



The use of a wearable camera, SenseCam, as a pictorial diary to improve autobiographical memory in a patient with severe memory impairment

**Emma Berry, Georgina Browne, Narinder Kapur, Steve Hodges, Gavin Smyth, Lyndsay Williams, Martin Conway, Ken Wood**

# SenseCam: a photographic diary

**Total recall**  
The camera that records your whole life

**Size comparison**

**Possible uses**

- Families could share images of each other's day and create a family archive
- SenseCam could benefit the forgetful, offering reminders of people and places
- The device would provide an instant record of many crimes and accidents

Sensors respond to changes in light or movement by taking pictures of the wearer's surroundings, gathering 170 images an hour

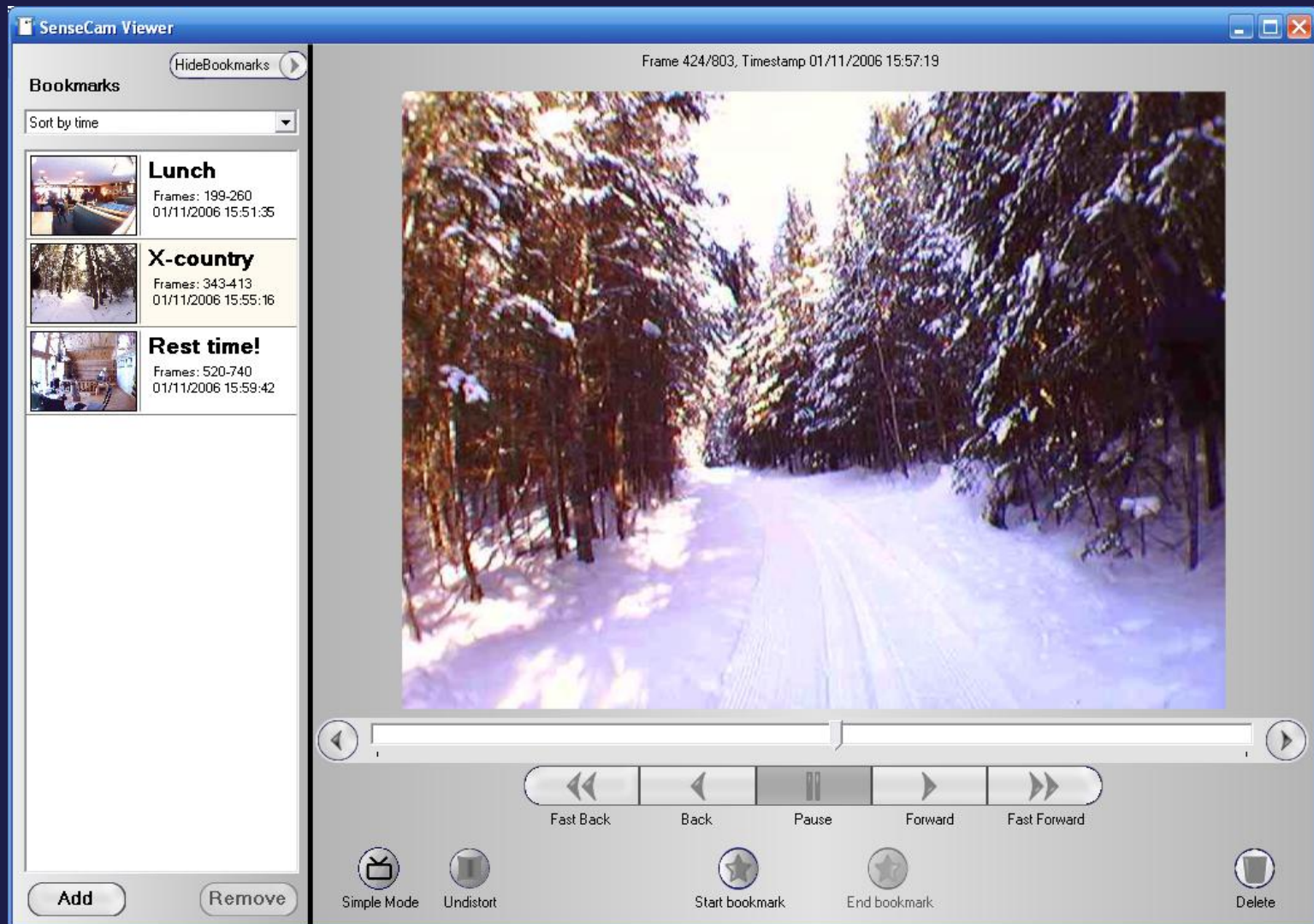
Clare Harrison Collins

2.09pm 2.15pm 2.18pm 2.21pm

## Human 'black box' to log your daily life



# Easy to use software...



# A SenseCam movie





# Improving memory with SenseCam

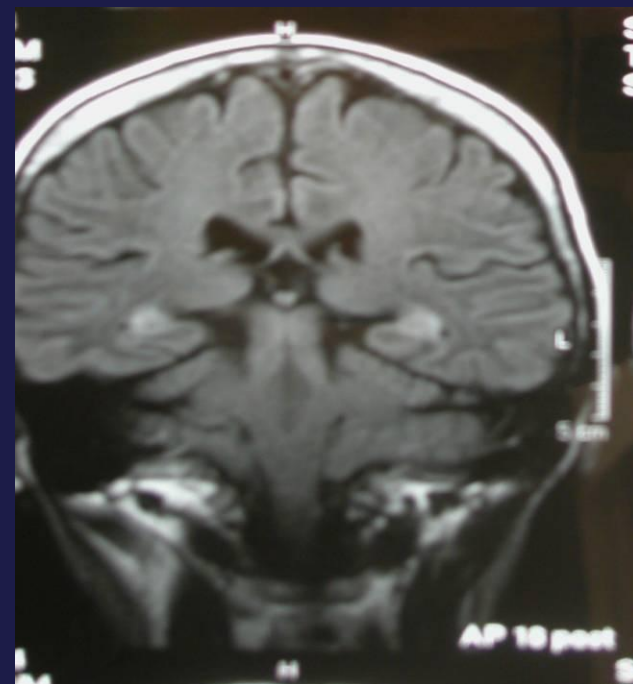
- Most memory aids serve prospective memory



- Our aim was to improve recent autobiographical memory

# Using SenseCam with a patient with amnesia

- Cambridge Memory Clinic, Addenbrooke's Hospital
- 63 years old, well-educated, married woman 'Mrs B'
- Diagnosed with limbic encephalitis in 2002
- Now has severe memory impairment
  - usually no memory a few days after an event



