



# Rebuilding Investigations Kit

## Design and Development Case Study

### Background

Working with the University of Leeds and Bradford University, Lab4Living were asked to help lead a number of co-design sessions with a large group of participants who had all been involved in a serious incident at hospital - either as a patient, family member, staff member or external support group.

At the time (2019/20) a “serious incident” was defined as an adverse event that happens while a person is under the care of a Trust. If an event is defined as “serious” then it requires an investigation by the Trust to discover and learn from what happened. The aim of the wider project was to explore how to better involve patients and families in these investigations and prevent the investigation from being another cause of harm.

Lab4Living wanted to involve the co-design participants in a meaningful way from the start; to give everyone a shared understanding of what the project had learned so far. The research team had pulled together literature reviews, interviews, and other forms of evidence and from these had created three “stories”. These were fictional descriptions of serious incidents using invented characters but inspired by true events.

These stories formed the starting point of our work. They were an efficient way of getting Lab4Living up to speed with the realities of serious incidents. As much as we were trying to inform the co-design participants, we first had to inform ourselves. Our long-term goal was to make these stories more interactive and to encourage people to interact with them physically and spatially, rather than simply reading them. The intention was that by thinking critically and engaging in a form of making, the participants would come to the co-design sessions primed and empowered, with a common vocabulary and understanding of the entire process of a serious incident investigation. They would also be exposed to the ‘other side’ of these stories, by seeing events from multiple points of view.

## Creative limitations

With the restrictions of Covid-19 still in place we needed to be able to deliver this interactive story to people by post so from the start we decided that whatever we produced had to fit through a standard letterbox. Previous work by Lab4Living has explored the use of card games as a way to gradually introduce people to complex information, whilst allowing them to group, organise, prioritise or hide this information in a way that makes sense to them. The card format also proved easy to design and prototype without access to university workshop facilities as staff were working remotely during this time.

## Inspiration

From the beginning, Chris Ware's graphic novel 'Building Stories' resonated with the team. Building Stories is presented like a board game. It comes in a box and includes various components; comic strips, booklets, newspapers and game boards that can be read in any order. Each component tells its own story whilst contributing to a larger narrative. Some components of the box might tell the story of the main character; a woman living alone in an apartment block, but others shift the focus to the other residents of the building, or the bee that hovers outside her window. Even the building itself has a voice and a story to tell

Taking inspiration from Building Stories we wanted to shed light on the people and places involved in serious incident investigations. We wanted there to be a sense of exploration and investigation present in the experience, a process of piecing together a narrative. Not only this but we wanted there to be an element of chance, that some information might never surface during your time with the story, something common to any type of investigation.



Chris Ware's 'Building Stories'

## The stories we started with

The research team at the University of Leeds and Bradford University distilled their literature reviews, interviews and other evidence into three stories. These stories were fictional and told the events surrounding a serious incident investigation. The team settled on three stories to show a broad range of incidents and investigations.

Story 1: An elderly patient suffers a hip fracture after receiving too high a dose of morphine.

Story 2: A hearing impaired female patient with PTSD is surprised by a staff member and pushes them away. The result is injury to the staff member and distress to the patient.

Story 3: Maternal death during a complex caesarean.

We started by taking each story and mapping it out visually and spatially to better understand at a glance the main characters and events and how they linked to each other.

### Serious Incident Investigation 1

#### Incident 1 – Acute Trust

**Brief description of incident:** A medication error. At night, on the acute elderly care ward, a nurse gave a female patient too high a dose of morphine. This caused the patient considerable disorientation and confusion – to the extent that she got out of bed, agitated, was so unstable that she fell, fracturing her hip. This subsequently required surgery.

- The patient was originally admitted for a UTI which was causing confusion and pain.
- The incident happened during a night shift which typically has fewer members of staff working.
- There were staff shortages on this particular night shift (there was only the matron and nurse working). Therefore the required protocol of double-checking medication was not undertaken.
- A male nurse administered the incorrect dose.

