

EVALUATION REPORT

Trial of the Activity **Performance Measure (APM)** **in Occupational Therapy in** **Stroke Early Supported** **Discharge service**

Introduction

This is a report on the trial of the Activity Performance Measure (APM) outcome measure by occupational therapists in an NHS Stroke Early Supported Discharge (ESD) team. The ESD team provides a time-limited (6 week) service to people discharged from hospital to the community and one of its primary aims is to promote recovery while reducing hospital inpatient length of stay.

The APM is an innovative measure of ADL performance and participation (defined as involvement in life situations). The focus of the report is on the outcomes achieved by service users during the OT ESD admission as identified by the APM.

The response of the ESD OTs to trialling the APM was positive – they intend to keep using it, and are hopeful that the results can provide supporting evidence for a less intensive follow-up service to their current six-week model.

Background and evaluation design

In the summer of 2016, OTs the ESD team volunteered to trial the APM. Like many therapists, they are keen to find new and better ways of demonstrating the value of their service in these increasingly challenging times. The aim was to evaluate the results achieved by the APM in terms of capturing clinically significant change during the OT admission. This evaluation follows on from a similar process in an NHS Integrated Community Teams.

The OTs were given one hour's training in how to collect the information required and score the APM, and deidentified results were sent to Phil Murgatroyd (developer of the APM) who produced this report. No changes in treatment were received by the SUs as a result of the trial.

In total data on 13 SUs has been collected and processed in this report. These represent consecutive referrals of people who completed OT in the ESD and therefore this sample can be considered to be representative of the work completed by ESD OT.

See Appendix 1 for a note on the statistics used.

Brief description of the Activity Performance Measure (APM)

The APM consists of 28 ADL activity items, and covers how a person performs in terms of mobility, community mobility, personal care, domestic tasks and community and leisure activities. Each item, if relevant to the service user's lifestyle, is scored between 4 (no limitation) and 0 (total limitation). The scoring is based on concrete aspects of activity limitation like independence/preferred lifestyle, the use of adaptive equipment or techniques, receiving supervision and assistance from carers, or stopping participating in an activity altogether.

The 28 items scores are combined to produce 2 summary scores of Activity Performance and Participation, and also can be used to produce more detail about how a person's ADL performance and participation change during an episode of care.

Results - averages for sample

Activity Summary score

(this summary score indicates the amount of limitation in a person's overall activity performance, with 100 indicating no impairment, 15 indicating full nursing care).

