

## Risk minimization activity / Risk minimization measure

Risk minimization measures are interventions intended to prevent or reduce the occurrence of adverse reactions associated with the exposure to a medicine, or to reduce their severity or impact on the patient should adverse reactions occur. Planning and implementing risk minimization measures and assessing their effectiveness are key elements of risk management.

No.	Product	Risk	Measures
1.	<b>Thalidomide (Thalidomide<sup>®</sup> Celgene)</b>	➤ Embryo-Fetal Toxicity.	-Restricted program
2.	<b>Lenalidomide (Revlimid<sup>®</sup> Hard Capsule)</b>	➤ Embryo-Fetal Toxicity.	- Restricted program
3.	<b>Lenalidomide (Sotira<sup>®</sup> Capsule)</b>	➤ Embryo-Fetal Toxicity.	- Restricted program
4.	<b>Isotretinoin (Roaccutane<sup>®</sup> Capsules)</b>	➤ Risk of teratogenicity.	- Educational material - Consent form
5.	<b>Isotretinoin (Curacne<sup>®</sup> Capsules)</b>	➤ Risk of teratogenicity.	- Educational material - Consent form
6.	<b>Isotretinoin (Xeractan<sup>®</sup> Capsules)</b>	➤ Risk of teratogenicity	- Educational material - Consent form
7.	<b>Isotretinoin (Isosupra<sup>®</sup> hard gelatin capsule)</b>	➤ Risk of teratogenicity	- Educational material - Consent form
8.	<b>Isotretinoin (Ruatine<sup>®</sup> capsule)</b>	➤ Risk of teratogenicity	- Educational material - Consent form
9.	<b>Mycophenolate mofetil (cellcept<sup>®</sup>)</b>	➤ Teratogenicity ➤ spontaneous abortions congenital malformations following exposure during pregnancy.	- Educational materials for HCPs & patients.
10.	<b>Mycophenolate mofetil (Myora<sup>®</sup>)</b>	➤ Teratogenicity	- Educational materials

		<ul style="list-style-type: none"> <li>- spontaneous abortions</li> <li>- congenital malformations following exposure during pregnancy.</li> </ul>	for HCPs & patients.
<b>11.</b>	<b>Mycophenolic acid (Myfortic<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Teratogenicity</li> <li>- spontaneous abortions</li> <li>- congenital malformations following exposure during pregnancy.</li> </ul>	- Educational materials for HCPs & patients.
<b>12.</b>	<b>Mycophenolate mofetil (Mofetab<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Teratogenicity</li> <li>- spontaneous abortions</li> <li>- congenital malformations following exposure during pregnancy.</li> </ul>	- Educational materials for HCPs & patients.
<b>13.</b>	<b>Infliximab (Remicade<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Serious infection/sepsis</li> <li>➤ BCG breakthrough infection and agranulocytosis in infants with in utero exposure to infliximab</li> </ul>	<ul style="list-style-type: none"> <li>- Infusion card,</li> <li>- Patient Reminder card.</li> </ul>
<b>14.</b>	<b>Infliximab (Remsima<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Risk of infection</li> <li>- Risk of Cancer</li> </ul>	<ul style="list-style-type: none"> <li>- Infusion card,</li> <li>- HCP safety sheet</li> </ul>
<b>15.</b>	<b>Rituximab (Mabthera<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Infections (including serious infections)</li> <li>Progressive Multifocal leukoencephalopathy</li> </ul>	<ul style="list-style-type: none"> <li>- Patient alert card (for RA and GPA/MPA (non-oncology) indications only).</li> <li>- Educational Material for healthcare professional and patients (for RA &amp; GPA/MPA (non-oncology) indications only).</li> </ul>
<b>16.</b>	<b>Rituximab (Mabthera<sup>®</sup> S.C)</b>	<ul style="list-style-type: none"> <li>- Off-label use of the Subcutaneous Formulation indication: (subcutaneous formulation – NHL/CLL only)</li> <li>- administration route error indication (subcutaneous formulation – NHL/CLL only)</li> </ul>	- Educational Material for Healthcare Professionals
<b>17.</b>	<b>Bendamustine Hydrochloride</b>		- Educational material

