 10 for difficulty, with the majority of staff finding it difficult to monitor kit supplies (figure 1).
- 28 (68%) staff members thought that implementing a kit tracker could reduce the amount of kit waste in their research team.
- 36 (90%) staff members answered that they would find a kit tracker useful for placing kit orders.

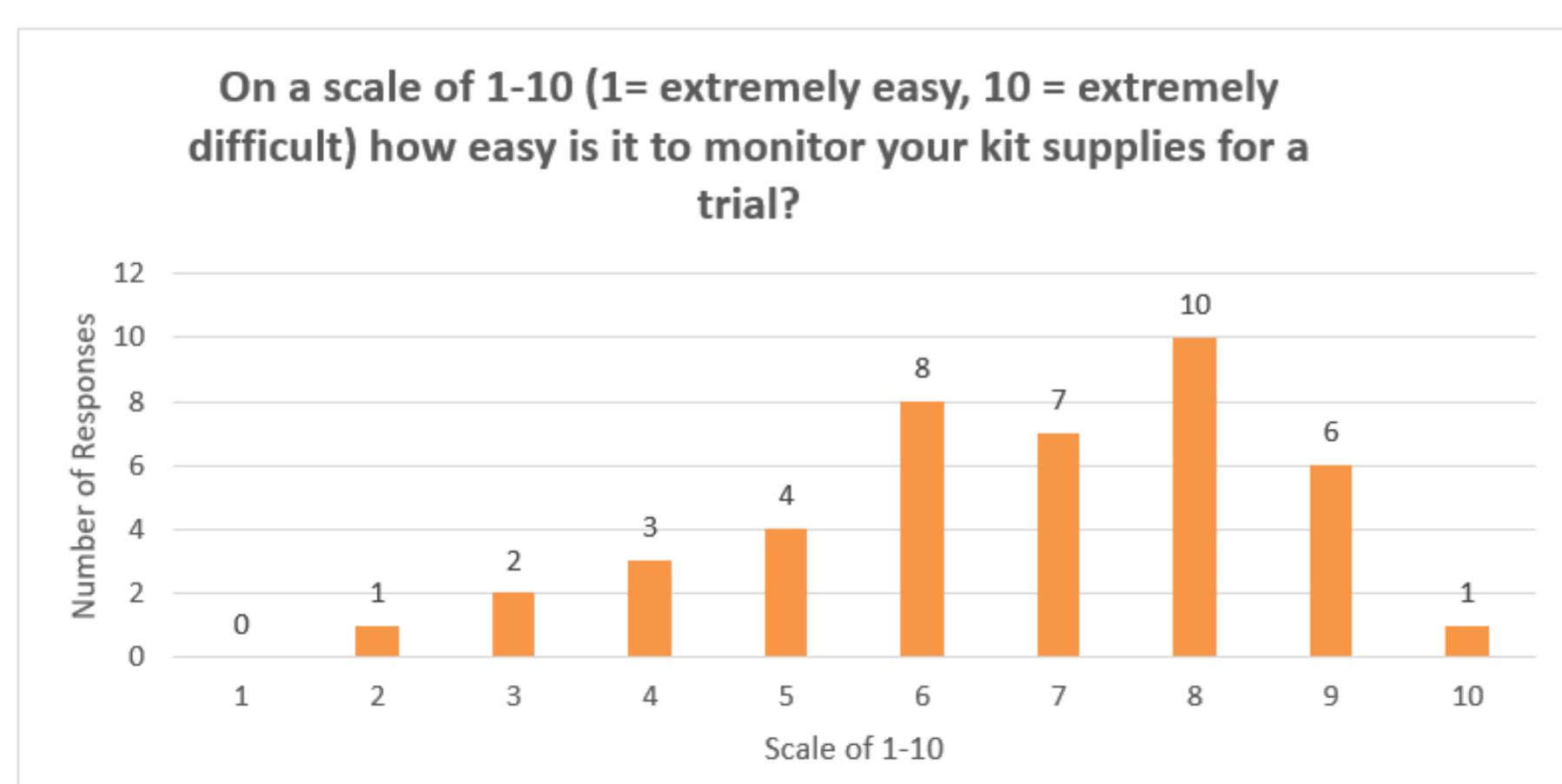


Figure 1: Responses to kit tracking and waste survey; assessing how easy it is to monitor clinical trial kit supplies.

Results (continued)

Kit Disposal Results

- In total 544 kits were disposed of over eight weeks on seven different dates from 21 clinical trials (figure 2).
- Kits were also monitored for newly opened studies. Out of 154 kits in total, 78 (51%) had expired or were disposed of by trial sponsor request.