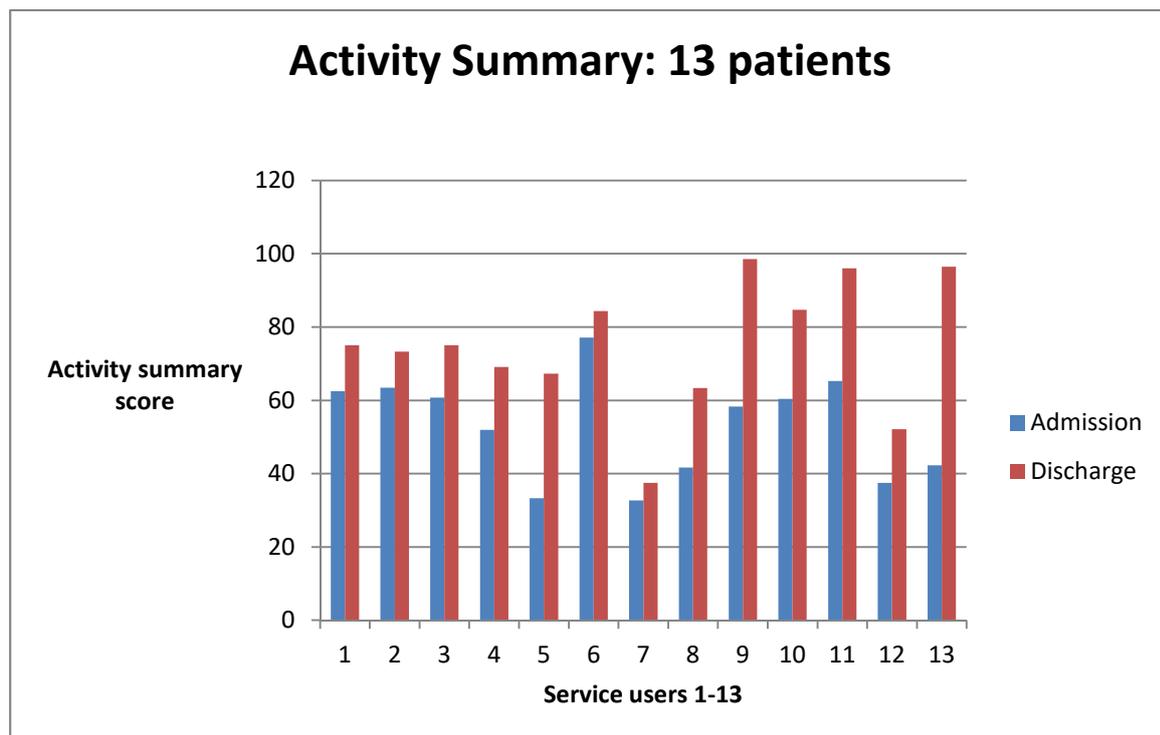
Admission: 52.9

Discharge: 74.8

Average Change: + 21.9 ($p \leq 0.05$)

What this means:

The sample of 13 service users achieved a high average reduction in limitation in ADL performance during the admission - the fact that this was statistically significant with so few participants gives more confidence that this is a real change rather than random variation. All 13 service users saw a reduction in ADL limitation during the admission (see chart below).



Participation Summary

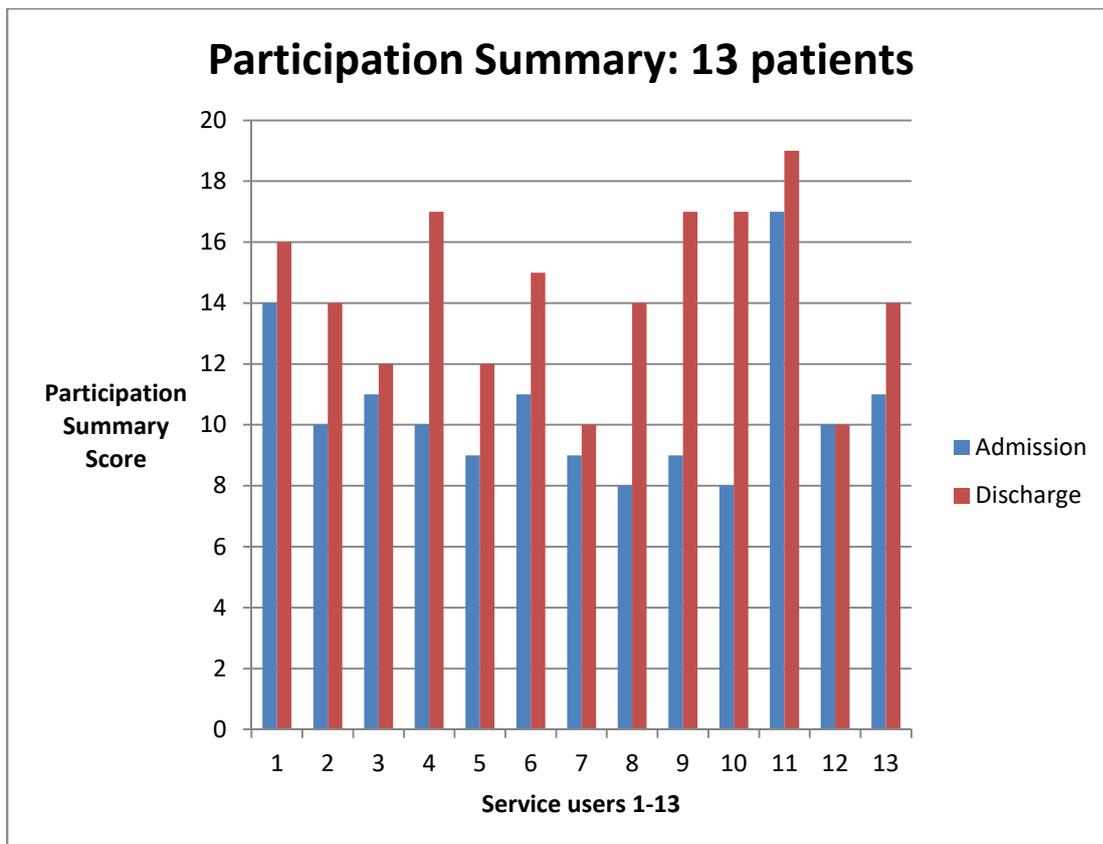
This score is the number of activities, in which a person is involved in. The maximum would be 28 (exceptionally high number of activities) and the minimum would be around 5 (full nursing care only).

