

Infographic storyboard: Malicious Internal Breach

Co-developed by the public, Kohlrabi and UPD

NOTE: this draft resource specification is intended to be a jumping off point for further shaping by feedback from stakeholders and designers.

Summary of findings guiding the resource development

Design/format: Dialogue participants overwhelmingly preferred storytelling to bring health data security issues to life with relatable experiences. In response, co-creation workshop participants were provided with draft scenarios to develop into relatable stories, explaining security processes, breaches, and responses.

Information level: Many participants realised that they knew less about this subject than they had thought. They requested **basic information** about health data security upfront, with the option to access more in-depth information via signposting supplementary materials.

Visual presentations: A headline animation and interactive infographics were chosen to support the construction of visual understanding, and for accessible, self-paced exploration.

Honest: All participants reported their need for clearer, more honest information about health data security to empower and restore trust. They particularly wanted honesty about what the risks are when breaches occur.

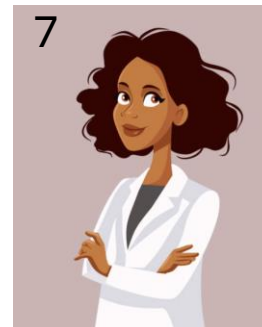
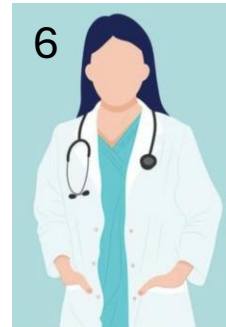
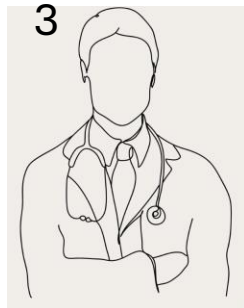
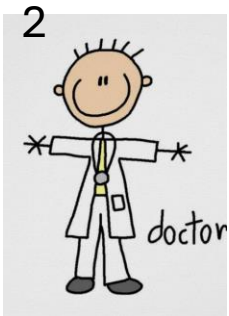
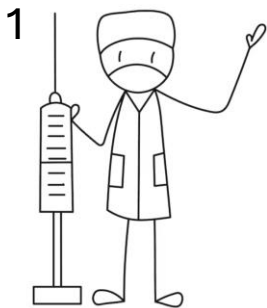
Presentation of risk: There was understanding that risk is everywhere, that it is hard to put a number on breaches or clarify individual impacts. Acceptance of this must be balanced by clear evidence that those responsible for protecting data are present and take their duties seriously.

Key information: What is health data and why is it collected; Access: who is allowed to access; Sharing: How is health data shared within and between direct care staff and health services; What is a breach, who defines it and how to be aware that one has occurred; What are the harms of a breach; Steps to take in case of a health data breach

Summary of design decisions:

Overall, it's important that it's a story, relatable, moving through someone's journey, not a PowerPoint brought to life

- **Tone:** Serious. It's a serious issue, so not too playful. Realism- Not just a PowerPoint, properly moving through the story
- **Character design:** range of demographics to ensure relatable, 2D, no. 8. on real scale below, show emotions in expressions, all clearly different people. Healthcare workers wear calming, trustworthy colours (blues/whites), patients wear colours.
- **Detail cues:** Realism whether hospital or home, but muted to remove clutter and put focus on central characters
- **Sound:** Natural noises to accompany the visuals, for example the sound of a keyboard tapping, or 'data' whirring, or a whoosh of an email. No strong feelings about light background music either way, but it would need to fit the principles of staying relatable, while balancing between honesty, i.e not playful or upbeat, and conveying a sense of safety, reassurance, and gravitas of the topic.
- **Narration:** No final absolute steer for accent or gender but agreement that diversity is important (include a couple of voices), and suggestion to range Britain e.g. Welsh, English etc to ensure accessibility and maintain interest through variety.
- **Script:** Anywhere that text can be chunked and broken down, do it!
- **Length:** No more than 3 minutes for animation, or moving through infographic.