	<b>(Ribomustin<sup>®</sup>)</b>		
<b>18.</b>	<b>Zoledronic Acid (Aclasta<sup>®</sup>)</b>	- Osteonecrosis of the Jaw	- Educational material
<b>19.</b>	<b>Denosumab (Xgeva<sup>®</sup>)</b>	- Osteonecrosis of the Jaw	- Patient Card
<b>20.</b>	<b>Denosumab (Prolia<sup>®</sup>)</b>	- Osteonecrosis of the Jaw	- Patient Card
<b>21.</b>	<b>Zoledronic Acid (Zometa<sup>®</sup>)</b>	- Osteonecrosis of the Jaw	- Patient Card
<b>22.</b>	<b>Zoledronic Acid (Zoledronic Acid Hikma)</b>	- Osteonecrosis of the Jaw	- Patient Card
<b>23.</b>	<b>Zoledronic Acid (Zoldria<sup>®</sup>)</b>	- Osteonecrosis of the Jaw	- Patient Card
<b>24.</b>	<b>Ibandronic acid (Bonviva)</b>	- Osteonecrosis of the Jaw	-Patient Card
<b>25.</b>	<b>Valproate (depakine chrono)</b>	- malformations and developmental problems	- patient card - pregnancy prevention program
<b>26.</b>	<b>Valproate (convulex)</b>	- malformations and developmental problems	- patient card - pregnancy prevention program
<b>27.</b>	<b>Tocilizumab (Actemra)</b>	- Serious Infections - Complication of diverticulitis - Severe Hypersensitivity Reactions - Neutropenia -Neutropenia & the potential risk of infection - thrombocytopenia and potential risk of bleeding - liver enzyme and bilirubin elevations & potential risk of hepatotoxicity - Elevated lipid levels & potential risk of cardiovascular/cerebrovascular events -Malignancies - demyelinating disorders -MAS FOR sJIA	- Patient alert card, HCP Brochure, patient brochure, rheumatoid arthritis dosing guide
<b>28.</b>	<b>Trastuzumab (Herceptin)</b>	- Cardiac dysfunction	- DHPC
<b>29.</b>	<b>Ado-trastuzumab emtansine</b>	- Medication errors and confusion between Kadcylla &	- Provide medication

	<b>(Kadcyla<sup>®</sup>)</b>	Herceptin	and HCP education material to minimize medication errors & confusion between Kadcyla& Herceptin
<b>30.</b>	<b>methoxy polyethylene glycol-epoetin beta (Mircera<sup>®</sup>)</b>	- AEAB-mediated pure red cell aplasia	- Educational material on AEAB-mediated PRCA.
<b>31.</b>	<b>Erythropoietin Beta (Recormon<sup>®</sup>)</b>	- AEAB-mediated pure red cell aplasia	- Educational material on AEAB-mediated PRCA.
<b>32.</b>	<b>Erlotinib (Tarceva<sup>®</sup>)</b>	- Interstitial lung disease	- Educational material for prescribers to anticipate and manage ILD
<b>33.</b>	<b>Nivlumab (Opdivo<sup>®</sup>)</b>	- Immune-Mediated adverse reactions	- Immune-Mediated adverse reaction management guide - Patient Information guide - Patient alert card
<b>34.</b>	<b>Ipilimumab (Yervoy<sup>®</sup>)</b>	- Immune-Mediated adverse reactions	- Immune-Mediated adverse reaction management guide - Patient Information guide - Patient alert card
<b>35.</b>	<b>Atezolizumab(Tecentriq<sup>®</sup>)</b>	- Immune-related pneumonitis, - Immune-related hepatitis - Immune-related colitis - Immune-related hypothyroidism - Immune-related hyperthyroidism - Immune-related adrenal insufficiency	- Healthcare Provider Brochure