Admission: 10.5

Discharge: 14.4

Average change: + 3.9 ($p \leq 0.05$)

What this means: On average, service users were involved in nearly 4 more activities at discharge each, compared with their situation at admission. Twelve of the 13 patients participated in more activities at the end of the episode of OT, compared with admission. Some of these changes were very high e.g. patients 5 (7 new activities) and 9 (6 new activities) - in other words a radically expanded lifestyle returning close to pre-morbid.



More detail on the improvement achieved during the admission

The APM has the potential to produce additional details about how people's lives change during an occupational therapy admission.

Amount of change

At discharge, the 13 service users were participating in a total of 187 activities combined. They had made an improvement in 112 of these 187 activities, in other words a remarkable 60% of activities were performed with less limitation after the episode of OT.

Return to independence or preferred lifestyle

The 13 service users had regained independence or returned to their preferred lifestyle in 58 activities at discharge compared to their performance at admission (31% of total activities performed at discharge).

No longer received assistance or supervision

People ceased having physical assistance or supervision from carers in 41 activities (23% of activities performed at discharge).

Equipment change

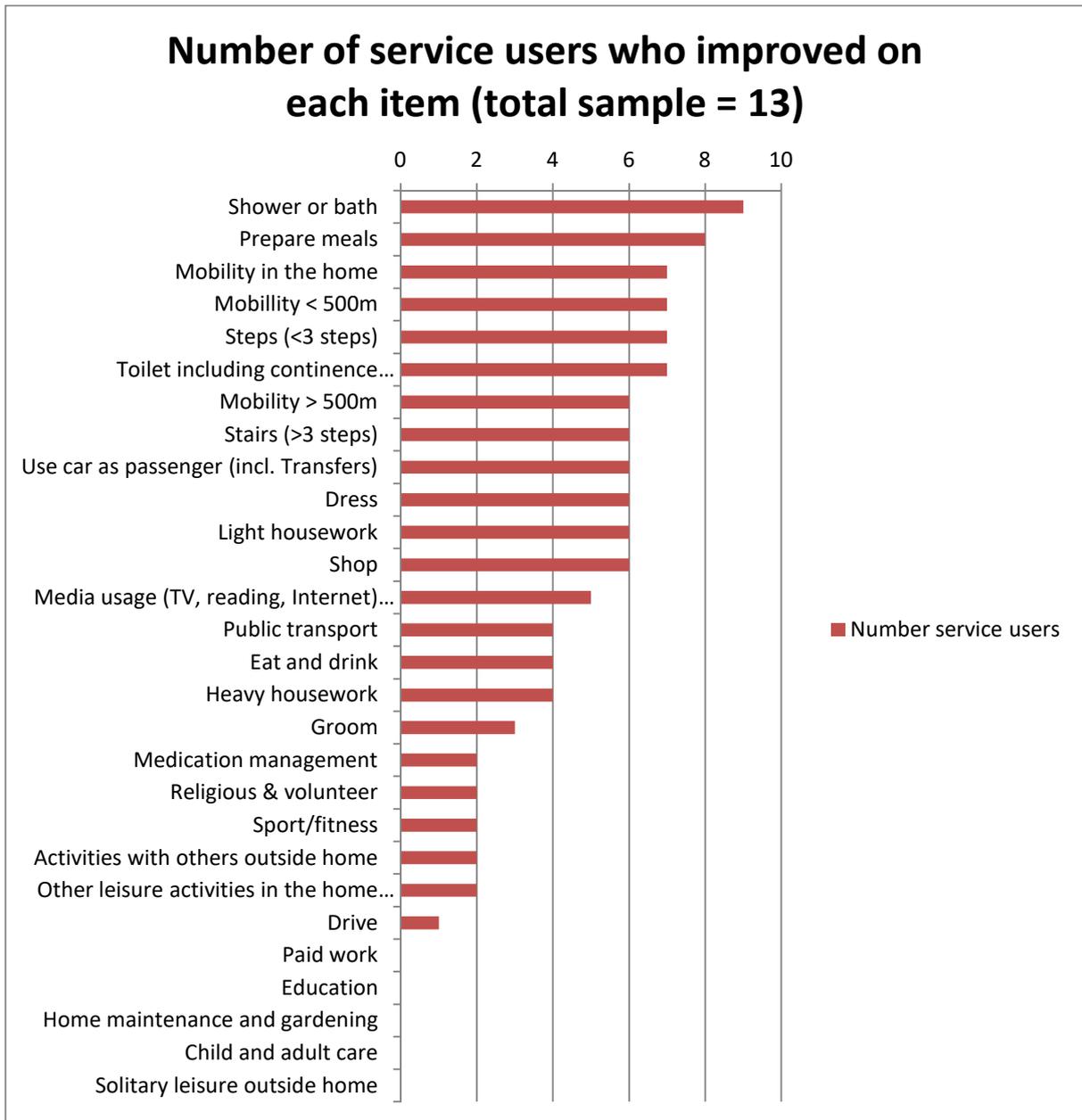
On average, each service user had 1.9 pieces of equipment changed during the OT admission.

