

1) Title of Project

Supporting, developing and coordinating the Trial Forge SWAT Network

2) Abstract

Introduction: Adequate recruitment and retention is essential for successful randomised controlled trial (RCT) completion, however frequently used recruitment and retention strategies have no effectiveness evidence. Studies within a Trial (SWATs) enable rigorous evaluation of these strategies. The Trial Forge Network was set up in 2021 to coordinate and support the undertaking of SWATs in the UK and internationally and a range of priority actions (short, medium and long term) were identified. This CTU Infrastructure award aimed to facilitate the support of this network and development of the short-term actions: Identification of priority SWATs, funding support, SWAT resources and SWAT repository functionality.

Methods: Four streams of work, focussed on each of the short term priorities were undertaken.

Results: Following a review of widely used recruitment and retention strategies, a list of six recruitment and five retention SWAT priorities has been generated. Guidance for NIHR applicants to use when including a SWAT in an application has been developed. Survey findings determined the need for SWAT resources, with three animations and 10 infographics (both lay and academic) generated. The need for a training course was assessed and this will be re-evaluated following implementation of the SWAT resources developed. SWAT repository registrations have been categorised and resources for each requested. A revised SWAT Repository registration document has been developed along with a search strategy to help users better identify relevant SWATs.

Economic evaluations need to be considered when deciding if further SWAT replications are required. Additional funding has been sought to undertake the necessary activities to further develop Trial Forge Guidance 2 to include this.

A funding proposal has been submitted to the NIHR to support longer term SWAT activity. This is currently under consideration with the Department of Health and Social Care.

Conclusion: This award has facilitated the progression of the Trial Forge SWAT Network Short Term Priorities. The identified SWAT priorities, text for funding applications and SWAT resources developed and improvements made to the SWAT Repository should make a significant impact to the ease of undertaking and use of SWATs.

3) Introduction

Poor participant recruitment, retention and data collection methods in randomised controlled trials contributes to research waste that has been described as a continuing scandal¹. However, strategies for improving the efficient conduct of trials, such as recruitment, retention and data collection are frequently used without evidence to support their use. To remedy this, rigorous evaluations of these strategies are necessary; and studies within a trial (SWAT) enable this evaluation and generate evidence to support effective and efficient trial conduct.

As part of a previous CTU Infrastructure grant, in 2021 the Trial Forge SWAT Network was developed². This currently brings together around 40 national and international institutions who are either actively undertaking or have an interest in undertaking SWATs and continues to grow. This network is an important asset in the effort to coordinate and increase the evidence base for recruitment, retention strategies and other trial processes.

During Trial Forge SWAT Network development, discussions with members identified both barriers to undertaking SWATs and suggestions to improve this. These barriers and facilitators were subsequently collated to identify key themes. A prioritisation exercise was undertaken in 2022 to identify the top four short, medium and long term priorities for improving SWAT conduct and consequently the evidence base for trial conduct.

This CTU infrastructure award aimed to facilitate the support and undertaking of the Trial Forge SWAT Network short term actions:

- 1) Priorities: Develop a list of settings and/or populations for recruitment/retention interventions where SWAT replication is needed to reduce the evidence gap.
- 2) Funding: Develop SWAT proposal text for grant funding applications.
- 3) Personnel: Develop information resources to encourage Chief Investigators to include a SWAT in their trials.
- 4) SWAT Repository: Improve functionality of the SWAT Repository, developed by the MRC Northern Ireland Hub for Trials Methodology Research

4) Methods

To support, develop and further coordinate the Trial Forge SWAT Network (TFSN) we undertook four streams of work:

1. Identifying evidence gaps and setting priorities

We assessed decision making in relation to when there is sufficient SWAT evidence to deem an intervention effective or ineffective and so cease further replications. Trial Forge Guidance 2 (TFG2)³ was reviewed which identified that there is a need to extend this guidance to include consideration of economic implications of SWATs. This work required significant additional resource, for which additional funding has been secured through the Health Research Board Trial Methodology Research Partnership Ireland (HRB TMRN).

With input from the wider TFSN, we collated a list of key considerations when determining the priority level of a SWAT. Evidence was collated on the top 20 ranked questions from PRIORITY I recruitment, as well as for those strategies that were seen to be frequently used – 80 trials published in the HTA journal between January 2020 and June 2022 were searched. A working group (WG) was convened and each member selected their top 5 recruitment strategies, with rationale, which were then ranked. The same methodology was used to assess the retention strategies, using PRIORITY II, and a recent MSc project which explored retention priorities (undertaken by a member of the WG, and supervised by two collaborators).