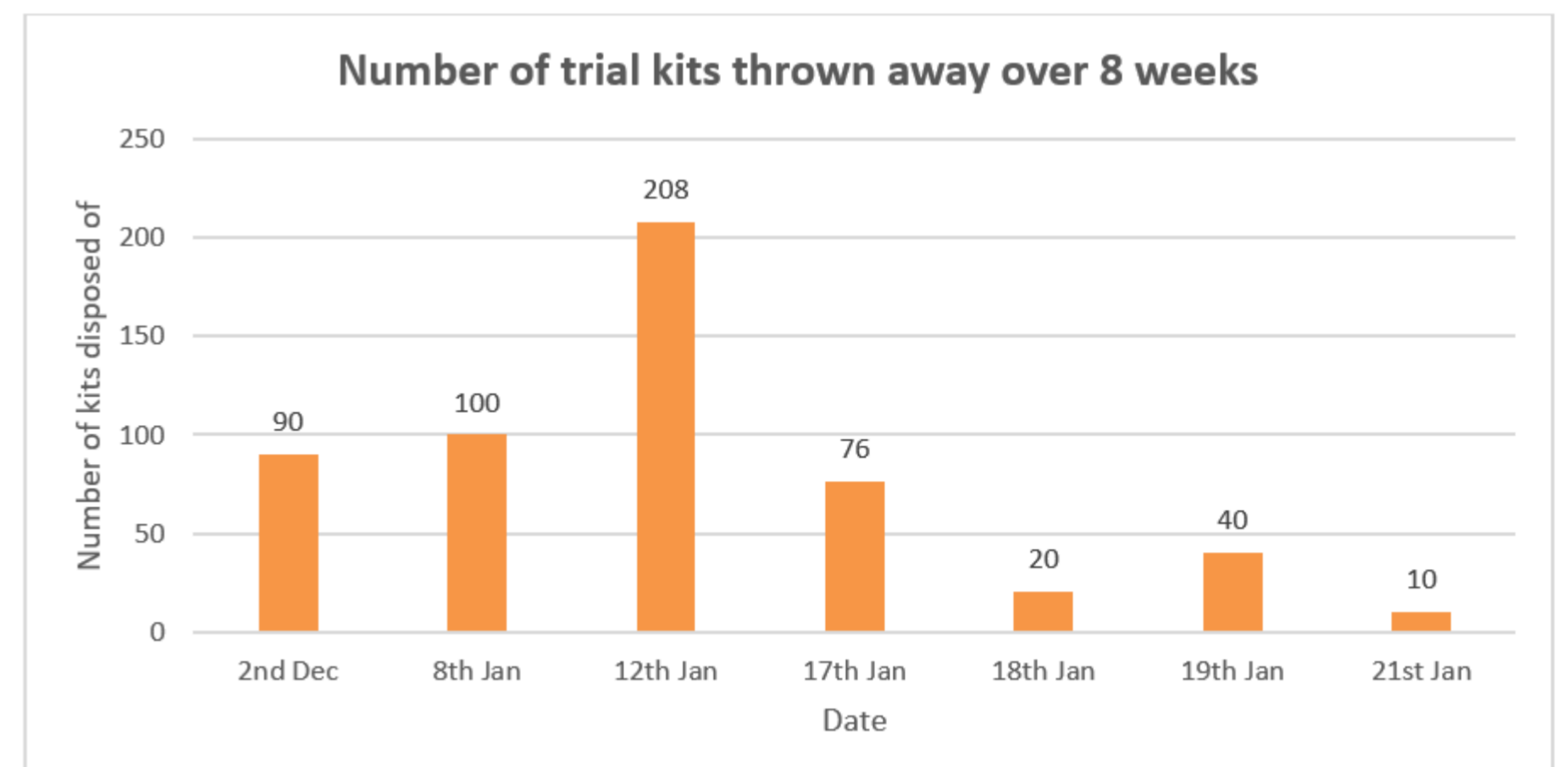


Figure 2: Bar chart showing kit disposal for early phase clinical trials over eight weeks.

Kit Tracker Results

- Six out of the seven research nurses responded to the final survey and all six of them stated that the kit tracker was helpful.
- Three out of six nurses thought the kit tracker could help reduce kit waste.
- However, stock counts revealed that the kit trackers did not accurately reflect the true kit stock.
- Barriers to keeping an accurate inventory include:
 - Staff absence
 - Compliance
 - Volume of kits sent by clinical trial sponsors
 - Software choice
 - Insufficient storage

Next Steps

- Additional work needs to be done to identify alternative inventory systems that could be used to manage clinical trial kits and improve team efficiencies.
- There is an opportunity to work with trial sponsors to reduce the number of kits sent to site and decrease kit waste.
- Assess whether kit management could be a full-time role within the early phase research team and whether this could reduce overall kit waste and save time for research nurses.

Conclusion

- This project highlights the difficulties with managing kit supplies.
- More work needs to be done to optimally manage kits, reduce the volume of kits and improve site processes to reduce the volume of waste being produced by early phase research.

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¹ Darlington, E. (2019) 'The Environmental Impact of Early Phase Clinical Trials: Can waste be reduced to improve sustainability of early phase research?'. MRes. University of Manchester.