Return to participation

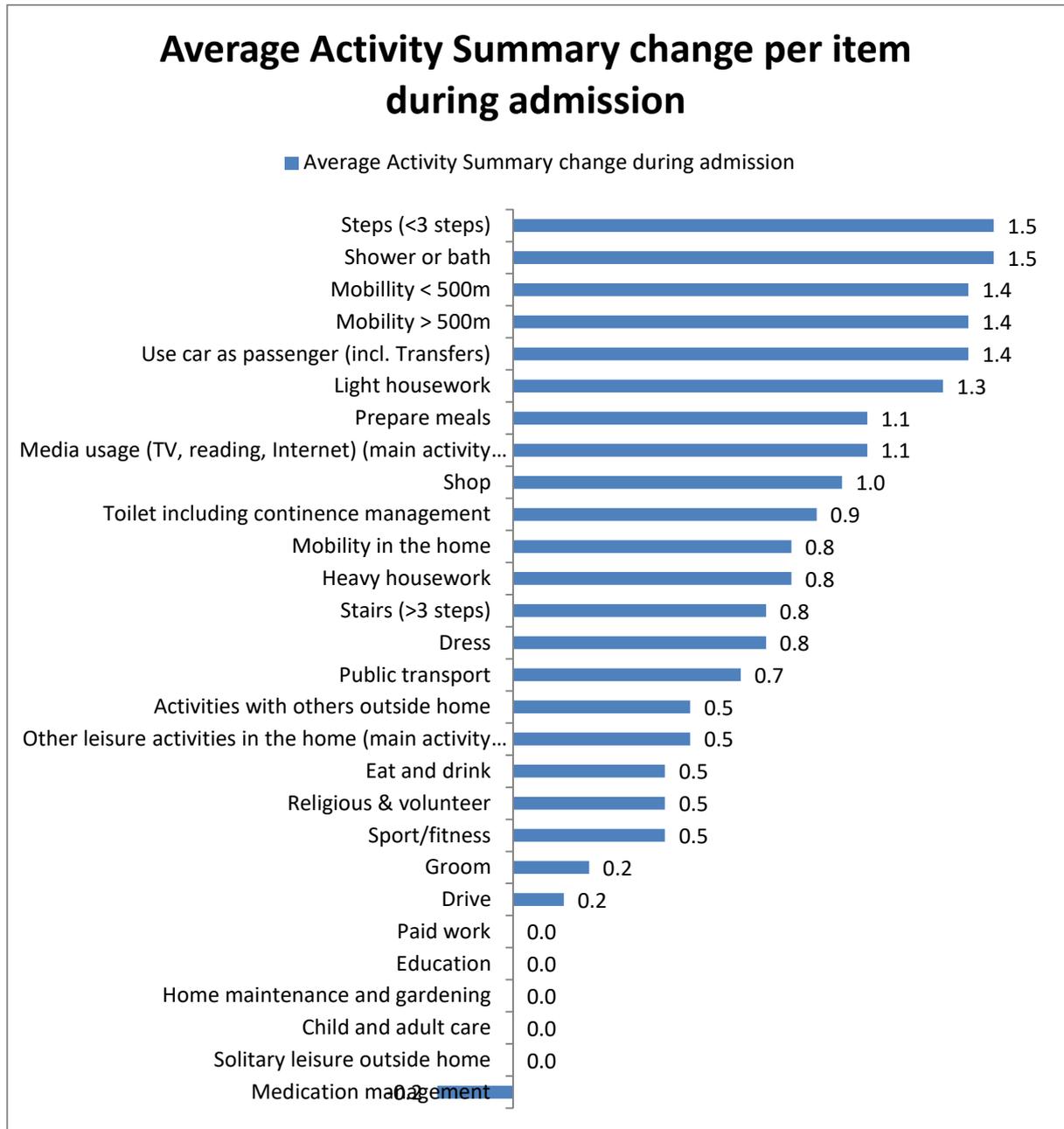
At discharge, people had resumed in participation in 54 activities (possibly in a modified way or with support), which they had not been participating in when they were admitted to ICT OT) (approx. 27% of activities performed at discharge).