This has resulted in the development of a priority list of six recruitment and five retention strategies which require SWATs to be undertaken to ascertain intervention effectiveness.

2. Funding and text to include in grant applications

We collaborated with the NIHR to provide guidance on the content and detail required when including a SWAT in a NIHR funding application.

We met with the NIHR to discuss how SWAT support can be facilitated and operationalised in the longer term, with a funding proposal developed for this.

3. Resources for trial teams to support them to do SWATs

A dedicated WG collaborated with the NIHR and the wider TFSN to create engaging and inclusive resources that cater to a wide range of audiences.

To identify useful SWAT resources we started by conducting a pilot survey at the International Clinical Trials Methodology Conference (ICTMC) in 2022. This survey assessed respondents levels of SWAT knowledge, and opinions on whether SWAT training and resources were required. Subsequently, a WG meeting was held to agree what questions should be included in a larger survey, which stakeholders should be consulted and how this should be disseminated. The final survey was distributed across various UK and international stakeholders, via the TFSN, UK Clinical Trials Units, the UK Trial Managers Network, the Trials Methodology Research Partnership (TMRP) Trial Conduct Sub Groups, the HRB TMRN and to industry partners via a face to face meeting.

Survey results enabled identification of the content and types of resources likely required by the wider research community. The WG were actively involved in reviewing initial drafts of animation scripts for three key themes, with comments also helping to form the content for accompanying infographics.

4. SWAT Repository

A dedicated TFSN WG (8 members) was convened to support this element. In pairs, the group reviewed and categorised all SWATs listed on the SWAT Repository. Individual members of the group then liaised with applicants by email to obtain relevant resources.

In conjunction with Trial Forge, we have developed a space for these resources to be made available electronically and developed an initial search strategy to improve usability of the Repository and Repository Resources.

The SWAT Repository registration process has been reviewed throughout to identify necessary modifications; these have implemented these accordingly.

5) Results and Conclusion

1. Identifying evidence gaps and setting priorities

Trial Forge Guidance 2 was reviewed, which highlighted that consideration of economic evaluations alongside SWATs was an important element missing from the present guidance. To resolve this, we have collaborated with colleagues at University College Cork, Ireland to secure 12 months of additional funding, commencing September 2023. This will update Trial Forge Guidance 2 to consider what an economic evaluation alongside SWATs would look like and to explore the potential benefits of using an established Value of Information (VoI) analysis framework for SWATs.

A list of SWAT priorities has been developed in response to requests from the NIHR for this (See Stream 2). To develop the initial SWAT priorities list, we searched the NIHR HTA Journal database, extracted data on commonly used recruitment strategies and mapped these strategies against systematic review evidence. A working group of TFSN members met to prioritise the recruitment strategies and feedback from the wider TFSN was also sought.

An initial priority list for retention strategies was developed early on, as part of an MSc dissertation undertaken by a WG member and supervised by two collaborators. This has been submitted for publication.

A final priority list of six recruitment and five retention strategies has been agreed. This list has been circulated to the trial methodology PPI group at the University of York for feedback and is being written up to be shared with the trials community, in particular the NIHR, HRB-TMRN, Ireland and the Accelerating Clinical Trials initiative

(Canada). An accompanying manuscript outlining the work is being drafted to be submitted for publication in a peer-reviewed journal.

The priority list will be further updated as SWAT replications and further activities are completed in relation to the priorities, and as future priorities are identified.

To build on this prioritisation work further, we have successfully secured additional funding from the HRB-TMRN and TMRP to develop protocols and resources for these prioritised recruitment and retention questions. This work will start in February 2024.

2. Funding and text for grant applications

We generated guidance for applicants to use when including a SWAT in a NIHR Stage 1 or 2 grant application submission. This is publicly available via:

<https://www.nihr.ac.uk/documents/trial-forge-additional-guidance/32778>

Since this funding was awarded, the NIHR have reviewed and extended their SWAT funding across further streams (originally HTA only, now extended to EME, ES, HSDR, HTA and PHR). We have engaged with the NIHR to provide support for this extension to offer advice to applicants including a SWAT in their application.

Applicants are encouraged to contact the Trial Forge SWAT Centre (University of York) for support with the SWAT component of the application.

Given the expansion of NIHR SWAT funding, we met with NIHR colleagues to identify how York Trials Unit and the Trial Forge SWAT Centre can continue to support SWAT activity out with this funding. We remain in ongoing discussions with the NIHR as to how to operationalise and support this in the longer term. A funding proposal has been submitted which is currently under consideration with the Department of Health and Social Care.