**Key agents involved in this incident:**

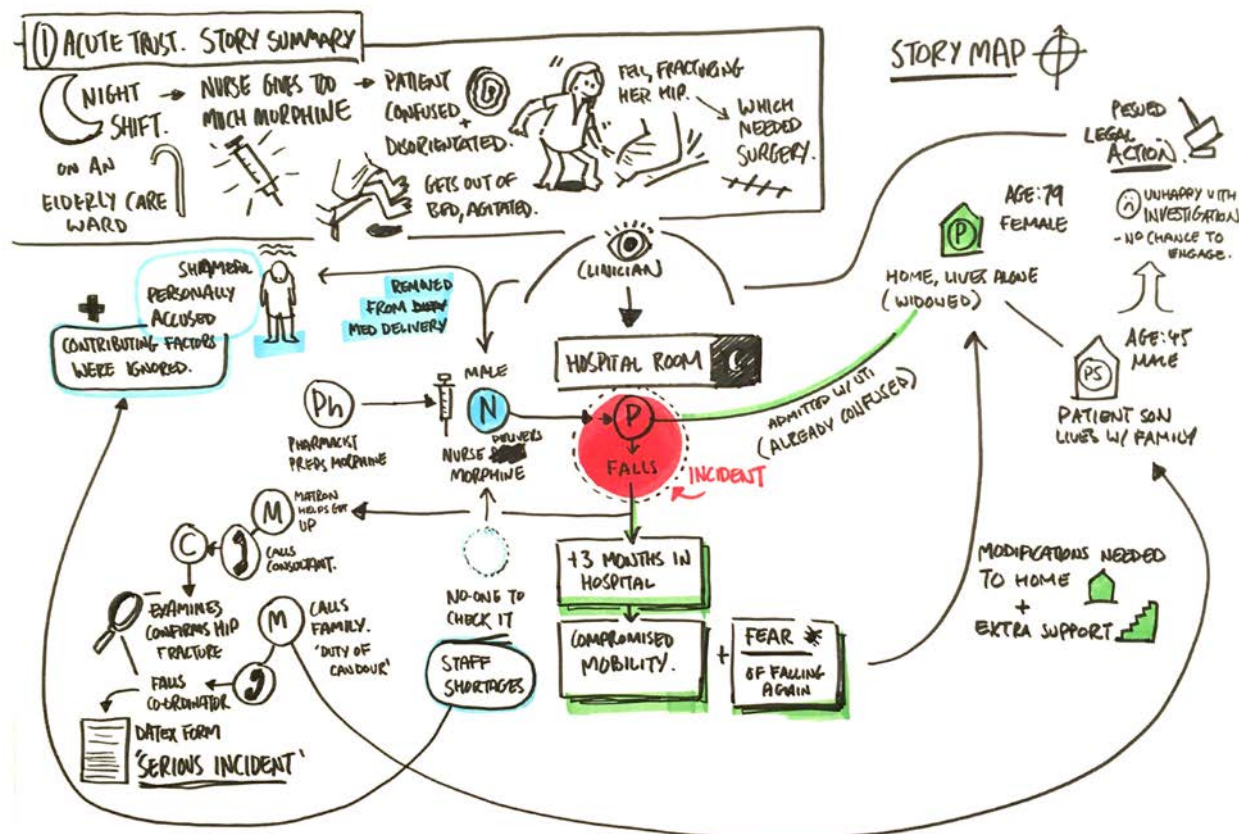
- Patient, age 79, female (recently widowed)
- Patient's son, aged 45 and family.
- Male nurse administering medication
- Matron on the ward
- Clinician in charge of this patient
- Pharmacist who prepared the medication
- Falls coordinator for the ward
- Investigator.
- Orthopaedic surgeons who operated on the hip.

**Impact of the incident/long term effects:**

- Cumulative period of hospitalisation - 3 months (i.e. significantly extended from original reason for admission)
- Permanent compromised mobility (i.e. requiring adaptations at home/care)
- Fear of falling/anxiety
- Extra support with activities needed at home

## Visual Maps

To help us see the events, locations and people in these stories we created some visual maps. This meant it was easier to focus on each person's role by looking at an image instead of having to find their part in the story. We could also link events or people together using lines and arrows. This helped us to understand the complex relationships at work in these scenarios.