Areas of change during the admission

The 13 ESD service users in the study improved across a large range of activity items. The chart below shows how many service users improved their performance in each activity category. The most frequent area of change was showering/bathing, where 9 of the 13 service users improved their performance. The chart below shows the areas of improvement starting with the most frequent at the top.



Another way of looking at the improvement made during the admission is the average size of improvement per activity category. Here again, showering/bathing saw the biggest average change together with going up and down steps. The ranking of items in terms of amount of change is shown in the chart below:



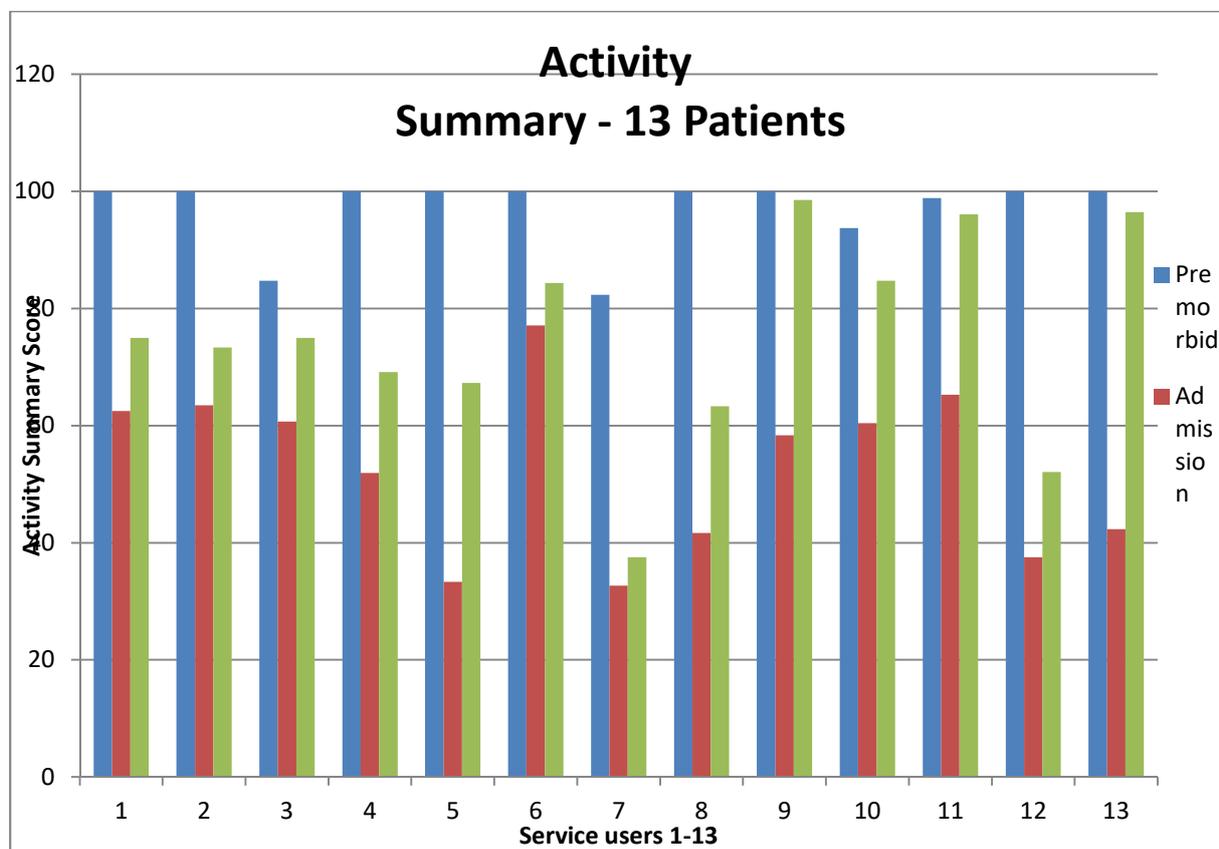
Comparing discharge with premorbid performance and participation