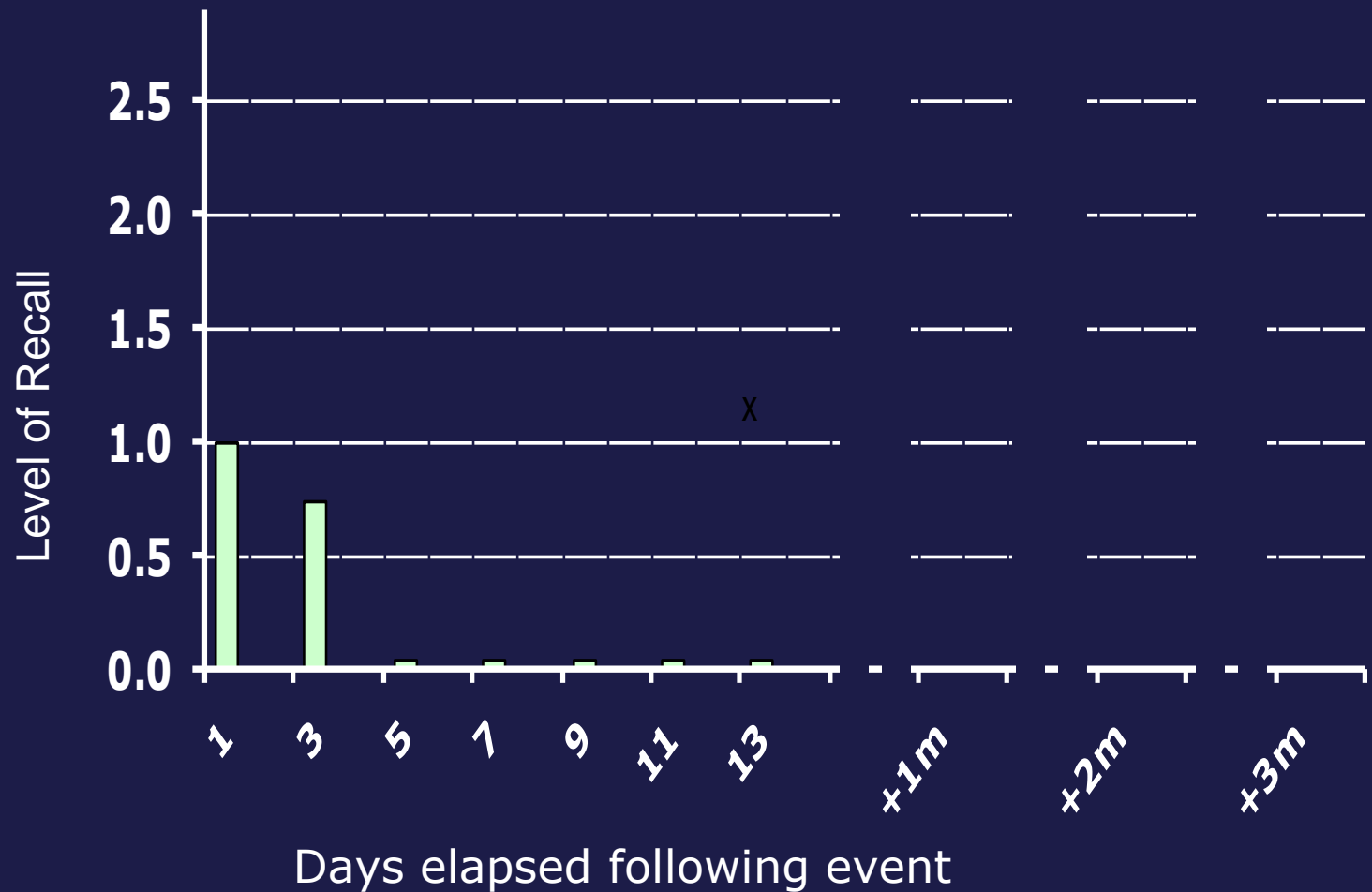
# SenseCam clinical trials: study protocol

- Experimental condition (N=9)  
SenseCam used to record significant days
- Control condition (N=3)  
Written diary used to record significant days
- Baseline condition (N=2)  
No memory aid to help recall of significant days
- Information reviewed every 2 days for 2 weeks
- Memory evaluated before each review

*In this way we could assess whether the patient's memory of an event improved with successive viewings of the event*

