



From concept to creation and critique - developing an app for patient education

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How can we improve our service?

In early 2015, Occupational Therapists from Worcestershire Health & Care NHS Trust's thriving & innovative Community Stroke Service wanted to improve the quality of information they were providing to stroke survivors with cognitive or language difficulties. The team realised that understanding cognitive changes was a top priority for service users, carers and all health care professionals [1] Existing literature [2] was too busy, too detailed and didn't lend itself to being customised for people with cognitive or language difficulties.

Concept

Recognising that many of their clients found apps easy & engaging, the team set out to create their own app to solve the information problem. The app needed to be simple to follow, uncluttered, and enable people with cognitive difficulties to easily access the information that was relevant to them

But how do you build an app??



The team didn't know

Five Occupational Therapists wrote their vision and ideas of content for the app on flipchart paper during a team meeting. It was messy. It was unrefined and did not feel very professional. We hurt our knees. We used lots of paper. We had no idea how this would become an app, but we were optimists .

These are the errors made along the way

These are suggestions for success



Creation

Ideas were structured using the cognitive hierarchy based on work by Warren & Grieve [3] Each team member researched an area to ensure that information included was up to date and reflected current clinical practice. Each section was then written to contain an overview of the cognitive skill in aphasia-friendly language. Some frequently issued general advice was also included, to encourage users to regularly refer to the app

Don't leave client feedback until you have finished the work!

Service users should have been formally consulted at this stage - co-production is key



Speech & Language Therapy colleagues supported the development of the language pages, whilst nursing colleagues contributed to advice around fatigue. All content reflected the advice given by the team routinely and as such the content was appraised by service users. Once the team was happy with the content, it was handed over to the Trust's communications department. It was assumed that was the end of our role and we looked forward to seeing the app in all its glory...

Working through the comms team added an additional layer of bureaucracy

Always liaise directly with the software company!

The trust communications department liaised with a recognised app provider to build the pages into a useable app

Critique



Assuming that the communications team would be able to follow the plans, select appropriate images, layouts and fonts and keep the app simple to use was naive. LOTS of time passed waiting for the build process to be completed. At one point the entire contents were lost by the software company - fortunately everything was backed up by the team. Staff left the team and new members joined. Whilst this was frustrating, it was treated as a positive opportunity for peer review.

You can never save too many back-ups!

The areas the therapists wanted to cover were not the areas the clients wanted help with

Understanding thinking and language skills after a stroke

Below are some of the cognitive skills we use in our day to day activities. Information regarding some of these cognitive skills is provided to help understand some of the difficulties seen following a stroke. Useful tips are then provided to help manage these needs within each area.

Sensory skills	Praxis/Apraxia
Attention	Executive Skills
Processing Information	Factors that can influence our thinking
Memory	
Language	

Finally, in December 2018, the app was live (but only on an Android device). Only now could we start the process of trialling it with clients to see how the app format compared with the verbal and paper-based options previously used

Service user feedback included:

- App not opening fully
- Aim at either stroke survivor or carer
- Include secondary prevention information
- Include specific section on fatigue

Try taking a bottom-up approach. Review regularly

The app is currently "resting" awaiting staffing issues to be resolved before moving on to a formal review process

Top Tips from the team for developing an app:

- Do have a go - you will learn so much from the process
- Always liaise directly with the software company!
- Analyse feedback regularly - set time aside every month
- Follow a project plan: [4]
- Plan → Do → Study → Act

References: [1] Pollock, A. et al. (2014) 'Top 10 Research Priorities Relating to Life after Stroke - Consensus from Stroke Survivors, Caregivers, and Health Professionals', International Journal of Stroke. Wiley/Blackwell (10.1111), 9(3), pp. 313-320 [2] Stroke Association (2018) 'A complete guide to cognitive problems after stroke' [3] Harrison Associates (2009) Cognitive Rehabilitation Course Handbook [4] ACT Academy (2018) 'Plan, Do, Study, Act (PDSA) cycles and the model for improvement' available from https://improvement.ohio-state.edu/resources/ohio-cycle/

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