The APM is designed to help contextualise a person’s performance by comparing it with premorbid performance, when there has been a clear deterioration (as is the case with stroke). This also allows rehabilitation to be viewed individually in the light of how close to premorbid levels people were at the time of discharge. For the ESD service, the average figures are given below.

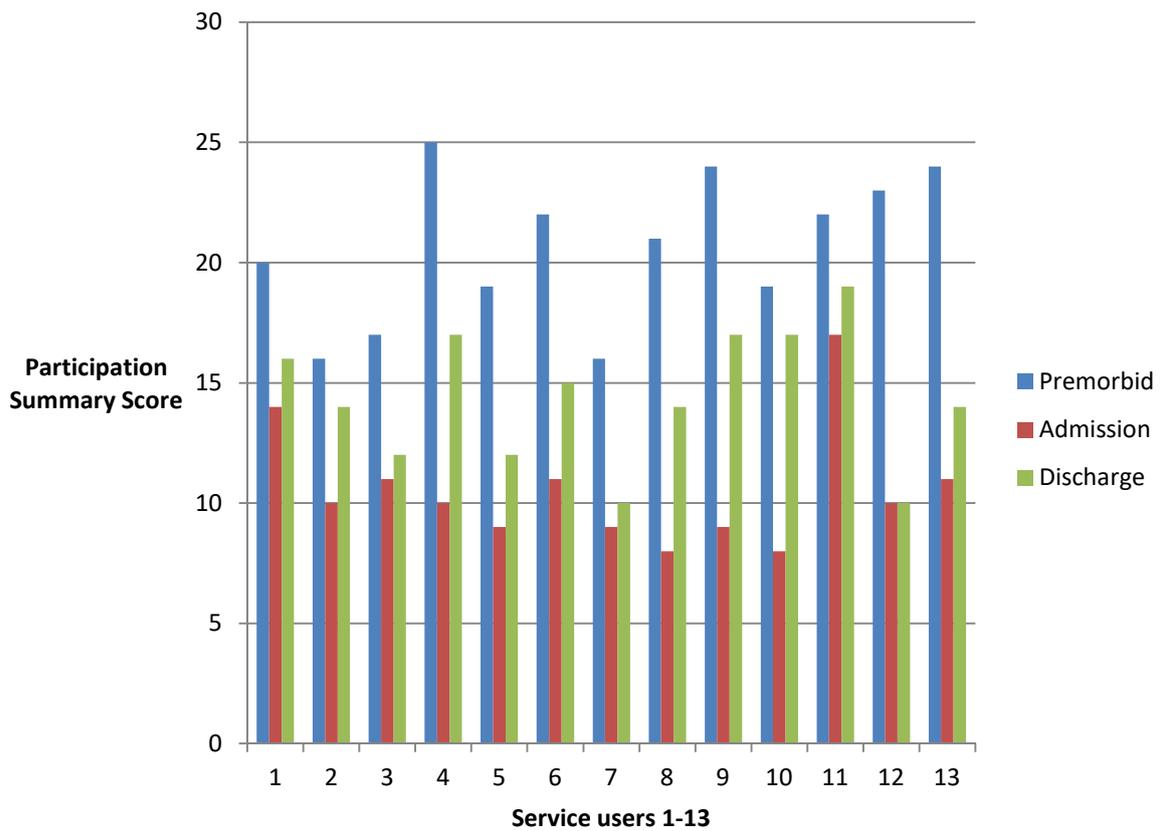
Activity Summary averages		
Premorbid	Admission	Discharge
96.9	52.9	74.8