# Results

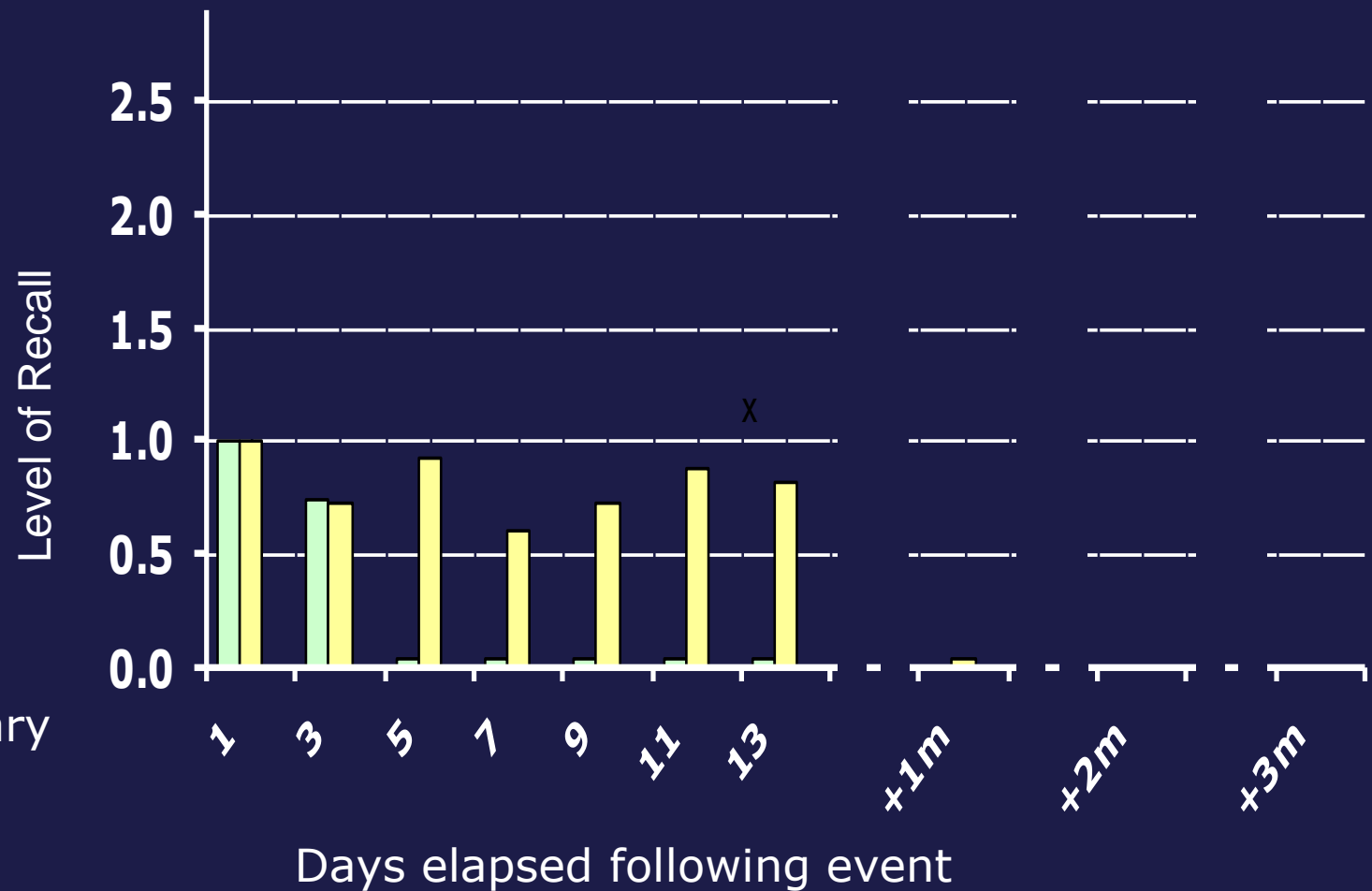
## Memory of an event over time





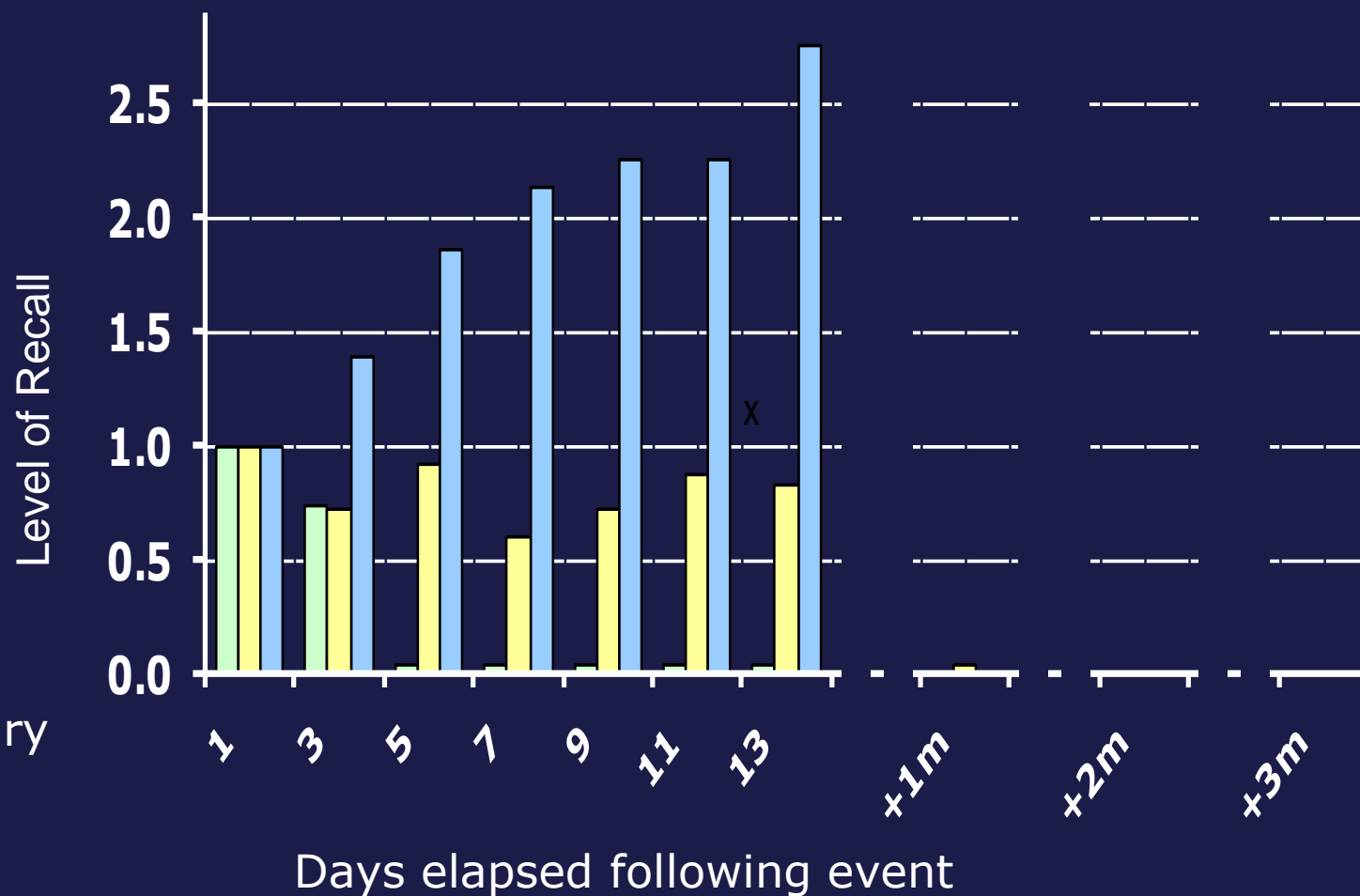
# Results

## Memory of an event over time



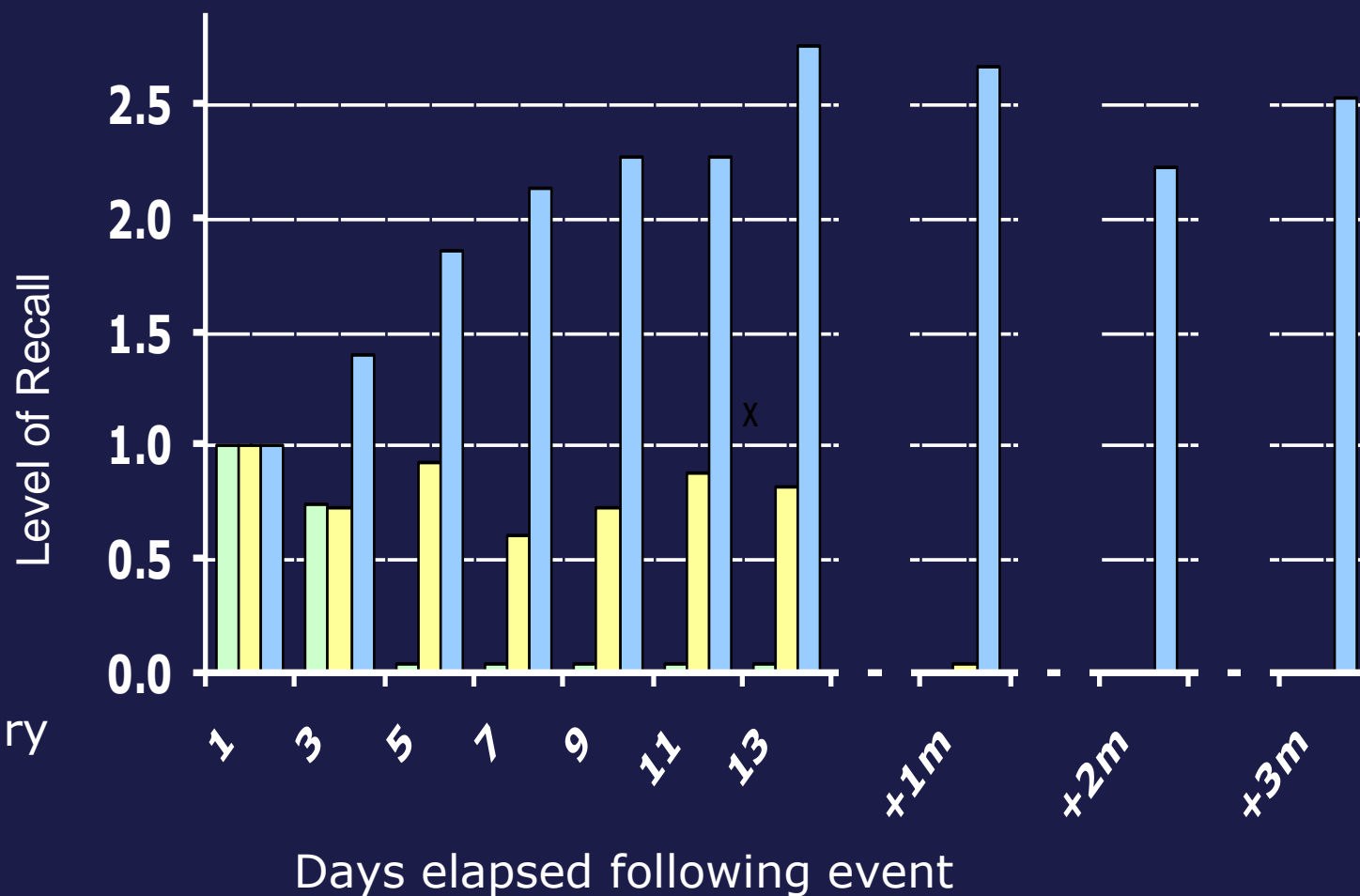
# Results

## Memory of an event over time



# Results

## Memory of an event over time



# Results: feedback from patient

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- Results from patient's point of view:
  - *'It has enormous potential as a memory aid and has been a great success for us personally'*
  - More relaxed socially and less anxious
  - Sharing experiences again was a *'sheer pleasure'*
  - Seeing images brings memories *'flooding back'*