Visual Map of Story 1

## Deciding on a single story

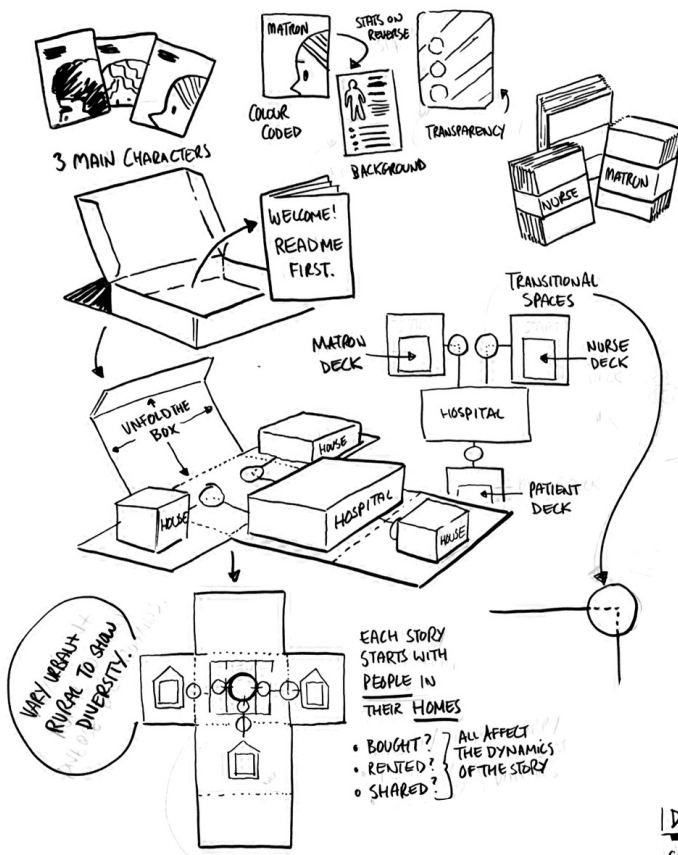
Our first instinct was to include all three stories in the activity we designed. We soon decided that we would only use Story 1. This was for a number of reasons:

- To reduce the development time
- It was the most straightforward narrative, something made clearer by its visual map. It was important for us to reduce the complexity of the activity and time expected of the partners.
- Story 1, although very serious, featured the fewest instances of injury and made no mention of patient death - something many of our co-design partners had experienced first hand. Whilst still a very triggering subject, we hoped that this would reduce the emotional burden on our partners.

*It is worth mentioning that before we decided on a single story we wrote up our intention and inspiration as a design brief for second year Graphic Design students at Sheffield Hallam. The only limitation we placed on their work was to ensure the final product would fit through a letterbox. With such a wide scope, the resulting projects were interesting and demonstrated novel approaches but the short project length didn't let them get beyond very rough drafts.*

## Design Concepts

With a single story to focus on we started sketching potential ways of telling it. We explored many ideas and were presented with many questions at this time, including:



What order should the story be told?  
Chronological or should the incident  
come first?

How can we make it easy for people to know what to do next? Are there instructions?

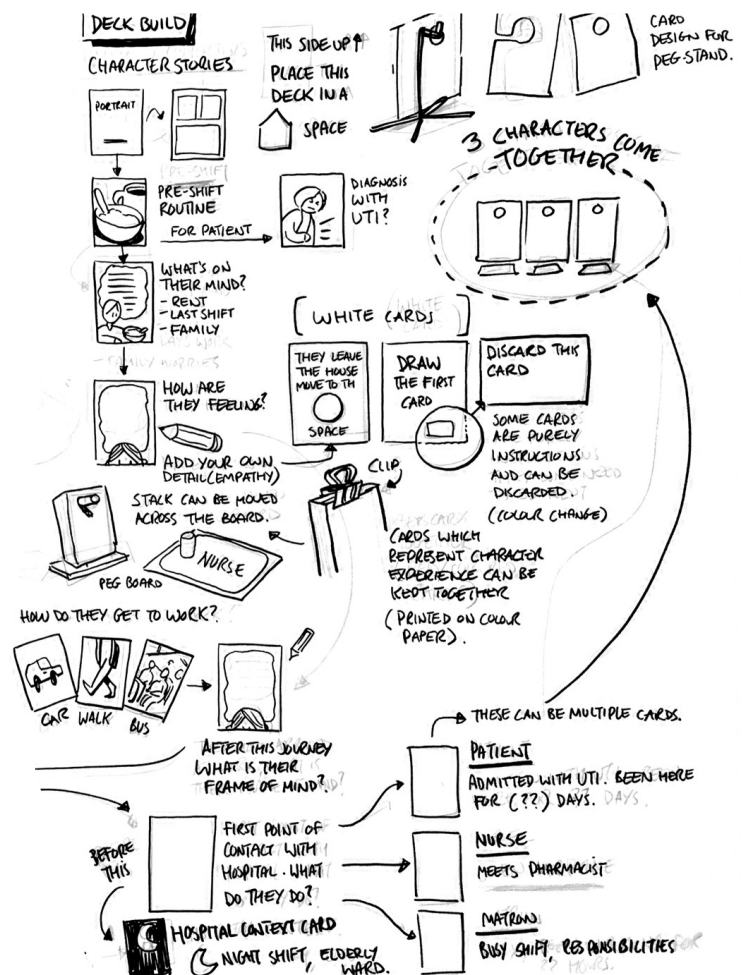
How can we represent a complex system in a simple way?