Participation Summary averages		
Premorbid	Admission	Discharge
20.6	10.5	14.4

These averages conceal quite different levels of recovery towards premorbid levels, as can be seen in the following charts. Some of these Sus have returned to very close to premorbid levels (e.g. 9, 11 or 13) in terms of the amount of limitation during the ESD admission, while others made more modest gains. However, the trade off for this seemed to have often been reducing the range of activities people participated in.

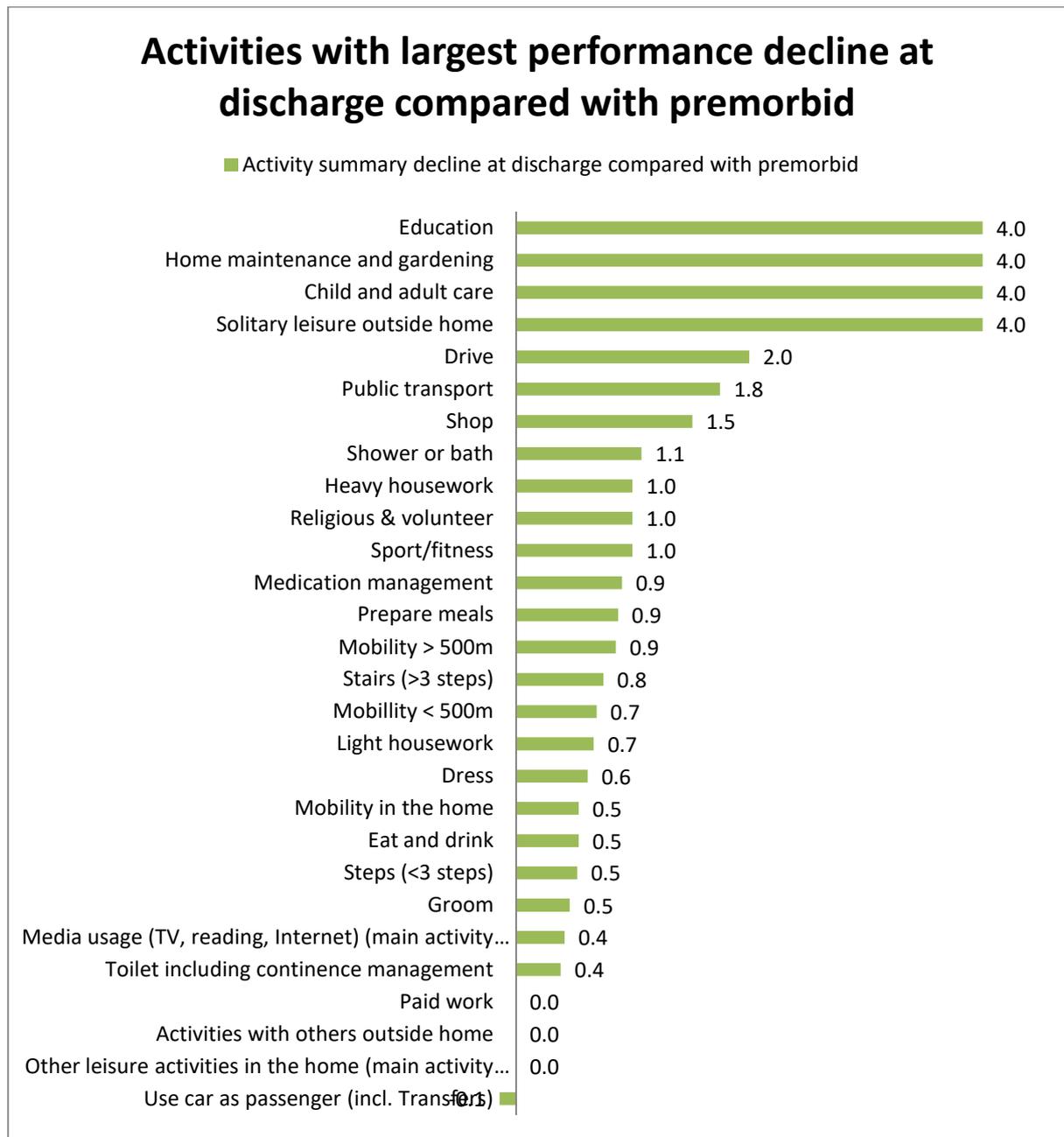


Participation Summary - 13 Patients



Areas of biggest loss in performance at discharge, compared with premorbid

The chart below shows the areas of biggest loss of performance at discharge from the ESD service, compared with premorbid. For example the sample showed no return to education activities, home maintenance and child care. On the other hand essential functional activities generally had lower losses of performance at discharge, compared with premorbid. These functional activities are generally priority rehabilitation goals immediately after illness. The areas of low improvement seem to be strong evidence of outstanding rehabilitation needs continuing after the 6-week ESD admission, as would be expected given the lengthy recovery periods following stroke. (NB these data needed to be treated with caution given the size of the sample).



Summary

The service users included in this trial of the APM showed clear gains during the occupational therapy admission in both reducing the amount of limitation in their activity performance, and also increasing the range of activities they were involved in.

Statistically, these changes were significant and the amount of change achieved was high.

The response of the ESD OTs to trialling the APM was positive – they intend to keep using it, and are hopeful that the results can provide supporting evidence for setting up a less intensive follow-up service to their current six-week model.

The changes achieved with OT were varied - for example in some activities service users returned to independence, in others the need for carer input was ceased, while in other cases they returned to involvement in a valued parts of their lifestyle but in a modified way. People improved in a range of important functional tasks and mobility, but also in more complex and individual community and leisure tasks important for quality of life, autonomy and choice in a broader sense.

