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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Barrier relevance to technology innovation deployment process** | | | | | | | |
|  |  | Initiation (pre-adoption) | | | | Implementation (post-adoption) | | | |
|  |  | Barrier | Cause | Effect | Source | Barrier | Cause | Effect | Source |
| **Owner of deployment barrier** | Individual | *The introduction of new technologies into physician’s workflow is of large burden*   * *Physicians do not want to look at a second screen next to Epic (CDE1\_A1\_DI, Pos. 46)*   *“They spend literally more than 50% of their time, you know, as trained medical doctors inputting data into a computer on a keyboard, versus seeing patients [quote].” (CS2\_A2\_DI, Pos. 22-24)* |  |  | CDE1\_A1\_DI, Pos. 42  CS2\_A2\_DI, Pos. 22-24  CDE1\_A1\_DI, Pos. 46 | * *The introduction of new technologies into physician’s workflow is of large burden* * *Physicians do not want to look at a second screen next to Epic (CDE1\_A1\_DI, Pos. 46) “They spend literally more than 50% of their time, you know, as trained medical doctors inputting data into a computer on a keyboard, versus seeing patients [quote].” (CS2\_A2\_DI, Pos. 22-24)* |  |  | CDE1\_A1\_DI, Pos. 42  CS2\_A2\_DI, Pos. 22-24  CDE1\_A1\_DI, Pos. 46 |
| *Physicians do not want to adopt and use anything that takes longer than what they do today by*   * *Putting more restriction in place (HITV1\_DI, Pos. 22)* * *Requiring more clicks (HITV1\_DI, Pos. 22)* | *Physicians are driven by metrics, e.g., the number of clicks it takes to perform a task (HITV1\_DI, Pos. 22)* | *Many physicians try to find workarounds (FA1\_DI, Pos. 10)* | HITV1\_DI, Pos. 22  FA1\_DI, Pos. 10 | *Physicians do not want to adopt and use anything that takes longer than what they do today by e.g., putting more restriction in place (HITV1\_DI, Pos. 22)* | *Physicians are driven by metrics, e.g., the number of clicks it takes to perform a task (HITV1\_DI, Pos. 22)* | *Many physicians try to find workarounds (FA1\_DI, Pos. 10)* | HITV1\_DI, Pos. 22  FA1\_DI, Pos. 10 |
| *Physicians are burned out* |  | * *Do not think about using some new technology, i.e., it is not top of mind (M1\_DI, Pos. 24)* * *They spend their time in a way that they believe is most impactful to their business or their family or what is important to them (M1\_DI, Pos. 36)* * *An innovation requires education and physicians do not have time for this (M1\_DI, Pos. 36)* | CS2\_A2\_DI, Pos. 22-24  M1\_DI, Pos. 24  M1\_DI, Pos. 36 | *Physicians are burned out* |  | * *Do not think about using some new technology, i.e., it is not top of mind (M1\_DI, Pos. 24)* * *They spend their time in a way that they believe is most impactful to their business or their family or what is important to them (M1\_DI, Pos. 36)* * *An innovation requires education and physicians do not have time for this (M1\_DI, Pos. 36)* | CS2\_A2\_DI, Pos. 22-24  M1\_DI, Pos. 24 M1\_DI, Pos. 36 |
| *Sharing data with other stakeholders is added work for physicians* |  |  | CS2\_A2\_DI, Pos. 18 | *Sharing data with other stakeholders is added work for physicians* |  |  | CS2\_A2\_DI, Pos. 18 |
| *New fancy applications are not simple and easy to use* | *Often the application of the technology requires too many additional clicks by the physician that impedes them from patient care (PV1\_DI, Pos. 28) [see Pr\_TechPerf]* |  | CS2\_A2\_DI, Pos. 24  PV1\_DI, Pos. 28 | *New fancy applications are not simple and easy to use* | *Often the application of the technology requires too many additional clicks by the physician that impedes them from patient care (PV1\_DI, Pos. 28) [see Pr\_TechPerf]* |  | CS2\_A2\_DI, Pos. 24  PV1\_DI, Pos. 28 |
| *Need to win the support of people who need to use the EMR system* |  |  | HITV1\_DI, Pos. 16-18 | *Need to win the support of people who need to use the EMR system* |  |  | HITV1\_DI, Pos. 16-18 |
| *The solution does not solve a problem painful enough to influence stakeholders to change*  *“Pain drives change [quote].”* |  | *Need to understand the different lenses of pain* | M1\_DI, Pos. 34 | *The solution does not solve a problem painful enough to influence stakeholders to change*  *“Pain drives change [quote].”* |  | *Need to understand the different lenses of pain* | M1\_DI, Pos. 34 |
| *Older physicians feel everything has changed* | *Digitalization of healthcare* |  | PV2\_CDE3\_DI, Pos. 30 | *Older physicians feel everything has changed* | *Digitalization of healthcare* |  | PV2\_CDE3\_DI, Pos. 30 |
| Patients will not be willing to pay to hold all their clinical data on their own | Patients expect the government and whole healthcare ecosystem to do these things for them, i.e., they view healthcare as an entitlement |  | CS2\_A2\_DI, Pos. 16  CS2\_A2\_DI, Pos. 44 |  |  |  |  |
|  |  |  |  | Healthcare data is often in a not very usable format for patients | Patients are not as sophisticated as a medically trained physician or nurse |  | CS2\_A2\_DI, Pos. 44 |
| *A certain population demographics, i.e., seniors, people from rural areas without internet connection, does not have access to digital technology* |  | *Cannot adopt and use the technology even if they are the most tech-savvy* | PV2\_CDE3\_DI, Pos. 68 | *A certain population demographics, i.e., seniors, people from rural areas without internet connection, does not have access to digital technology* |  | *Cannot adopt and use the technology even if they are the most tech-savvy* | PV2\_CDE3\_DI, Pos. 68 |
| Organization | *Blockchain works well for a zero-trust architecture, but in practice, all involved parties (VRS providers) having to maintain their nodes is challenging and requires a certain degree of expertise (ETC1\_DI, Pos. 14-24)* |  | *Involved parties (VRS providers) fell back on the old-school relational model, with everyone building their own look-up directory and keeping it in synch via APIs [they wanted to go with the tried and tested] (ETC1\_DI, Pos. 24) [see Pr\_FacilCon]* | ETC1\_DI, Pos. 14-24  ETC1\_DI, Pos. 24 | *Blockchain works well for a zero-trust architecture, but in practice, all involved parties (VRS providers) having to maintain their nodes is challenging and requires a certain degree of expertise (ETC1\_DI, Pos. 14-24)* |  | *Involved parties (VRS providers) fell back on the old-school relational model, with everyone building their own look-up directory and keeping it in synch via APIs [they wanted to go with the tried and tested] (ETC1\_DI, Pos. 24) [see Pr\_FacilCon]* | ETC1\_DI, Pos. 14-24  ETC1\_DI, Pos. 24 |
| *Blockchain is too much of a bother* |  |  | *ETC1\_DI, Pos. 14-24* | *Blockchain is too much of a bother* |  |  | *ETC1\_DI, Pos. 14-24* |