How to use this material

- Interactive infographics for case study: The slides consists of 'case studies', each of which will be developed into an interactive infographic. In this section, the pop-up text is what will 'pop up' as the viewer scrolls through over a graphic.
- **Background**
- The participants discussed a few options for the format of the infographic. They spent time exploring each on this webpage. <https://www.ceros.com/blog/interactive-infographic/>
- They particularly liked this one where the viewer slides through at their own pace, with options to interact and click for more <https://www.ceros.com/inspire/project/goodwin-moderna-history>

Scenario 3: Malicious Internal Breach

Script and Storyboard

Malicious External breach infographic: Scene 1

Pop up text:

“Gemma is being treated in hospital.”

Visual Introduction – Vulnerability of Patient Data

- Hospital ward setting, Gemma (30s, ambiguous skintone) lies in bed, wearing a hospital gown. She has an IV line in her arm, signaling she is undergoing treatment. She looks tired and vulnerable.
- **Background:** A subtle hospital environment – beeping monitors, curtains, and a nurse (older, Black male) checking on another patient in the background.

Malicious External breach infographic: Scene 2

Pop up text:

“Her ex-boyfriend Sam works at the hospital, but he is not involved in her care.

He wants to know what Gemma has been coming in for, and so he goes into her medical record to look”

Visual: Sam Notices Gemma’s Name

- Sam (Gemma’s ex boyfriend) is a hospital employee of similar age and skin tone as Gemma, is at the nurses' station. No one else around. He is wearing scrubs but it's not clear what role, no stethoscope or other clues. Co-creation participants wanted to maintain Sam's anonymity, not to stigmatise any group of people, so wanted to show the scene from the back of his head.
- If possible, he is obviously glancing at an overhead whiteboard of patient names/rooms, having noticed Gemma’s name. From behind, we can see that he is half looking at that, half starting to log in to the computer (with his card inserted) to look at her medical records.

Malicious External breach infographic: Scene 3

Pop up text:

“This is a malicious internal breach – Gemma's health data has been purposely put at risk by Sam within the healthcare system.

It is a criminal offence to access someone's health data without a legitimate reason related to their care."

Visual: Unauthorized Access – A Digital Breach

- Sam sits at a hospital computer, looking at Gemma’s electronic medical record.
- **Perspective:** Over-the-shoulder shot (we never see his face, maintaining anonymity).
- **Elements:**
 - The computer screen shows patient files, with Gemma’s name or photo subtly visible, the name of her doctor/nurse if shown here (or on the whiteboard) is not him.
 - A red warning glow around the screen emphasizes an unethical action.
 - The background remains neutral, ensuring focus is on the act of data breach.

Malicious External breach infographic: Scene 4

Pop up text:

"These breaches are often investigated following a patient(s) complaint, so you may be the first to be aware of or have concerns about a breach occurring."

Visual: Confrontation – The Breach is Discovered

- Sam stands awkwardly at the foot of Gemma's hospital bed. Gemma looks shocked and angry, sitting up slightly.
- **Speech pop up (optional):**
 - **Gemma:** *"What are you doing here?"*
 - **Sam:** *"I saw your records... I just wanted to check if you were okay."*
- **Elements:**
 - Emphasizing that intention does not justify the breach.
 - Gemma's expression is clear – she feels betrayed, violated, and upset.

Malicious External breach infographic: Scene 5

Pop up text: "You may feel worried or angry about this potential loss of privacy and lose confidence in how your data is handled more broadly."

Visual: Gemma Reports the Breach

- Hospital room setting, Gemma sits up in bed, looking frustrated.
- She's speaking to the nurse (older, Black male from previous scenes), who is taking notes on a hospital tablet.
- **Perspective:**
 - Mid-range shot capturing both Gemma and the nurse to show the conversation.
- **Elements:**
 - Nurse's expression is concerned and professional, indicating he takes this seriously.
 - Gemma gestures toward a computer screen or hospital log, or in some sense indicating that she is describing what has happened, with visuals emphasizing her privacy being violated.

Malicious External breach infographic: Scene 6

Pop up text: "Hospitals monitor and investigate internal data breaches"

Visual: Hospital Administration Takes Action

- The nurse from the previous scene is in an office, speaking with a hospital administrator (middle-aged, wearing a lanyard, looking professional).
- The hospital administrator is reviewing system logs on a computer screen with a serious expression.
- Red warning icons or audit logs highlight Sam's unauthorized access to patient records.