3. Resources for trial teams to support SWATs

The initial survey conducted at the ICTMC identified gaps in knowledge on SWATs and helped to determine the content of a further survey on which resources should be prioritised for development.

A survey was developed, piloted and disseminated across stakeholders in January 2023. There were 198 responders to this survey; primarily researchers within UK academic institutions. The survey results indicated a need for resources on all aspects of SWAT – most commonly ‘The importance of SWATs’, ‘What is a SWAT’, and ‘SWAT Selection’. Cross referencing what topic and type of resource was required for each audience, we, in discussion with the WG, concluded that short animations should be produced for ‘What is a SWAT?’, ‘SWAT design’, and ‘SWAT delivery’. A company has been commissioned to produce these animations.

The WG also determined that infographics would be useful to either complement these animations, or to provide relevant information where an animation was not commissioned. The University of York Design and Print team have been commissioned to collate 10 infographics, with versions developed for both academic and lay audiences. We are currently planning our dissemination strategy for this range of resources and anticipate being able to make these publicly available by late October 2023.

The survey also provided useful information on development of future SWAT training. Most responders (77%, 107/139) said they would benefit from some training on SWATs, and 89% stated their colleagues would. The preferred format appeared to be a half-day (40%), online course (56%), covering all elements of SWATs. A practical session was suggested to be useful for some, which could be an addition. The impact of the infographics and animations produced here may increase SWAT knowledge, and thus decrease the need for a formal training course. We will re-survey in 1 years’ time, to reevaluate the need for training prior to course development.

4. SWAT Repository

Barriers to using the SWAT Repository were discussed with the TFSN to identify potential changes which could be made to improve usability and functionality.

- Categorisation of SWATs listed on the Repository

All registered SWATs have been reviewed and categorised by intervention type, and ORCCA category (where applicable).

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- Identification of SWAT status and collation of resources

The lead author of each registered SWAT was contacted to obtain relevant resources (e.g., example interventions, protocols, analysis plans) and to confirm any publications or replications of the SWAT. To date information has been obtained for 70 SWATs.

- Development of search functionality and resource storage

Due to SWAT Repository limitations, we liaised with Trial Forge to obtain and design website to hold the collated SWAT resources, and to develop a simple search strategy to assist users with identifying relevant SWATs. This is in development with Trial Forge. Going forward, we plan to further evaluate and further develop the search strategy subject to funding.

- Modification of the SWAT Repository registration process

SWAT Repository registration modifications were identified during the conception of the SWAT Network. Further changes to the registration process were identified during the course of the above work (e.g., inclusion of categorisation, resource links). A final revised version of the SWAT Repository registration has been agreed and has been provided to the Repository team for implementation.

6) Dissemination

The outputs of each Workstream will be disseminated nationally and internationally, including through the Trial Forge SWAT Centre (based at the University of York), Trial Forge, Trial Forge SWAT Network, the HRB TMRN, The Accelerating Clinical Trials Initiative in Canada, and via Twitter.

1) A peer-reviewed manuscript for Workstream 1 is in development. Preparations for dissemination of the priorities list are ongoing and likely to occur by December 2023

2) Guidance for NIHR for applicants including a SWAT in a NIHR Stage 1 or 2 grant application submission: Available via <https://www.nihr.ac.uk/documents/trial-forge-additional-guidance/32778>

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3) Animations and Infographics developed in Workstream 3 will be disseminated. Preparations are ongoing and likely to occur by end October 2023.

4) Abstracts for each of the Workstreams will be submitted for presentation at ICTMC in September 2024.

5) Findings from this programme will be presented at the UKCRC Stats Operation Group in November 2023.

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7) Acknowledgements

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8) References

1) Glasziou P and Chalmers I. Research waste is still a scandal—an essay by Paul Glasziou and Iain Chalmers. *BMJ (Clinical research ed)* 2018; 363

2) Trial Forge. Trial Forge SWAT network [Available from: https://www.trialforge.org/2021/06/swat_network/ [Accessed 15.09.2023]

3) Treweek, S., Bevan, S., Bower, P. *et al.* Trial Forge Guidance 2: how to decide if a further Study Within A Trial (SWAT) is needed. *Trials* **21**, 33 (2020). <https://doi.org/10.1186/s13063-019-3980-5>

9) Appendices

None applicable

10) Conflict of interest declaration

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The remaining authors have no conflict of interests to declare.