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| To | **:** | IHE Pharmacy |
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# Introduction

This document describes some use case scenario’s where the a workflow for substance administration is narrated. The use cases are typical in mobile health environment, where the use of FHIR might be appropriate.

## Home nursing scenario

* A nurse is responsible for medication administration of elderly patients in an ambulatory environment. The patients reside at home or in a wide spread nursing homes where internet is not always available.
* The nurses, who usually work in teams are responsible for the care of a group of patients.
* A nurse who assigns to work receives a working list of the patients she has to visit on that particular day. The assignments could involve several tasks like measuring temperature, blood pressure or taking blood samples, but in this case we will concentrate on the medication administration. These assignments are part of a care plan.
* Each patient could have multiple medication. The logistical supply of the medication is not part of the story. The patient could have the medication available at home or the nurse could take a “Baxter” strip along.
* The nurse downloads the medication administration instructions from her EHR to her tablet. The nurse checks her tablet and compares visually the names of the patients and the amount of medication lines with the EHR to verify if the download has been successful. If not successful she tries a second attempt to download the instructions once more.
* The app on the tablet tells the nurse the optimal routing with the names and addresses of the patients she has to visit.
* At each address she looks on the tablet for the medication and the dosage for the appropriate patient.
* The nurse searches for the medication for the patient among the Baxter strips and scans the barcodes on the strip with the camera in her tablet. The app generates a warning if the medication and the patient do not match.
* She sees to it that the medication is being swallowed.
* The nurse can also add extra medication for example the conditional medication or even OTC medication to the administration list of the patient. The app can scan the barcode of the package or the nurse enters a part code manually into the app.
* The nurse can also register that certain medication have not been consumed including the reason why.
* Before she leaves she can enter remarks about the state of the patient.
* A signal is generated if medication from the strip has not been confirmed.
* After her round of patients the nurse returns to her institution and connects with her EHR.
* The results of the medication administration round is reported back to the EHR. This could be initiated from the EHR from where the data from the app is uploaded to the EHR.
* The EHR detects when expected medication lines are not reported back. The nurse can add explanation why the event did not occur.
* The medication management profile of the patients are updated with the feedback of the substance administration.
* The EHR detects when patients are not reported back.

## Follow up of therapy use case

* This use case is to guide the patient thru in complex medication therapies. As example we use a cancer patient who has to follow chemotherapy during a period of time.
* John Doe has a malignant tumor in his throat. It has been treated with radiation, but John has to complete the therapy with a chemotherapy for 4 weeks.
* The therapy has to be followed strictly. In dosage as well as in timing.
* John has to follow the instructions on his mobile app to take the medication.
* The pharmacists enters the medication administration instructions in the EHR of the hospital on a weekly basis.
* John Doe has a personal page on the patient portal of the EHR. The phone app downloads the medication instructions and stores it locally in the memory of the phone. The app can function on it’s own, even if no internet is available.
* The app issues a signal every time John has to take his medication.
* John has to take a combination of 3 drugs, each with different dosage and timing. John confirms the medication which he has taken or not taken. Sometimes the side effects are so strong that John has thrown up all his food and medication. He reports this event in the app.
* When John is back at home he synchronizes his app through internet with the hospital EHR and the results are reported back to the hospital. This is done by uploading from the app to the EHR.
* The oncologist and the pharmacist evaluate John’s therapy and adjust the medication administration for the following week.

