**Barriers and enablers to the implementation of a complex intervention for acute kidney injury: a qualitative evaluation of the Tackling AKI study from the perspective of the implementing teams.**

**Introduction:** Tackling AKI (TAKI) is a multi-centre, pragmatic, stepped-wedge cluster randomised trial (SWCRT) that aimed to test the organisational-wide introduction of a complex intervention to reduce harm associated with acute kidney injury (AKI). The intervention consisted of AKI alerts, a care bundle and an educational program. Here, we present a subset of the results from a nested qualitative study of how the package of AKI interventions was introduced across each hospital to identify enablers and barriers to its adoption as experienced by the multi-disciplinary project (implementation) team.

**Methods:** The TAKI intervention was introduced across five UK hospitals selected for diversity (teaching and district general hospitals, with and without onsite renal services). The intervention was introduced in each site sequentially at fixed three month periods until all five hospitals were ultimately exposed to the intervention, according to the SWCRT design; supported by change methodology techniques before and after the introduction of the intervention at each site, as well as local tailoring of the intervention to suit the context.

The qualitative evaluation took a ‘realist evaluation’ perspective addressing four areas of evaluation: 1) contextual characteristics of hospitals which may facilitate or impede implementation; 2) detailed descriptions of the package of AKI interventions; 3) stakeholder perceptions of the barriers and enablers to implementation; and 4) each hospital’s stakeholders’ proposed theory of change. A case-study approach using multiple qualitative methods of data collection was adopted. Framework analysis was used to identify common themes around barriers and enablers from stakeholders in the multi-disciplinary project teams. Site-specific data is not reported in order to maintain anonymity.

**Results:** A total of 28 interviews with key project team members across the five sites were conducted. Four key themes with 65 subthemes around barriers (B) and enablers (E) were identified: (i) practical and contextual factors (e.g. team capacity (E), busy care marketplace (B)); (ii) the TAKI team (e.g. multidisciplinary project team(E), team management(B)); (iii) the design and development of the implementation approach (e.g. persistent implementation approach (E), package characteristics (B)); and (iv) hospital staff knowledge, attitudes, behaviours and support (e.g. nurse attitude and presence (E), senior staff role models (B).

**Conclusions:** This study highlights the complex interplay of local factors which may facilitate or impede hospital-wide implementation of AKI interventions including project team capacity, composition and management, how many other tasks and tools already exist for use in the care setting, the design and implementation approach of a new intervention and existing frontline staff attitudes and behaviours. This underlines the importance of an evaluation approach which documents the local factors (both changeable and fixed) and captures learning during implementation, providing timely opportunities for development and improvement. Harnessing these evaluation insights in the design and development of future AKI initiatives is recommended, e.g. tailoring of the intervention to fit local context, a visible and effective project team, and co-designing interventions with stakeholders that are compatible with the heavy clinical workload of frontline NHS staff.