In general, it appeared that these service users made bigger gains in reducing the amount of limitation in the activities they were involved in, and made somewhat smaller gains in returning to previous participation patterns. Further details about the areas where people had not returned to premorbid activities are given above and support the idea that these stroke survivors have ongoing rehabilitation needs beyond a 6-week period, as would be expected.

There are of course limitations in a study of this nature, in particular the size of the sample (although the fact that these service users are consecutive referrals means the information is more representative of the true population figures). However, the potential for demonstrating more about the progress achieved by service users receiving occupational therapy in the Stroke ESD setting appears clear.

It is also interesting to note that as would be expected these stroke service users achieved bigger gains in both performance and participation than the service users in the integrated community team trial (especially in the slow-stream service). No doubt that this is partly connected with the fact that, to judge by the premorbid performance and participation scores, many of the service users referred to the ESD team appear to have been relatively fit and healthy prior to the stroke. However, the fact that a significant proportion of them remained below premorbid levels at the end of the 6-week rehabilitation period suggests they have clear ongoing rehabilitation needs and potential.

Given the high sensitivity to change seen in the APM, routine collection of APM scores for all OT referrals appears unnecessary to report more definitively on the ESD service. Instead a truly representative sample of 50 or so referrals would produce reliable information. However, it would be necessary to ensure that resources are available for training, monitoring data quality, processing the data and turning it into a meaningful report.

Author: Phil Murgatroyd, March 2017

Appendix 1 - Statistical note

Statistical significance was tested using the Wilcoxon test.

For both the Activity and Participation summaries, the difference in the results between admission and discharge were statistically significant at a level of $p < 0.05$. In non-technical terms, this means: **“Statistically significant results are those that are interpreted to not occur purely by chance and therefor have other underlying causes for their occurrence.”**

In terms of the size of the change was seen in the Activity and Participation summaries between admission and discharge, the effect size was high (Robust nonpooled Cohen’s D of over 0.7). This means that not only was there a non-random change between admission and discharge, but furthermore the amount of change was high.