How can we hide information from the participants? Can we use transparency or windows that reveal or block information from view?

Can we represent the locations in the stories as top down maps that the characters move through?

How can we get an insight into the complexity of the characters' everyday lives. How can we show their moods, emotions or any other behaviour that might have contributed to the incident or how they responded to it?

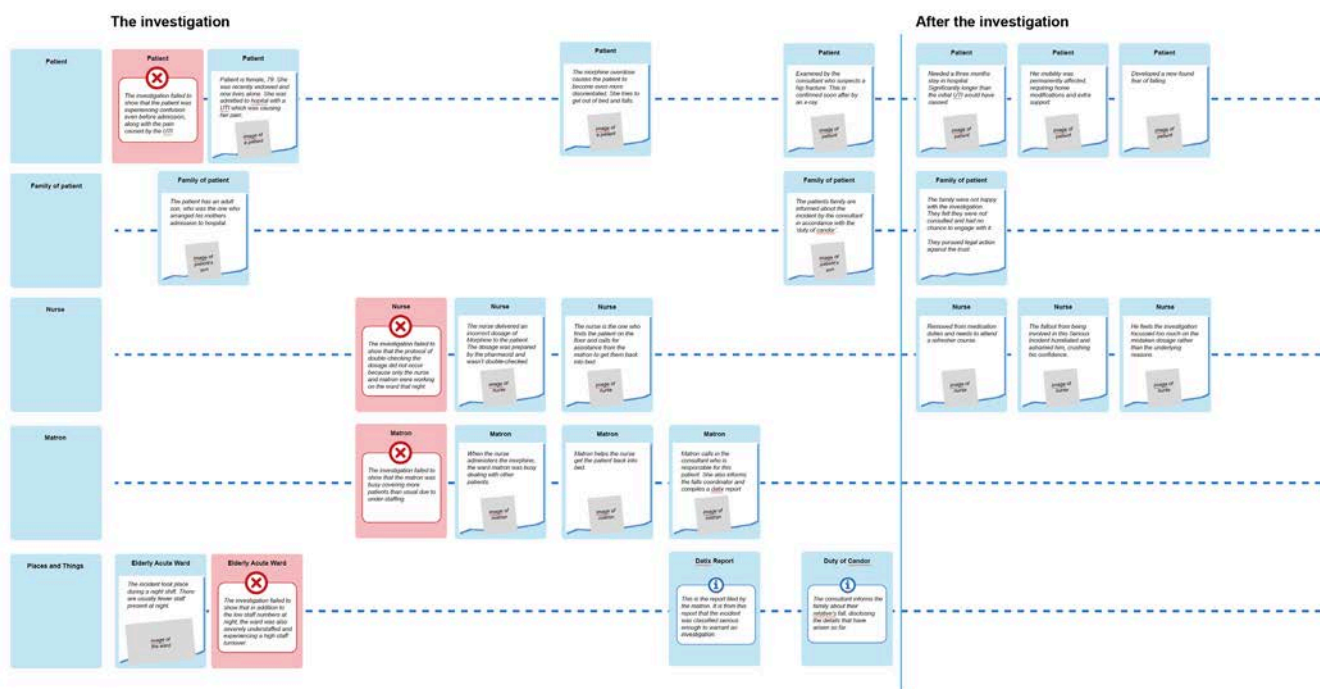
Is the activity actually a recreation of an investigation? Is it told from the point of view of the investigator?



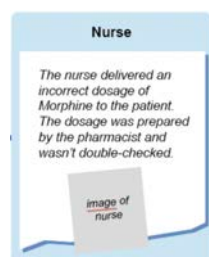
## Version 1

One of the earliest decisions was not to make a 'playable map' where characters moved through locations in the story. We decided it was more important to see how events unfolded through time, and that by the end of playing you should have an overview of the event from start to finish. This way it will be possible to then jump back into specific points in time and question why things happened the way they did.

