

National list of essential medicinal products

The French Health Minister and its Inter-ministerial Delegate for Avian Influenza (DILGA) requested the French Agency for the Safety of Health Products (Afssaps) to draft a list of medicinal products to be recommended as “essential” in the event of an avian influenza pandemic declared at a national level.

This request falls within the scope of the French Governmental Preparedness Plan. The goal of establishing such a list is to identify the medicines for which the supply and distribution on the national territory should be maintained at high priority level in the event of a major health crisis.

Within this overall Plan of Preparedness Measures, the drafting of such a list represents the first step, the subsequent steps consisting of the set-up and maintenance of stocks of the medicinal products identified as essential, and their supply thereof on a national level.

Economic considerations like drug price or cost-effectiveness of medicinal product were not taken into consideration in view of specific context of supposed health emergency.

Criteria were defined in order to facilitate the selection task and reduce the number of essential medicine:

- Categorisation of the medicinal products as either "essential" or "necessary" based on the impact on health of their lack at short or longer term
- Inclusion of two different pills stock outage timeframes in national hospitals
 - o from 0 to 14 days¹
 - o from 15 days to 3 months

The absence of one medicinal product from the list should not lead to the over interpretation that this medicine is not of therapeutic interest either for the *population* or at *individual patient level*.

This model list is to provide standardized *information* on the *medicinal products for which supply should be guaranteed as a matter of priority in a health crisis context*. This list should not be regarded or used for any other purposes or outside this specific circumstance.

The model list was finalized at the beginning of 2008 and will be updated as need.

¹ Average timeframe of drugs stocks in French Hospitals

INFORMATION NOTE

NATIONAL RECOMMENDATIONS ON THE ESSENTIAL MEDICINAL PRODUCTS IN THE CONTEXT OF AN PANDEMIC INFLUENZA - Principles for the selection of medicinal products –

First Model List - January 2008 -

General context

The French Health Minister and its Inter-ministerial Delegate for Avian Influenza (DILGA) requested the French Agency for the Safety of Health Products (Afssaps) to draft a list of medicinal products to be recommended as “essential” in the event of an avian influenza pandemic declared at a national level.

This request falls within the scope of the French Governmental Preparedness Plan. The goal of establishing such a list is to identify the medicines for which the supply and distribution on the national territory should be maintained at high priority level in the event of a major health crisis. Within this overall Plan of Preparedness Measures, the drafting of such a list represents the first step, the subsequent steps consisting of the set-up and maintenance of stocks of the medicinal products identified as essential, and their supply thereof on a national level.

Procedure for drafting a national list of essential medicinal products in the context of an Influenza Pandemic

The purpose of establishing a list of essential medicines is to identify the medicinal products for which supply must be guaranteed as a matter of priority in the event of national and/or international disorganisation of the industrial and manufacturing framework following the outbreak of an influenza pandemic.

In the worst scenario, there is a possibility that the first, second or even third wave of a pandemic may affect the functioning of industries following the illness of some members of personnel and/or following decisions by the national authorities to restrict trade, travel, etc... This situation could impact on the importation, manufacturing, and/ or procurement of health products.

Therefore, the goal has been to draft a list of medicinal products for which it would be critical to support a specific supply program for the whole population on the national territory.

Based on these considerations, two categories of medicinal products have been identified:

◇ The medicinal products ***necessary for the health care of patients suffering from influenza, with or without complications***. This first list has already been drafted and is available on specific request.

◇ The essential medicinal products ***necessary to ensure a health coverage of the whole population*** in case of restriction of goods spread at the national level.

The purpose of the present initiative was to elaborate a national “model list” for the second category of medicinal products. This work has been validated by the French National Committee of Medicinal Products Marketing Authorisation in January 2008.

Warning

This list is to be regarded as ***guidance*** for pharmaceutical industry, participants of the supply chain as well as health professionals. This list is not intended for regulatory, legal or reimbursement purposes.

This model list is to provide standardized ***information*** on the ***medicinal products for which supply should be guaranteed as a matter of priority in a health crisis context***. This list should not be regarded or used for any other purposes or outside this specific circumstance.

The absence of one medicinal product from the list should not lead to the over interpretation that this medicine is not of therapeutic interest either for the ***population*** or at ***individual patient level***.

