Open School

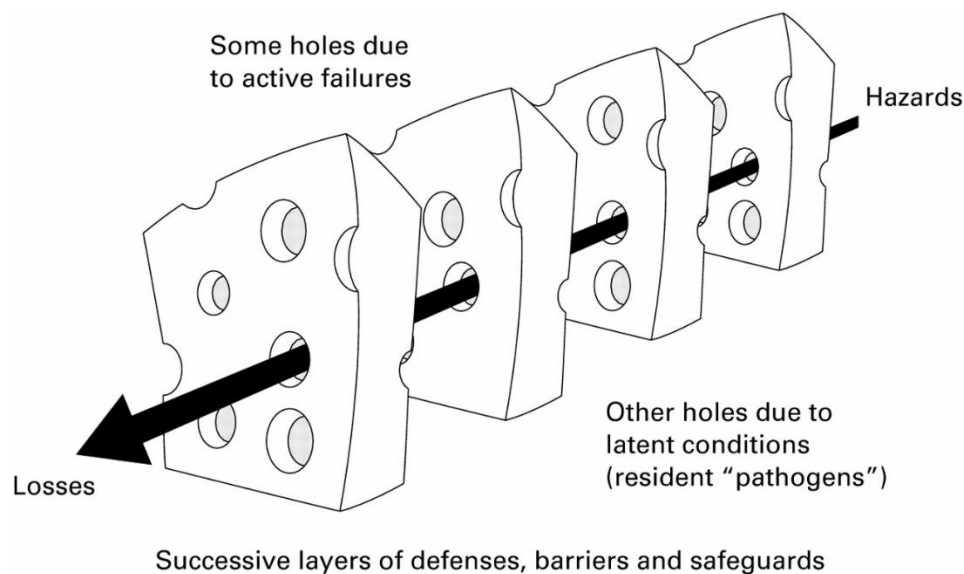## Patient Safety 101: From Error to Harm (Formerly "Fundamentals of Patient Safety")

Lesson 1: The Swiss Cheese Model
- The Swiss cheese model is a useful way to think about errors in complex organizations.

- The stack of cheese represents your organization's safety system. Slices of cheese prevent hazards from resulting in harm, but every now and then, the "holes" line up and cause harm. The holes represent both latent conditions (so-called accidents waiting to happen) and active failures (errors and violations by front-line providers).
    - The Tenerife plane crash in 1977 is an example of how multiple unsafe conditions allowed the pilot to make an error, which the system then failed to stop from causing harm.
- The Swiss cheese model reveals the importance of improving latent conditions so that they do not eventually cause harm.
    - Voluntary reporting systems, in which providers submit reports on unsafe conditions and errors, can help improve unsafe conditions before they cause serious adverse events.

Lesson 2: A Closer Look at Error

- Unsafe acts are categorized as either errors or violations.
  - When an action fails to go as intended, the error is called either a **slip** or a **lapse.**
    - An example of a **slip** is accidentally pushing the wrong button on a piece of equipment — you and others can see that you pushed the wrong button.
    - An example of a **lapse** is some form of memory failure, such as failing to administer a medication — no one can see your memory fail, so the error is not observable.
  - The second type of error, in which an action goes as intended but is the wrong one, is a **mistake.**
- A **violation** is a deliberate deviation from an operating procedure, standard, or rules.

Lesson 3: A Closer Look at Harm

- Improving patient safety isn't just about preventing errors — it's also about reducing harm.
  - A project in Michigan, US, developed a comprehensive safety system for reducing catheter-associated bloodstream infections (CLABSIs). It included a checklist, supply carts, and explicit roles for the various members of a care team. The system showed that hospitals could nearly eliminate CLABSIs, which people once thought to be an inevitable complication of care.
- IHI has defined harm as "unintended physical injury resulting from or contributed to by medical care that requires additional monitoring, treatment, or hospitalization or that results in death."
  - Patient safety innovators and patients have suggested a broader definition of harm, including three types of injury that have not traditionally been included in the definition of harm:
    - Errors of omission (what providers fail to do)
    - Psychological harm
    - Financial harm in the form of unaffordable care
- The history of medicine shows that many harms that used to be accepted are actually preventable, including high doses of chemotherapy, radical mastectomies, and overuse of antibiotics that leads to resistance.