

# Assessment of Post Traumatic Amnesia (PTA) for People with Aphasia (PWA): A Case study

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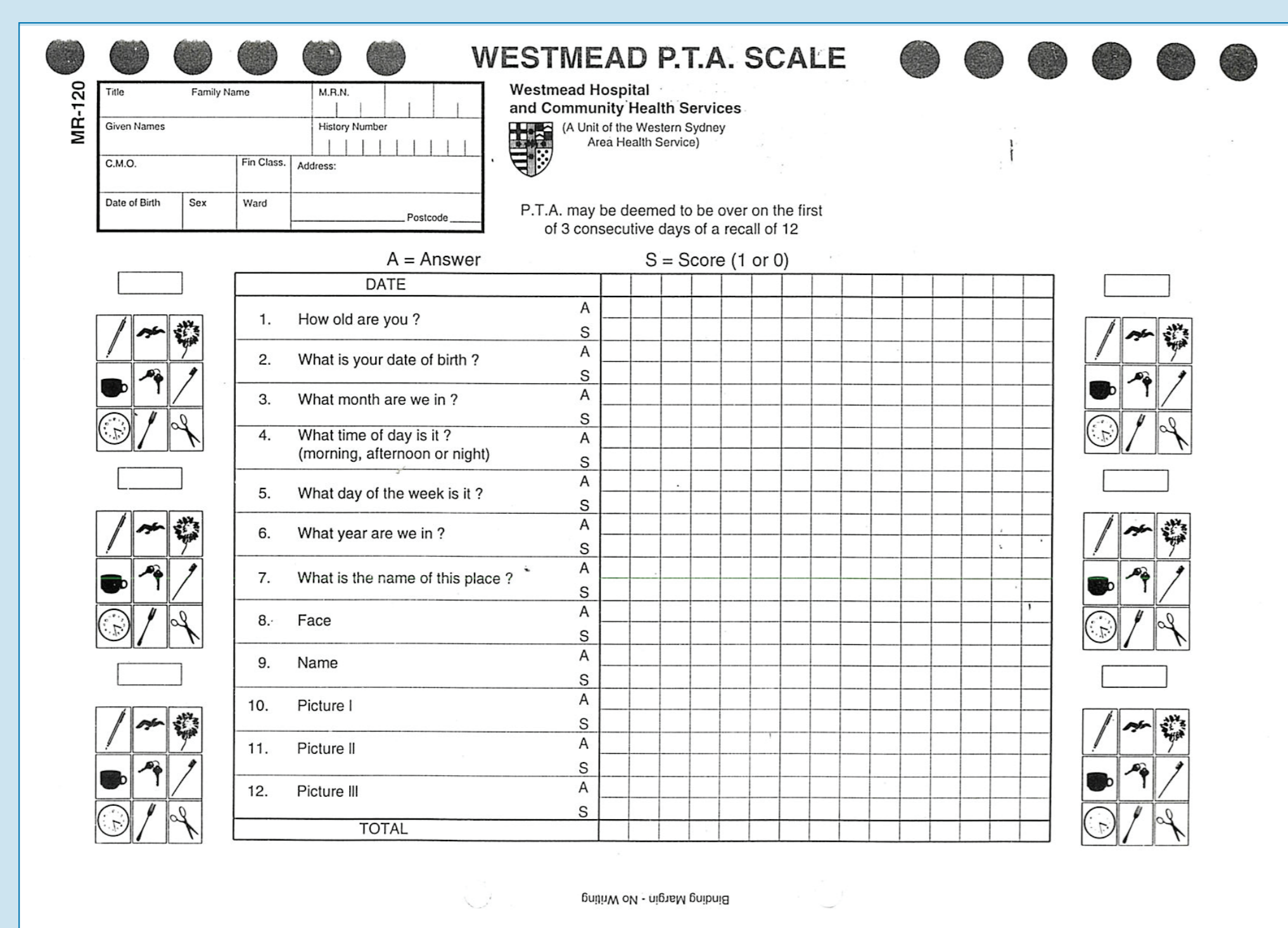
## Introduction

Following a traumatic brain injury, posttraumatic amnesia (PTA) duration is an important measure of the level of severity. This measure assists in predicting different aspects of cognitive recovery, potential outcome as well as being an important indicator of the readiness for active therapy. As the duration of PTA plays a critical role for a range of clinical, medico-legal and research purposes, the ability to collect data for all clients is paramount. It is not surprising therefore that multiple measures of PTA have been developed, including modifications of some of these measures to allow assessment of people with aphasia (PWA). The Galveston Orientation and Amnesia Test (GOAT) (Levin, O'Donnell & Grossman, 1979) is the most commonly used assessment worldwide. A multi-choice modification of the GOAT (AGOAT) was created with positive outcomes for people with aphasia (PWA) (Jain, Layton & Murray., 2000).

