Script	Visuals
If we apply a human-centric design approach to the design cycle we would first want to consider who might be in the ecosystem – this might include the radiologists who acquire scans, patients, and those in charge of maintaining or purchasing a replacement device.	
In this video, we will explore how adding elements of human-centered design to improve the overall experience of a medical device, specifically an MRI scanner for kids.	[Text on screen] Goals By the end of this video, you should be able to: ● determine how adding elements of human-centered design to improve the overall experience of a medical device, specifically an MRI scanner for kids
We will consider designing a new and improved medical imaging device in this case study.	
Clinicians often order some form of imaging to better assess internal tissues. MRIs are often preferred to CT scans if possible due to the radiation delivered to the patient with CT scanning. In this case study, we will follow the experience of a GE engineer. GE and Siemens are major manufacturers of MRI devices	Display slide 2
When we are thinking about the patient experience for an MRI scan one of the main downsides include artifacts due to	
patient movement, feelings of claustrophobia, loud sounds even with ear plugs, and potential heating in the area being imaged. Since each scan is on the order of minutes, patient movement can cause image artifacts that would require re-imaging.	Display slide 3

Thus improvements in the ability to make better scans faster can help mitigate issues around patient movement.	
It may be easy to default to an adult patient when we think about the patient experience. Asking kids to sit still for up to five minutes in a loud confined space is asking for a lot. Observing radiologist's work at a children's hospital can help identify particular challenges with imaging kids. Such observations could include interviews or watching the radiology technicians as they work with parents and kids during the visit. This is exactly what an engineer at GE, Doug Dietz, did after having one of his designs implemented within a hospital. As the engineer on such a large project, which can take years between design and implementation, there may not be many opportunities to speak with different ecosystem members. By going to the hospital where his design was in use, Doug learned a couple of key issues during his observations. Importantly he learned how the experience could be a very stressful situation for both the children and their parents. In cases when children could not sit still due to the noise or lack of understanding of why they needed to sit still for so long, medicine was used to sedate the patient. Any use of drugs can also have its complications and create other stressors for parents.	
These sets of observations allowed Doug to go back to the design cycle and reframe the problem, which was not a technical problem as originally framed in a previous version of the design cycle.	
By reframing the problem specifically for children, Doug was able to go back to the drawing board to think of creative ideas to address the children and their discomfort during the scans. This resulted in Doug redesigning the space around the machine to make it an adventure experience for kids. Now the loud sounds were just part of being on a pirate ship, something that the kids can use their imagination to participate in the fantasy world. ===	[Display slide 4](#)
After redesigning the room and revisiting it to see how the experience changed after the redesign, Doug found that the hospital's patients were less stressed even without medication. This also results in less stress for parents and medical workers.	

Construct

| This case study is an example of how even an existing design can benefit from another round of the design cycle to continue improving on the design and function. | |