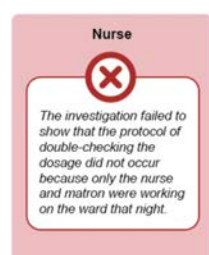
We settled on the idea that the game board would be a timeline split roughly into 2 main phases; the **investigation** and **after the investigation**.



Each character in the story has their own 'lane' in the timeline (almost like a swimming pool). The final lane was initially assigned to 'places and things' as a way of capturing anything that didn't relate to a specific character. We thought this might cover the ward or Trust or some policy document might have been involved in the event.



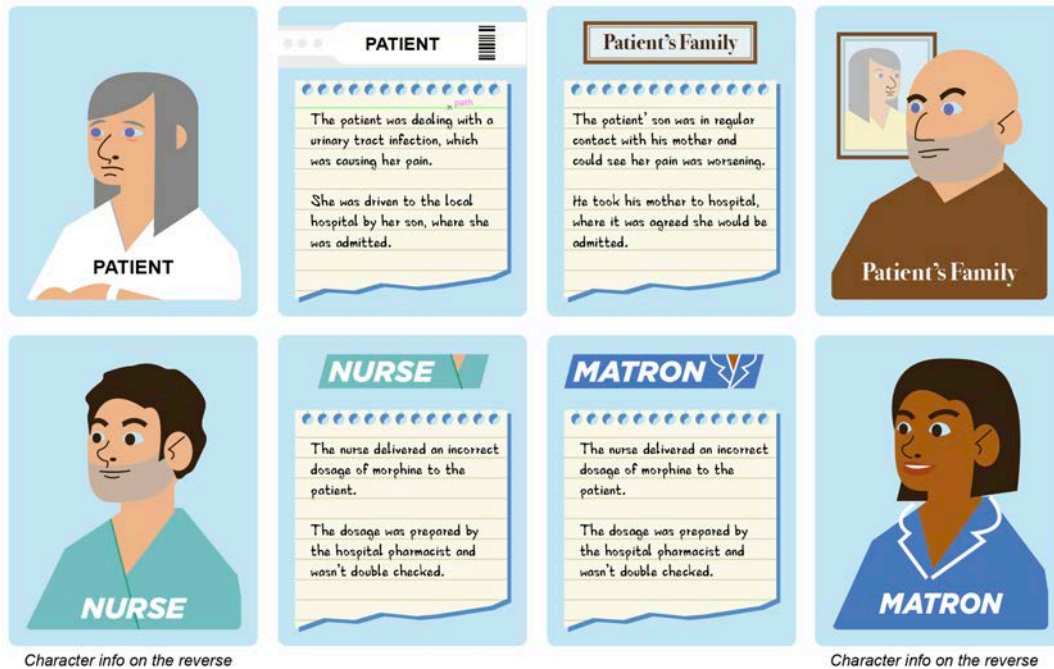
In version 1 we used blue cards to represent the notes made by the investigator. The game is played almost as though you are reading the investigators notes over their shoulder. Each card drawn reveals a new piece of information that the player needs to place on the timeline. After completing the blue deck, the player would be directed to complete a blue form where they can record their conclusions, thoughts and reflections.