In an Australian context, The Westmead Post-Traumatic Amnesia Scale (WPTAS) is used most widely and is a standardised assessment procedure in acute neurology and rehabilitation units (Shores et al., 1986; Marosszeczy et al., 1998)(see Picture 1). To date, no standardized assessment protocol or guidelines exists for the WPTAS to guide the management of PWA or to assist in making accurate determinations of duration. The use of behavioural assessment measures to complement memory-based PTA scores has also received attention in the literature (Weir et al., 2006; Sherer, et al., 2005).

This case study examines the application of a modified multi-choice version of the WPTAS to assess a PWA following a severe traumatic brain injury.

Picture 1: Westmead P.T.A Scale



The image shows a form titled 'WESTMEAD P.T.A. SCALE'. It includes a header with patient information fields (Name, Family Name, M.A.N., Date of Birth, Sex, Ward, Phone) and a note: 'P.T.A. may be deemed to be over on the first of 3 consecutive days of a total of 12'. Below this is a grid with 12 rows of questions and 12 columns for recording scores (A for Answer, S for Score). The questions are: 1. How old are you?, 2. What is your date of birth?, 3. What month are we in?, 4. What time of day is it? (morning, afternoon or night), 5. What day of the week is it?, 6. What year are we in?, 7. What is the name of this place?, 8. Face, 9. Name, 10. Picture I, 11. Picture II, 12. Picture III. A 'TOTAL' row is at the bottom.

## Patient Description

JM is an 80 year old woman who was involved in a pedestrian vs. car accident on the 15th December 2011. She sustained a loss of consciousness and her Glasgow Coma Scale was initially 14/15 at the scene reducing to 12/15. She was admitted to Royal Melbourne Hospital where CT brain scan indicated subarachnoid haemorrhage, a small left subdural haemorrhage and multiple intra-cerebral haemorrhages in her right parafalcine area. She also sustained a left intra-cerebral haemorrhage. Further injuries included fracture to the right parietal bone extending to the temporal bone. Fracture to right zygoma, several broken teeth and a lip laceration. She had a scalp laceration, which was sutured.

JM was transferred to the Acquired Brain Injury Unit at Epworth Rehabilitation Camberwell 13 days following her injury (28th of December 2011).

On admission she was noted to have a severe receptive and expressive dysphasia with significant neologisms and anomia. She was unable to perform repetition, nor read or write. She required assistance with personal care and ambulation and she was on a modified diet. As a further complication she had a urinary tract infection, which was treated with success.

Other relevant information, JM was born in Japan and had lived in Australia for 40 years.

She spoke English with her family. Prior to her injury JM was living independently and enjoyed activities including playing golf, photography, writing a daily blog and staying in touch with family and friends (worldwide via electronic methods) in English.

## Method

The modified WPTAS was developed as a series of 9 multiple choice questions with three potential answers. The picture recall was presented as standard. Of the two alternate options provided, one was proximate to and the other distant from the correct answer (see Picture 2). Questions and answers were typed, printed and presented individually. Questions were asked in the set WPTAS sequence (Question 1 to 12). The three multi-choice alternatives for each question were presented in a random order for each question.

Once JM was observed to comprehend the questions and understand the need to choose a response, the modified multiple-choice WPTAS assessment was completed daily with the Speech Pathologist. Clinical observations included monitoring of her behaviour, attention, engagement, sleep-wake cycle and mood. This information was collected by the multi-disciplinary team across the day and night and overseen by the Neuropsychologist.

**Acknowledgement:** Thank you to Dr Michelle Morandin, Clinical Neuropsychologist for her support with this client and presentation.

## Results

The modified multi-choice WPTAS was shown to be a more sensitive data collection method for JM's orientation and memory skills and assisted determine the resolution of her amnesia. After receiving a score of 12/12 on the 24th January 2011, in conjunction with behavioural observations, JM was deemed out of PTA by the Neuropsychologist in consultation with the multi-disciplinary team. Tate et al., (2006) have suggested that patients who are in PTA for greater than 4 weeks have likely emerged from PTA when they first score 12/12 on the WPTAS, and this criterion can replace the traditional criterion of three consecutive days. Concurrent to her scoring 12/12 on the modified WPTAS, JM was noted to have an appropriate level of engagement in tasks, improved attention, appeared more 'settled' (indicating improved behaviour) and was more 'bright and reactive' in mood. She maintained a normal sleep-wake cycle and was further independent with all self-care. Total length of PTA was estimated to be approximately 41 days. See Graph 1.