		<ul style="list-style-type: none"> <li>- Immune related hypophysitis</li> <li>- Immune-related type 1 diabetes mellitus</li> <li>- Immune-related neuropathies</li> <li>- Immune-related meningoencephalitis</li> <li>- Immune-related pancreatitis</li> <li>- Immune-related myocarditis</li> <li>- Immune-related infusion related reactions.</li> </ul>	
<b>36.</b>	<b>Methoxy Polyethylene Glycol-Epoetin Beta (Mircera<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- AEAB-mediated pure red cell aplasia</li> </ul>	<ul style="list-style-type: none"> <li>- Educational material on AEAB-mediated PRCA.</li> </ul>
<b>37.</b>	<b>Rivastigmine (Exelon<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Gastrointestinal symptoms (nausea, vomiting, diarrhoea)</li> <li>- Worsening of motor symptoms associated with Parkinson's disease</li> <li>- Pancreatitis</li> <li>- Cardiac arrhythmias</li> <li>- Exacerbations of asthma and chronic obstructive pulmonary disease (COPD)</li> <li>- Hypertension</li> <li>- Gastrointestinal ulceration, hemorrhage, and perforation</li> <li>- Seizures</li> <li>- Hallucinations</li> <li>- Syncope and loss of consciousness</li> <li>- Liver disorders</li> <li>- Application site skin reactions and irritations (patch formulation only)</li> <li>- Severe skin reactions (bullous reactions)</li> </ul>	<ul style="list-style-type: none"> <li>- Patient/caregiver reminder card</li> </ul>
<b>38.</b>	<b>Vemurafenib (Zelboraf<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Potentiation of Radiation Toxicity</li> </ul>	<ul style="list-style-type: none"> <li>- DHCP Dear HealthCare Professional Communication</li> </ul>
<b>39.</b>	<b>Daptomycin (Cubici<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Severe skeletal muscle toxicity</li> <li>- Reduced susceptibility to daptomycin in S. Aureus</li> </ul>	<ul style="list-style-type: none"> <li>- Daptomycin Dosage card for Physicians</li> </ul>

		<ul style="list-style-type: none"> <li>- Peripheral neuropathy</li> <li>- Severe hypersensitivity reactions (including pulmonary eosinophilia)</li> <li>- Eosinophilic pneumonia</li> </ul>	
40.	<b>Fingolimod (Gilenya<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Bradyarrhythmia (including conduction defects and bradycardia complicated by hypotension) occurring post-first dose</li> <li>- Hypertension</li> <li>- Liver transaminase elevation</li> <li>- Posterior reversible encephalopathy syndrome (PRES)</li> <li>- Macular edema</li> <li>- Infections, including opportunistic infections (PML, VZV, herpes viral - infections other than VZV, fungal infection)</li> <li>- Leukopenia and lymphopenia</li> <li>- Reproductive toxicity</li> <li>- Basal cell carcinoma</li> <li>- Hypersensitivity</li> </ul>	- Educational material for physicians and patients: physician's checklist and patient reminder card.
41.	<b>Fingolimod (Melior<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Bradyarrhythmia (including conduction defects and bradycardia complicated by hypotension) occurring post-first dose</li> <li>- Hypertension</li> <li>- Liver transaminase elevation</li> <li>- Posterior reversible encephalopathy syndrome (PRES)</li> <li>- Macular edema</li> <li>- Infections, including opportunistic infections (PML, VZV, herpes viral - infections other than VZV, fungal infection)</li> <li>- Leukopenia and lymphopenia</li> <li>- Reproductive toxicity</li> <li>- Basal cell carcinoma</li> <li>- Hypersensitivity</li> </ul>	- Educational material for physicians and patients: physician's checklist and patient reminder card.
42.	<b>Ranibizumab(Lucentis<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Infectious</li> <li>- Endophthalmitis</li> <li>- Traumatic</li> <li>- Cataract</li> <li>- Intraocular inflammation</li> <li>- Intraocular pressure increased</li> <li>- Vitreous hemorrhage</li> </ul>	- Educational programme including: Healthcare professional educational plan Educational plan for patients. Healthcare professional

			educational plan for pre-filled syringe
<b>43.</b>	<b>Nilotinib (Tasigna)</b>	<ul style="list-style-type: none"> <li>- QT prolongation</li> <li>- Myelosuppression</li> <li>- Cardiovascular events</li> <li>- Significant bleeding</li> <li>- Severe infections</li> <li>- Hepatotoxicity</li> <li>- Pancreatitis, lipase and amylase elevations</li> <li>- Fluid retention</li> <li>- Blood glucose increased</li> <li>- Blood cholesterol increased</li> <li>- Use in patients with hepatic impairment</li> <li>- Interaction with strong CYP3A4 inhibitors</li> </ul>	- Patient / HCPs educational materials.
<b>44.</b>	<b>Bosentan Monohydrate (Tracleer<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Abnormal liver tests (Liver toxicity)</li> <li>➤ Teratogenicity (birth defects)</li> </ul>	- Physician Booklet. - Controlled accesses program
<b>45.</b>	<b>Agomelatine (Valdoxan<sup>®</sup>)</b>	- liver Function (hepatotoxicity)	- patient booklet -Doctor guide
<b>46.</b>	<b>Menotrophin (Humog<sup>®</sup>)</b>	- Ovarian Hyperstimulation Syndrome (OHSS)	- Doctor guide
<b>47.</b>	<b>Pioglitazone/glimepride(Duetact<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- congestive heart failure</li> <li>- not recommended in patients with symptomatic heart failure</li> <li>- d NYHA Class III or IV heart failure is Contraindicated</li> </ul>	- prescriber guide
<b>48.</b>	<b>Misoprestol (Misodel<sup>®</sup>)</b>	- uterine tachysystole	- prescriber guide
<b>49.</b>	<b>Acitretin (Neotigasone<sup>®</sup>)</b>	- Risk of malformation and formation of a compound (etretinate), which may be harmful to an unborn child	- pregnancy prevention program (HCP , patient) educational material
<b>50.</b>	<b>Bendamustine (Bendavival<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>- Myelosuppression</li> <li>- Infections</li> <li>- Anaphylaxis and Infusion Reactions</li> <li>- Tumor Lysis Syndrome</li> <li>- Skin Reactions</li> <li>- Hepatotoxicity</li> <li>- Extravasation Injury</li> </ul>	- physician guide - pharmacist guide