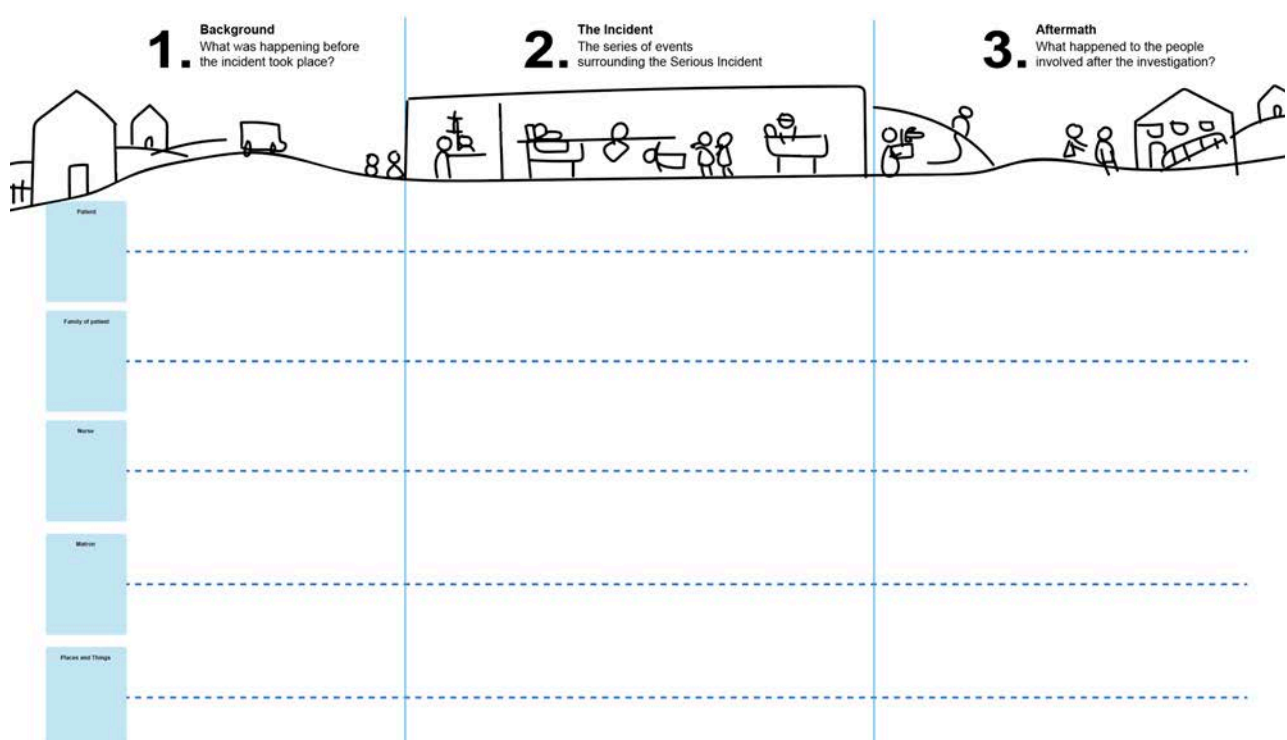
Next the player would then start drawing a certain number of red cards which represent 'information the investigation missed'. Now they would complete a red form which asks how their opinion might have changed.

## Version 2

Version 2 refined the design and added more depth to the characters. Each character has a double sided card with a portrait and a very small bio that might give some idea of their mindset before the event starts to unfold.



For this more character driven approach we added a section called **background** to give each character time to 'arrive' before the incident takes place. Version 2 also marked a shift in how we viewed the experience. In version 1 we were reading investigation notes presumably after the incident. Now we are experiencing events as they happen. This more objective point of view helped us to see the incident more holistically - and to be able to make a better judgement on the findings of the investigation.



## Version 3

With the changes made in Version 2 we felt like we had lost the important focus on the investigation process. So we added an **investigation phase** (the yellow bar).

The investigation phase kicks in once the incident has concluded (in this case the patient has received an injury, but is now safe and under observation). After discussions with the wider research team we learned that investigations are never a consistent length - they could be over very quickly or be very detailed. We wanted to represent this in the game by having players draw through their deck until they hit a card that says 'The investigation is over'. Each player would hit this point at different times and mean that their experience of the investigation would be completely different. We believed this would be a good way to spark conversation between participants when we eventually came together to discuss the activity.



During this version we also started to question the validity of the red cards. The language we used "the investigation failed to show..." placed an unfair focus on the supposed failure of the investigator, even though this may have been no fault of their own. We decided that the next version should give more insight into the investigator as a person, that they should be seen as human and on the same level as the patients and staff involved.



Playable prototype of Version 3



## Version 4

By the time we reached version 4 we were making smaller iterations and testing them with a wider group of colleagues. We also posted paper versions to the wider research teams to see if they could work through the activity with only the included instructions - as would be the case with our co-design partners.

In this iteration we introduced two investigators, each one had a different level of experience, and a number of responsibilities (inside and outside of work) which affected how they ran their investigation. The point here was to see how these variables might change the outcome of an investigation. Each investigation deck contains unique cards. Investigation 1 might reveal information that doesn't show up in investigation 2 and vice versa. This might be due to timing; a family member may be unreachable, the patient may not be conscious long enough to provide information, the investigator may have to conduct the investigation outside of normal work hours. By playing through both we hope to demonstrate the way that investigations may reach different conclusions and that fault or blame are not always easy to place.