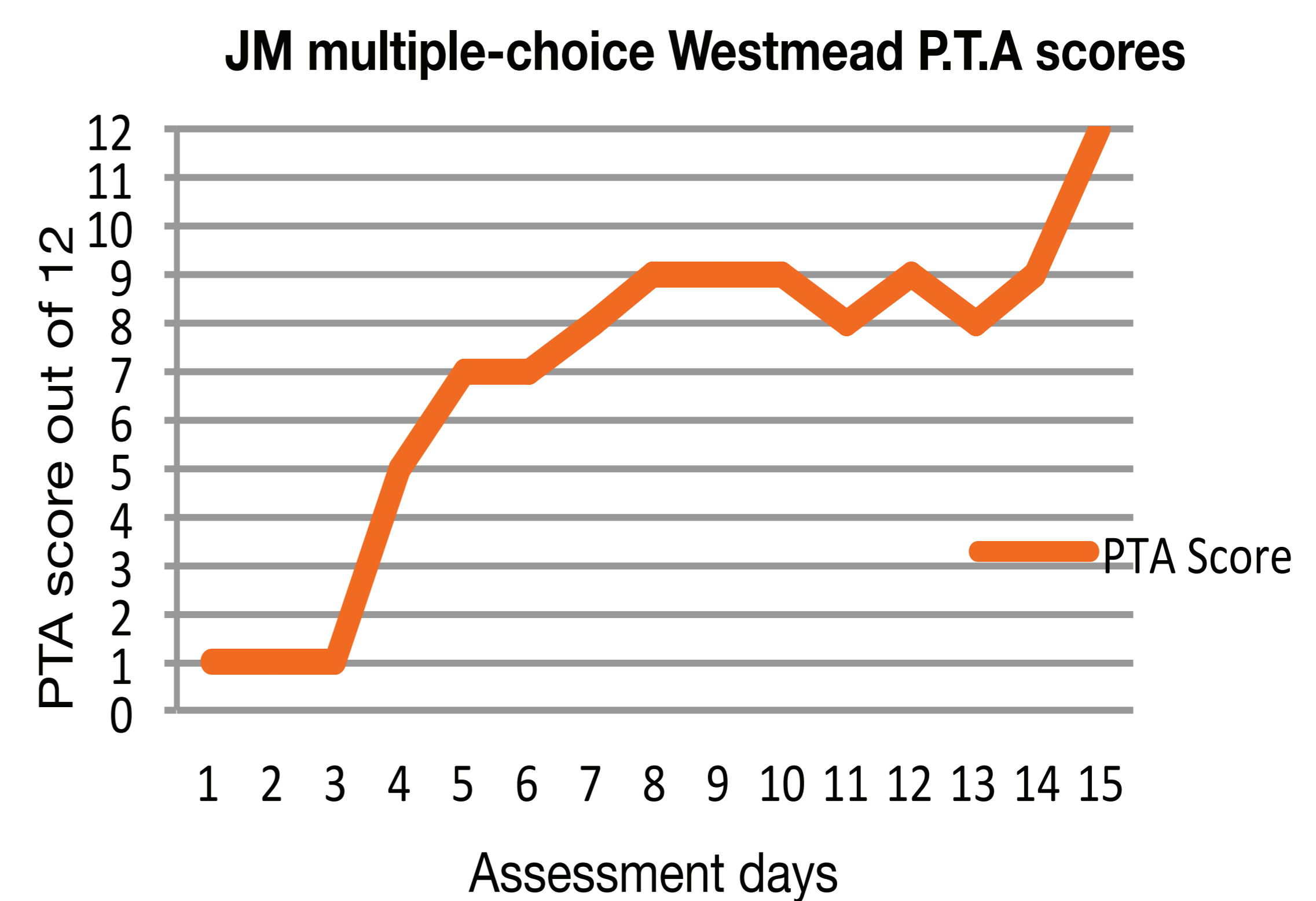
Picture 2: Examples of multiple-choice questions

| How old are you? | What is your date of birth? | What month are we in? | What time of the day is it? |
|------------------|-----------------------------|-----------------------|-----------------------------|
| 79 years         | 15/03/1931                  | September             | Morning                     |
| 80 years         | 16/03/1930                  | October               | Afternoon                   |
| 89 years         | 15/03/1932                  | March                 | Night-time                  |

| What day of the week is it? | What year are we in? | What is the name of this place?      | What is my name? |
|-----------------------------|----------------------|--------------------------------------|------------------|
| Monday                      | 2020                 | Royal Melbourne Hospital             | Alanna           |
| Tuesday                     | 2011                 | Epworth Rehabilitation Camberwell    | Amanda           |
| Saturday                    | 2012                 | Royal Talbot Rehabilitation Hospital | Alison           |

Graph 1: JM emergence from PTA



## Discussion

This case study aimed to document the assessment profile of an individual with a severe dysphasia using a multi-choice version when the existing WPTAS was not appropriate. It may be useful to use a modified multi-choice version of the WPTAS scale in conjunction with behavioural observations as an alternative approach to assessing amnesia for PWA. Given the significant impact JM's severe receptive and expressive aphasia had on testing, including behavioural observations was paramount. Further application of this modified assessment is indicated to assess the validity of this method with other PWA who have suffered a TBI.

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