**Implementation tool for**

**the NCEPOD report**

**‘The Inbetweeners’**

Failure Modes and Effect Analysis (FMEA) diagrams

<https://www.ncepod.org.uk/2023transition.html>

**Failure Modes and Effects Analysis (FMEA)**

Failure Modes and Effects Analysis (FMEA) is a tool for conducting a systematic, proactive analysis of a process in which harm may occur. In an FMEA, a team representing all areas of the process under review convenes to predict and record where, how, and to what extent the system might fail. Team members can then work together to prioritise and develop improvements to prevent particular failures.

The FMEA tool prompts teams to review, evaluate, and record the following:

* Steps in the process
* Failure modes (What could go wrong?)
* Failure causes (Why would the failure happen?)
* Failure effects (What would be the consequences of each failure?)

Teams use FMEA to evaluate processes for possible failures and to prevent them by correcting the processes proactively rather than reacting to adverse events after failures have occurred. FMEA is particularly useful in evaluating a new process prior to implementation and in assessing the impact of a proposed change to an existing process.

We have produced an example of how FMEA can be used. A blank table has also been provided to be copied and adapted to your organisation’s needs.

For more information on quality improvement please see the following sources or contact your local Quality Improvement department:

**Instructions**

At the top of the table (below) identify a process identified in the study. In the left column, input steps involved in the process.

* **Failure Mode** [*What could go wrong?*]: List anything that could go wrong during that step in the process.
* **Failure Causes** [*Why would the failure happen?*]: List all possible causes for each of the failure modes identified.
* **Failure Effects** [*What would be the consequences of the failure?*]: List all possible adverse consequences for each of the failure modes identified.
* **Likelihood of Occurrence** (1–10): *On a scale of 1-10, with 10 being the most likely, what is the likelihood the failure mode will occur?*
* **Likelihood of Detection** (1-10): *On a scale of 1-10, with 10 being the most likely NOT to be detected, what is the likelihood the failure will NOT be detected if it does occur?*
* **Severity** (1-10): *On a scale of 1-10, with 10 being the most likely, what is the likelihood that the failure mode, if it does occur, will cause severe harm?*
* **Risk Profile Number (RPN):** For each failure mode, multiply together the three scores the team identified (i.e., *likelihood of occurrence x likelihood of detection x severity*). The lowest possible score will be 1 and the highest 1,000. To calculate the RPN for the entire process, simply add up all of the individual RPNs for each failure mode.
* **Actions to Reduce Occurrence of Failure**: List possible actions to improve steps in the process, especially for failure modes with the highest RPN)Tip: Teams can use FMEA to analyse each action under consideration. Calculate how the RPN would change if you introduced different changes to the system.

**Use RPNs to plan improvement efforts.**

Failure modes with high RPNs should be prioritised as the most important parts of the process to focus improvement efforts. Failure modes with low RPNs are not likely to affect the overall process much, even if eliminated completely, and they should therefore be at the bottom of the list of priorities.

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| **Transition study example:** Request input into the multidisciplinary team (MDT) for young people with ongoing healthcare needs as needed from relevant healthcare professionals and other sectors (social care, education) | | | | | | | | |
| **Steps in the process** | **Failure Mode** | **Failure Causes** | **Failure Effects** | **Likelihood of Occurrence (1-10)** | **Likelihood of Detection**  **(1-10)** | **Severity**  **(1-10)** | **Risk Profile Number (RPN)** | **Actions to Reduce Occurrence of Failure** |
| 1. Conduct a holistic assessment of young people with ongoing needs who will need to transition to adult services | Young people with ongoing needs may not be routinely allocated a lead clinician to conduct a holistic assessment | Young people with ongoing needs may not be easily identifiable on electronic systems  No organisation policy to allocate lead clinicians | Process of transitioning to adult service will be incomplete for young people with ongoing needs  Disjointed working between other sectors and specialties |  |  |  |  | Implement electronic system that can identify all young people who will need to transition  All YP approaching transition must have a lead clinician to coordinate a holistic assessment with other specialities |
| 2. Identify other sectors (social care, education etc.) that may need to be invited to MDT meetings/transition planning | Clinical team unaware of YP with ongoing need’s holistic needs  No way of contacting other sectors | Young people ongoing needs  wider needs not considered in their healthcare/transition  plans | Young people with ongoing needs may not receive the social care they require in adult services or miss schooling |  |  |  |  | Include education in MDTs, e.g EHCPs  Include social care in MDTs where appropriate and with the YP’s consent |
| 3. Have all relevant specialities undergo developmentally appropriate training (DAH) | Organisation does not mandate developmentally appropriate training | Young people are not included in MDT meetings/transition planning  Not asked whether they need other sector involvement | Young people disconnect with health services or do not feel it is ‘person centred’ |  |  |  |  | Include DAH training in all relevant specialties’ job descriptions |

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| **Transition study:** | | | | | | | | |
| **Steps in the process** | **Failure Mode** | **Failure Causes** | **Failure Effects** | **Likelihood of Occurrence (1-10)** | **Likelihood of Detection**  **(1-10)** | **Severity**  **(1-10)** | **Risk Profile Number (RPN)** | **Actions to Reduce Occurrence of Failure** |
| 1 |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |