1. **USE CASE**

|  |  |
| --- | --- |
| Name | Adverse Reaction to Medications  (observed event – adverse reaction event observed by healthcare provider) |
| Use Case # |  |
| Goal | The purpose of this use case is to support the documentation of allergy/intolerance and adverse reaction to medications in hospital clinical information systems/EMRS; and to support the generation and exchange of such information in a hospital discharge summary, generation of allergy/intolerance and adverse reaction information for transmission to patient’s nominated community pharmacist, and for updating patient’s PHR where appropriate |
| Primary Actor | *ED attending physician*  (Role: accessing EMR data; documenting medical history, clinical findings and allergy/intolerance and adverse reaction information; authoring of discharge summary; updating PHR contents where applicable) |
| Other Actors | *Patient* (subject of care and informant; updating PHR where appropriate)  *Hospital EMR/CIS* (clinical information and discharge summary repository; documentation and authoring applications)  *Primary care physician/GP* (patient nominated recipient of discharge summary information)  *Community pharmacist* (patient nominated recipient of medication allergy/intolerance and adverse reaction information)  *PHR* (clinical and patient entered information repository; query/retrieval and documentation applications) [in Australia, this will be PCEHR] |
| Assumptions | Hospital has EMR/CIS that:   * Provide access to Allergy/Intolerance and adverse reaction data * Support documentation of allergy/intolerance and adverse reaction details * Support generation and exchange of discharge summary/event summary containing allergy/intolerance and adverse reaction details; and adverse reactions details to be sent to nominated community pharmacist * Updating PHR with recent adverse reaction details |
| Pre-conditions | Patient presented to hospital with signs and symptoms of adverse reactions to medication(s).  The hospital uses electronic medical record systems supporting the documentation of the adverse reaction event, management and revision of allergy/intolerance list  Receiving systems (e.g. GP, community pharmacist) capable of receiving allergy/intolerance and adverse reaction information. |
| Triggers | A patient suffering from adverse reaction to prescribed medication presents at hospital/ED for treatment is assessed, diagnosed and treated for the adverse reaction. |
| Exclusions | Patient conditions which are not relevant to allergy/intolerance or adverse reaction topics |
| Basic Flow of Events | |
| 1. Patient presenting to ED with skin rash. 2. Patient provided information on medical and medication histories which reviews a recently added new medication by patient’s GP 3. ED attending physician accesses hospital EMRS or CIS for patient history/clinical information including allergy/intolerance and adverse reaction data. 4. Attending physician did not find any pre-existing allergy/intolerance information on this patient 5. Attending physician evaluated clinical data that can be accessed through EMRS and took full medical and medication histories 6. Attending physician evaluated patient condition, made diagnosed, order and gave appropriate treatment 7. Attending physician documented in EMRS patient’s clinical details including presenting problem, medical history, medication history, treatment and outcomes with creation/update of allergy/intolerance lists and medical alert on allergy/intolerance to medication 8. Attending physician generated discharge summary generated using hospital clinical information system or EMRS for transmission to patient nominated primary care physician/GP 9. Attending physician authored in EMRS allergy/intolerance and adverse reactions details for transmission to patient’s community pharmacist where applicable 10. Attending physician updated PHR with relevant clinical details where appropriate (as consented by patient) | |
| Alternative Flows | |
| Post-conditions | Updated EMRS record with allergy/intolerance list, adverse reactions and medical alerts  Hospital discharge summary with allergy/intolerance and adverse reaction information and transmitted to patient’s primary care physician/GP  Allergy/intolerance and adverse reaction information also transmitted patient specified pharmacy(ies) and PHR where applicable  PHR updated with relevant clinical information including allergy/intolerance and adverse reaction information |
| Notes | *Allergy/intolerance details captured and exchanged include*:  medication class, medication name, dose, datetime of medication start, datetime of adverse reaction onset, adverse reaction details, datetime of presentation to hospital/ED, datetime of treatment and details, datetime of resolution, updated allergy/Intolerance list, informant/information provider (patient), author (may also be the attending physician) |

1. **CLINICAL SCENARIOS/STORY**

A 60-year old man with extensive skin rash presents himself at the ED of a local hospital.

His *presenting complaints* include:

Rash started on the back and palm of his hands spreading quickly to the arms, neck, face and trunk.

Lesions consist of concentric rings of targetoid lesions with blistering appearing in some areas. Mucous membrane involvement also started with lesions appearing on his lips and inside his mouth.

*Medical History*:

Hypercholesterol aemia diagnosed 15 years ago

Hypertension for 10 years

Chronic atrial fibrillation diagnosed 4 years ago

Type II diabetes diagnosed 2 years ago

*Medications*:

Simvastatin 20 mg at night

Rampil 10 mg once daily

Warfarin 4 mg once daily

Metformin 1000 mg twice daily

Glicazide 40 mg once daily in the morning (commenced 6 weeks ago after medication review by his family doctor/GP)

He denied taking any other medications including OTC or other non prescribed medications.

*Allergy/Intolerance List/Alert*:

Hospital EMRS does not have pre-existing allergy/intolerance information on patient

*Physical Examinations*:

Blood pressure: 135/80 mmHG

Heart: rate = 86/min, no murmur, no added HS; ECG = AF, no ischaemia

Respiratory, CNS, Abdomen/GI, Genito-urinary: NAD

*Blood Tests*:

BSL = 5.8 mmol/L

U+E = normal

LFT = normal

*Diagnosis*:

Patient was diagnosed by the attending ED physician to have suffered from erythema multiforme.

Given that patient was prescribed and commenced Glicazide, it is probable that this was a case of hypersensitivity reaction sulphonylurea (Glicazide).

*Treatment*:

Patient was admitted into the medical unit of the hospital where his condition was managed by physician of general medicine clinical unit

The glicazide was stopped

Symptomatic treatment including oral antihistamines, analgesics, local skin care, and soothing mouthwashes

*Outcomes*:

The erythema multiforme resolved.

The adverse reaction to glicazide was documented in patient’s medical record.

The allergy/intolerance list was updated with inclusion of glicazide as a trigger to adverse reactions

On discharge, a discharge summary was generated with a summary of the reasons for encounter, treatment given, outcomes and revised allergy/intolerance list and clinical alert.

Discharge summary with allergy/intolerance list and adverse reaction information on glicazide was transmitted to patient’s primary care physician

Allergy/intolerance list and adverse reaction information on glicazide was also transmitted to patient specified pharmacy(ies) and PHR.

--------

**References:**

<http://books.google.com.au/books?id=-WOn3SqdkxgC&pg=PA122&lpg=PA122&dq=Gliclazide+and+erythema+multiforme&source=bl&ots=4KNCFPpv9J&sig=UijQzGwhd7jJ5e-r4fmh-yKhyos&hl=en&sa=X&ei=A6eMT7X5M_GuiQeYqrzHCQ&ved=0CFsQ6AEwBw#v=onepage&q=Gliclazide%20and%20erythema%20multiforme&f=false>

<http://www.rdehospital.nhs.uk/docs/patients/diabetes/RDE%20diabetes%20-%20type%202%20glycaemia%20-%20sulphonylureas.pdf>