		- Embryo-fetal toxicity	
51.	<b>Rivastigmine (Rivaxel<sup>®</sup>)</b>	Gastrointestinal symptoms (nausea, vomiting, diarrhoea) - Worsening of motor symptoms associated with Parkinson's disease - Pancreatitis - Cardiac arrhythmias - Exacerbations of asthma and chronic obstructive pulmonary disease (COPD) - Hypertension - Gastrointestinal ulceration, hemorrhage, and perforation - Seizures - Hallucinations - Syncope and loss of consciousness - Liver disorders - Application site skin reactions and irritations (patch formulation only) - Severe skin reactions (bullous reactions)	- patient card
52.	<b>Ulipristal (Esmya<sup>®</sup>)</b>	➤ acute liver injury	Patient card
53.	<b>dolutegravir / abacavir / lamivudine (Triumeq<sup>®</sup>)</b>	Allergic reactions with dolutegravir	DHCP
54.	<b>Dapagliflozin (Forxiga)</b>	Rare occurrences of a serious infection of the genital area (Fourniers gangrene)	DHCP
55.	<b>Dapagliflozin (Divinus)</b>	➤ Rare occurrences of a serious infection of the genital area (Fourniers gangrene)	DHCP
56.	<b>Empagliflozin (Synjardy tablet, Jaradience tablet, Glyxambi tablet)</b>	➤ Rare occurrences of a serious infection of the genital area (Fourniers gangrene)	DHCP
57.	<b>Daratumumab (Darzalex<sup>®</sup>)</b>	➤ Interference for blood typing (minor antigen) (Positive Indirect Coombs' test)	- Patient card - Educational materials for HCPs to advice regarding the risk and solutions of interference



			for blood typing
<b>58.</b>	<b>Adalimumab (Humira®)</b>	<ul style="list-style-type: none"> <li>➤ Important safety information about the drug</li> </ul>	<ul style="list-style-type: none"> <li>-Adult Patient reminder card</li> <li>- Pediatric Patient reminder card</li> <li>- Safety monograph</li> <li>- TB brochure</li> </ul>
<b>59.</b>	<b>Adalimumab (Amgevita®)</b>	<ul style="list-style-type: none"> <li>➤ Important safety information about the drug</li> </ul>	<ul style="list-style-type: none"> <li>-Adult Patient reminder card</li> <li>- Pediatric Patient reminder card</li> <li>- Safety monograph</li> <li>- TB brochure</li> </ul>
<b>60.</b>	<b>Tofacitinib (Xeljanz®)</b>	<ul style="list-style-type: none"> <li>➤ Prescriber brochure to provide guidance on assessments prior to prescribing, management, monitoring and safety considerations related to the Risk Management Plan.</li> <li>➤ Patient alert card to help patients understand the risks associated with XELJANZ, and remind them to seek immediate medical attention if they experience any listed signs and symptoms.</li> </ul>	<ul style="list-style-type: none"> <li>-patient alert card</li> <li>-Healthcare professional Brochure</li> </ul>
<b>61.</b>	<b>Valproic acid, sodium valproate (Pravia CR)</b>	<ul style="list-style-type: none"> <li>➤ malformations and developmental problems</li> </ul>	- patient card
<b>62.</b>	<b>Insulin Degludec (Tresiba®)</b>	<ul style="list-style-type: none"> <li>➤ Direct Healthcare Professional Communication for Tresiba® 100U and 200U FlexTouch® correct use of Tresiba® (insulin degludec) to minimise medication errors</li> </ul>	-DHCP
<b>63.</b>	<b>Gadoteric acid (clariscan®)</b>	<ul style="list-style-type: none"> <li>➤ Nephrogenic Systemic Fibrosis (NSF)</li> <li>➤ Anaphylactoid and other serious hypersensitivity reactions</li> <li>➤ Gadolinium is retained for months or years in brain, bone, and other organs.</li> <li>➤ Acute renal failure</li> </ul>	-medication guide