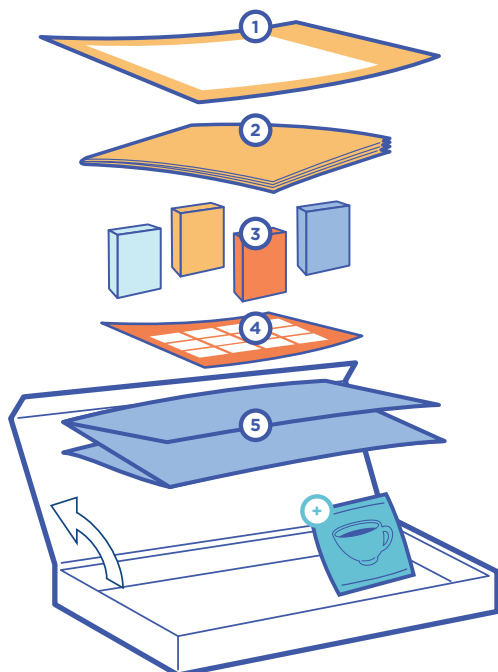
Investigator cards add more background to the wider life of an investigator



Each investigation draws from it's own unique pool of cards.

## The Rebuilding Investigations Kit (Version 5)

The kit we sent out to the participants contained the elements mentioned previously as well as some additional pieces to help them play the game and record their experiences. The complete contents of the kit are as follows (this is also the order that they are seen as the box is opened):



**1. Double-sided instruction** - We kept the introductory instructions to a single sheet.

**2. Activity booklet** - At various points in the activity participants are asked to record their thoughts in this book.

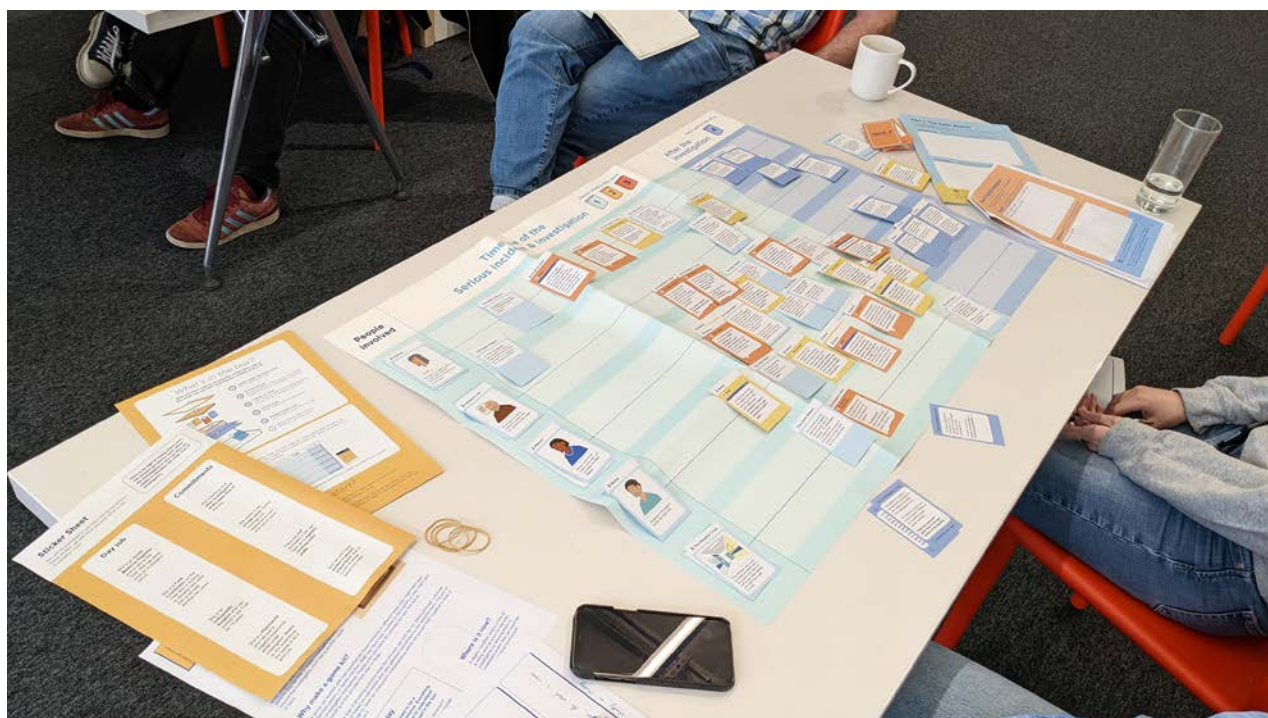
**3. 4 decks of cards** - All cards are numbered and worked through one at a time to complete the activity.

