|  |  |  |
| --- | --- | --- |
|  | *New technology* | *Existing technology* |
| *Novel application* | High risk | Moderate risk |
| *Familiar application* | Moderate risk | Low risk |
| ***Table 1:* Contingency table illustrating the risk categories associated with interactions of novel and existing technology and its application. Adapted from Markus**19**.** | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Challenges** | **Consequences for patient safety** | **Recommendations** | **Safe**  **HIT** | **Safe**  **use of**  **HIT** | **HIT to**  **improve**  **safety** |
| 1 | Difficult to conceptualise threats to patient | Inadequate consideration of threats | Systems approach to conceptualising riskT; Safety | x | x | - |
|  | safety from non-physical innovations. | to patient safety. | casesP; Socio-technical perspective |  |  |  |
| 2 | Unclear how to sensibly integrate and | Missed opportunities to use data; | Dynamic and causal modelling continuously | x | x | x |
|  | interpret new and voluminous data streams. | Inappropriate use of data; Biased use | surveilled for performanceP; Middleware for |  |  |  |
|  |  | of data. | interoperabilityP; Standards for linkage and |  |  |  |
|  |  |  | exchange of healthcare dataP; Automated anomaly |  |  |  |
|  |  |  | detection |  |  |  |
| 3 | Reactive regulatory- and standards-based | Avoidable harm is experienced before | Gradual approval of medical devicesP; Systems | x | - | - |
|  | approaches to safety. | mitigations are put in place. | approach to conceptualising riskT |  |  |  |
| 4 | Difficult to build and maintain trust in health | Misinformation and disinformation | Socio-technical perspectiveT; FactSheetsP | x | x | x |
|  | information systems that are obscure and | threaten patient safety. |  |  |  |  |
|  | complex. |  |  |  |  |  |
| 5 | Emergent patient-safety consequences in | Hazards cannot be completely | Systems approach to conceptualising riskT; | x | x | - |
|  | health information systems. | foreseen. | Systems approach to patient safetyT; Safety |  |  |  |
|  |  |  | casesP; Socio-technical perspectiveT; Gradual |  |  |  |
|  |  |  | approval of medical devicesP |  |  |  |
| 6 | Solutionism inappropriately simplifies | Unfit interventions and assurances | Socio-technical perspectiveT; Systems approach to | x | - | - |
|  | problems and predicaments. | might be suggested. | conceptualising riskT |  |  |  |
| Recommendations are tagged as theory development (T) and practical application (P) in line with the foundational aim of the workshop series. The rightmost columns are the domains of safety for Health Information Technology (HIT), as per Singh and Sittig’s Health Information Technology Safety Measurement Framework.33 | | | | | | | |
| ***Table 2:* Summary of recommendations to address safety concerns posed by the challenges of emerging digital health.** | | | | | | | |