

## Supplementary appendices

### Development of an automated indicator

To automate the production of the compliance rate indicator, we collaborated with our IT department (ITSD) to extract the data directly from their clinical data repository (EPR data). The HUG EPR data contains 80% of all the clinical activities of the hospital including the screening and prescription of admission screening (AS) and additional precautions (AP) in the emergency department (ED), which are captured via the HUG electronic medical record (EMR) system. The EPR data can be updated up to every hour, which makes production of the compliance rate indicator as in-time as possible. The collaboration included four phases: 1) meet with the IT engineer to explain the project and the specifications of the data needed; 2) the IT engineer created the code to extract the data from the EPR data; 3) the infection prevention and control (IPC) nurse checked and validated the data extracted by manually checking against the patient medical record in the EMR; and 4) once the data were thoroughly verified, we automated the process of extraction periodically for the data to automatically populate a statistical visual display such as a control chart for the indicator. We determined the repetition of the extraction to be on a monthly basis, which allows managers to react in a reasonable time. This indicator would be constructed using a denominator including all patients with a flag “MDRO alert” and a numerator including the number of AS and AP events. Screening conducted outside the ED was excluded from the extraction. The file contained the identity of the patients and the time and date of the admission and discharge. Regarding these data, our criteria were the feasibility and reliability of the extraction and the relevance of the data. The main objective for the automated production of this indicator was to create a dynamic process to measure and monitor the progress in AS and AP compliance.