<b>64.</b>	<b>Gadodiamide (omniscan<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Nephrogenic Systemic Fibrosis (NSF)</li> <li>➤ Anaphylactoid and other serious hypersensitivity reactions</li> <li>➤ Gadolinium is retained for months or years in brain, bone, and other organs.</li> <li>➤ Acute renal failure</li> </ul>	-medication guide
<b>65.</b>	<b>Golimumab (Simponi<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Serious infections</li> <li>➤ Breakthrough infection after administration of live vaccines in infants exposed to golimumab in utero</li> </ul>	- Patient Reminder card
<b>66.</b>	<b>Methylphenidate hydrochloride (Concerta<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Hypertension</li> <li>➤ Tachycardia</li> <li>➤ Hallucinations(auditory, skin sensation, visual disturbance)</li> <li>➤ Psychosis/Mania, and other safety concerns</li> </ul>	-HCPs Educational Materials
<b>67.</b>	<b>Natalizumab (Tysabri<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Safety information for patients with multiple sclerosis receiving Tysabri therapy</li> </ul>	<ul style="list-style-type: none"> <li>- Patient Alert card</li> <li>- Physician information and management guidelines</li> </ul>
<b>68.</b>	<b>Bortezomib (velcade<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Administration error</li> </ul>	- Dosing material
<b>69.</b>	<b>Selexipag (Uptravi<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Medication error</li> </ul>	<ul style="list-style-type: none"> <li>- Controlled Access System</li> <li>- Patient titration guide provided to the patient</li> </ul>
<b>70.</b>	<b>Dapoxetine (Priligy<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Syncope</li> <li>➤ Appropriate use</li> </ul>	<ul style="list-style-type: none"> <li>- Patient guide</li> <li>- HCP guide</li> </ul>
<b>71.</b>	<b>Dapoxetine (tapomen<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Syncope</li> <li>➤ Appropriate use</li> </ul>	<ul style="list-style-type: none"> <li>- Patient guide</li> <li>- HCP guide</li> </ul>
<b>72.</b>	<b>Tenofovir (Vemlidy<sup>®</sup>, Hivera<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Renal toxicity</li> </ul>	- HCP guide

73.	<b>Cladribine (Litak<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Severe (Grade <math>\geq</math> 3) lymphopenia</li> <li>➤ Herpes zoster infections</li> <li>➤ Tuberculosis</li> </ul>	<ul style="list-style-type: none"> <li>- HCP guide</li> <li>- Patient educational material</li> </ul>
74.	<b>Pioglitazone/ alogliptin (Incrasyn<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ To address the safety concerns of the medicine</li> </ul>	<ul style="list-style-type: none"> <li>- prescriber's guide</li> </ul>
75.	<b>Rivaroxaban (Xarelto<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ to minimize the risk of bleeding</li> </ul>	<ul style="list-style-type: none"> <li>- Prescriber guide</li> <li>- Patient alert card</li> </ul>
76.	<b>Voriconazole (Vecanzol<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ Photo toxicity</li> <li>➤ Squamous cell carcinoma</li> <li>➤ Hepatic toxicity</li> <li>➤ Liver toxicity</li> </ul>	<ul style="list-style-type: none"> <li>- HCP brochour</li> <li>- HCP checklist</li> <li>- Patient alert card</li> </ul>
77.	<b>Valproic Acid, Sodium Valproate (Pravia<sup>®</sup>)</b>	<ul style="list-style-type: none"> <li>➤ malformations and developmental problems</li> </ul>	<ul style="list-style-type: none"> <li>- Patient card</li> <li>- Pregnancy prevention program</li> </ul>
78.	<b>Methotrexate (Methotrexate Ebewe<sup>®</sup>) Tablet</b>	<ul style="list-style-type: none"> <li>➤ To avoid medication errors</li> </ul>	<ul style="list-style-type: none"> <li>- Direct Healthcare Professional Communication DHPC</li> <li>- Guide for Healthcare professionals</li> <li>- Patient Card</li> </ul>