**4. Sticker sheet** - Used as part of the activity

**5. Timeline mat** - Cards are placed onto this mat

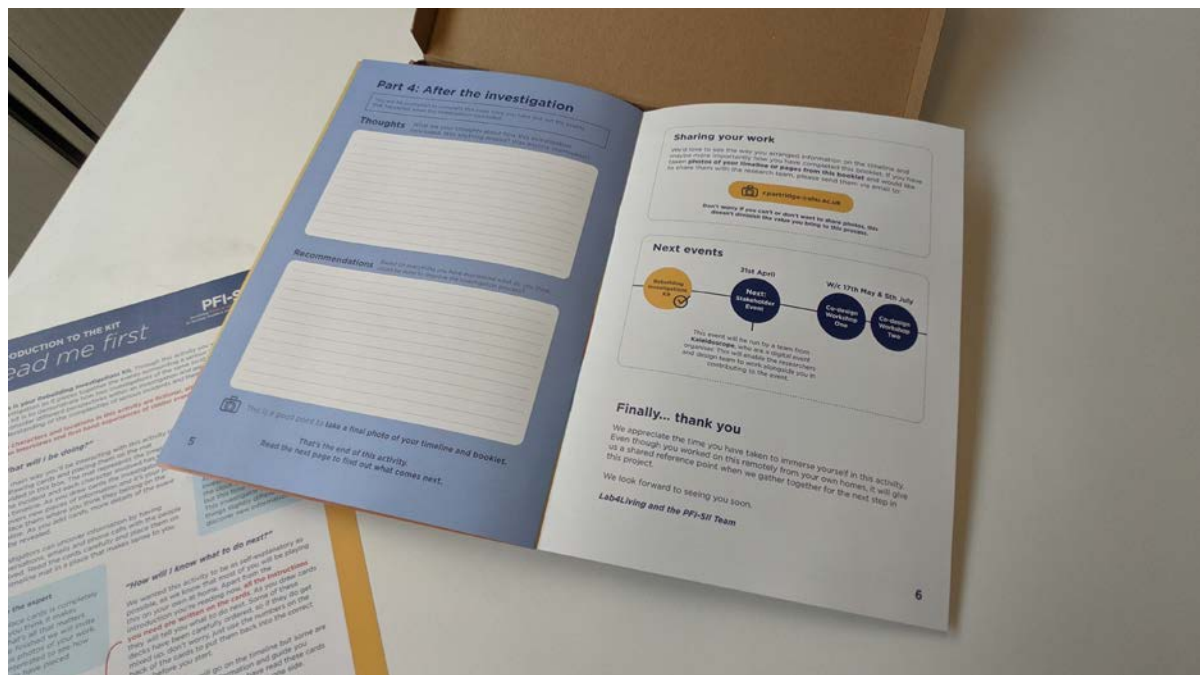
**+ Individually wrapped teabag** - Something we include in all our postal packs

The kit could be played without any extra instruction from us, all the instructions were contained on the double-sided sheet and included on the cards. We play tested many times to ensure there was no point where people hit a dead-end or got lost.



Playtesting the game during a Lab4Living studio day

## The Rebuilding Investigations Kit (Version 5)



## **Feedback and future usage**

After receiving and working through the Rebuilding Investigations Kit we received positive feedback from the co-design partners. Some commented that they found completing the activity emotional, saying that it helped them empathise with staff members and helped them feel less angry. They also reflected that everyone in the story seemed to have issues with a lack of information, understanding and support, which they thought was a sad indictment. They also said how powerful this could be for training purposes.

As mentioned at the very start of this case study the main role of Lab4Living in this project was to design and run a number of co-design sessions. The Rebuilding Investigations Kit, although time consuming, was created for the co-design partners to help them come together through a shared experience (despite working in isolation). The co-design sessions later highlighted a need for information and support which we developed into a set of resources for staff. Here the Rebuilding Investigations Kit found its second life as a training tool to help introduce staff members to the intricacies of serious incident investigations.

## **A note on language**

Internally we have referred to the method described here as 'Research Games' but externally it depends on the context. For the work described here 'games' feels insensitive, as does the word 'story'. Although we might use these words to help us explain the project we didn't use them in the work itself. Instead we found the words 'activity' or 'kit' more suitable.

## **The Lab4Living team:**

Joe Langley - Principal Research Fellow  
Rebecca Partridge - Design Researcher  
Chris Redford - Designer