Perspective:

- Over-the-shoulder shot of the administrator looking at the evidence.

Elements:

- The administrator types notes for an internal report, preparing the case for further action.

Malicious External breach infographic: Scene 7

Pop up text: "Guilty individuals can be served fines* and lose their jobs."

"Offending clinicians such as doctors or nurses may be suspended, struck off the register, or be disciplined by their professional regulator."

Visual: Sam Faces Consequences

- Sam is in a disciplinary meeting. A manager (older, standing) is speaking firmly to him while Sam sits looking uncomfortable. The perspective is from the side view, depicting the power dynamics, with the hospital manager standing over Sam, making it clear that he is being reprimanded. A hospital policy document is on the desk (visible title: "*Data Protection Violation: Staff Disciplinary Review*"). Sam's ID badge is placed on the table, indicating that he might lose his job.
- **Note:** Experts suggested adding a professional body character, showing that they are accountable, not just the ICO and the hospital. Although they wouldn't be in the same room in real life, in the visual the two characters could be depicted together to show the wider safety net.
- **Note:** This particular text wasn't flagged in the expert interviews but it may be more accurate to remove the 'can be served fines wording'. To be more consistent with initial wording there would also be a reference to criminality here. This slide possibly needs a second review with expert stakeholders such as the ICO.

Expert Feedback: it was noted the side view wouldn't preserve Sam's anonymity. Can we make it less side view?

Malicious External breach infographic: Scene 8

Pop up text: "Gemma is informed by the hospital as to what happened in response to her complaint."

Visual: Gemma Is Informed About Next Steps

The nurse returns to Gemma, standing beside her hospital bed, updating her on the situation. He hands her a leaflet which depicts more information on the next steps. This image can zoom in to those hyperlinks to click on.

Note: The text pop-up has been added after co-creation, in response to findings reinforcing that identifying the next steps after breaches for individuals was key for participants. The title of the slide 'Gemma is informed about next steps', was their existing suggestion. However, the visual suggested by co-creation was of the leaflet/ipad showing how to contact the ICO, rather than general next steps. Expert guidance suggested it would be more accurate that the hospital would handle the breach and Gemma would not need to contact the ICO

Expert feedback: Feedback was that concluding the specific case of Gemma should come before panning out to the wider practices of health organisations, so this change has been made.

Malicious External breach infographic: Scene 9

Pop up text: “Health services take many steps to try and avoid these malicious internal breaches happening. For example, services must review and report on their data security practices in line with clear quality standards, provide regular data security training to their staff, and appoint specific staff members who monitor and advise on data security to health services.”

Visual: Sam Leaving the Hospital

- Sam is walking off screen out of the hospital doors, carrying a box of personal belongings. His distance reinforces the future change. The hospital building and logo are visible in the background. The focus however is on the hospital level people responsible for data protection. The original animation characters are visible and the pop up text is broken down to appear for each character (e.g. regular data training for staff comes up next to small group of staff, and a data security officer for, 'who monitor and advise..')

Malicious External breach infographic: Scene 10

Pop up text: The Information Commissioners' Officer, or ICO - regulate and enforce data protection laws in the UK

"The ICO can also investigate and if necessary, prosecute in these cases"

"They will work with the hospital trust that Sam works for to help them learn how to prevent this type of breach from happening again."

"ICO can also take action against the hospital trust that Sam works for, if they are found to have not done enough to prevent the breach from happening in the first place."

"If you ever need it, you can get support from the ICO with how to complain to the offending service/organisation, as well as how to submit a complaint to the ICO to prompt them to investigate."

Visual: ICO role (as part of the safety net)

Lots of pop ups, break information down. Return to professional ICO character, this time with police officer next to them. The sense is of them having a regulatory toolkit of different options to employ depending on the scenario.

Note: Following co-creation process, wording was added in response to expert feedback to stress the learning and support that the ICO offer, and the range of tools they have to regulate with. The ICO are now positioned last in this infographic to show that they are most serious, and remind people that hospitals themselves and professional bodies take these breaches seriously.