It is worth mentioning that the medicinal products not classified as “essential / necessary” in this list may still be “useful” for patients in a standard health context or for an individual subject.

The medicinal products selected are those which have been considered as a priority as they are used for ***treating serious diseases***, or ***specific fragile patient populations*** (e.g. children), or deemed necessary for healthcare considerations (e.g. vaccines).

Principles and Methodology

1.1. General Principles

The approach was to draft a list of medicinal products necessary to ensure an appropriate level of health care management of the whole population in case of a national health emergency. The most critical clinical conditions to be covered in priority were identified as follows:

- Life-threatening conditions at immediate (within hours) or short-term (within few days)
- Severe conditions for which a lack of product or discontinuation of drug supply would lead to increased risk of mortality or disability at short or medium term
- Severe chronic conditions for which a drug supply discontinuation could lead to worsening of the disease prognosis in term of mortality or significant morbidity at medium or long term
- Chronic conditions for which disruption of the treatment could lead to severe flares or recurrence of the disease
- Conditions where disruptions of the product supply would lead to behaviours "at risk" for the patient it-self or the general population
- Conditions at high risk of leading to permanent disabilities without any appropriate treatment
- Conditions or symptoms for which lack of product would lead to an increased rate of clinic visits, hospitalisations

After a first round of work, these criteria have been fine-tuned in order to facilitate the selection task and reduce the number of essential medicine:

- Categorisation of the medicinal products as either "essential" or "necessary" based on the impact on health of their lack at short or longer term
- Inclusion of two different pills stock outage timeframes in national hospitals
 - o from 0 to 14 days¹
 - o from 15 days to 3 months

☞ The Model List of Essential Medicines by the WHO (15th edition, 2007) was not used as a reference source. This present work was deemed to be considered as a different initiative setting up in a specific context of public health management. Indeed, the WHO Model list of essential medicines is defined as follows:

"The core list presents a list of minimum medicine needs for a basic health care system, listing the most efficacious, safe and cost - effective medicines for priority conditions. Priority conditions are selected on the basis of current and estimated future public health relevance, and potential for safe and cost - effective treatment."

"The complementary list presents essential medicines for priority diseases, for which specialized diagnostic or monitoring facilities, and/or specialist medical care, and/or specialist training are needed. In case of doubt medicines may also be listed as complementary on the basis of consistent higher costs or less attractive cost - effectiveness in a variety of settings."

☞ Economic considerations like drug price or cost-effectiveness of medicinal product were not taken into consideration in view of specific context of supposed health emergency.

☞ The legal MA position of the product as a princeps or a generic product was not a selection criterion to be taken into consideration.

☞ The blood products and cell or tissue therapies were not on the scope of this work initiative and were therefore excluding from this drafting list.

☞ The medicinal products used to treat avian influenza or their complications fall in the category of essential medicinal products and have been listed separately.

¹ Average timeframe of drugs stocks in French Hospitals

1.2. Methodology

- **Selection of wording for the classification:**

- ◇ Classification of medicines as "Essential":

The medicinal products for which an interruption of drug supply *during a period of less than 15 days* would result in an **increased risk of mortality/morbidity** in the general population have been classified as "essential".

- ◇ Classification of medicines as "Necessary":

The medicinal products for which an interruption in supply for 15 days to 3 months would result in an increased **risk of mortality/morbidity** in the general population have been classified as "necessary".

- **Other criteria for selection:**

The basic underlying criteria for the categorisation of medicinal products were their impact on public health caused by an interruption in supply taking into account the following criteria:

- ◇ impact on **direct or indirect** mortality
- ◇ impact on direct or indirect on **notable morbidity**

For determining the criteria for "notable morbidity", the main grounds more specifically taken into account were the following:

- ◇ the risk of **permanent disability**
- ◇ the risk of **aggravation of the disease symptoms** (e.g. increased rate of epilepsy crisis)
- ◇ the risk of **worsening of the prognosis in terms of mortality or morbidity**
- ◇ the need for **surgery** procedure if the medicinal product treatment was not available
- ◇ the need for **hospitalisation** if the medicinal product treatment was not available

- **Other considerations for the selection :**

- ◇ It has been agreed upfront that the selection will not to limit the choice to only one single product per therapeutic area or therapeutic sub-class. This consideration was aiming to prevent the transfer of all prescriptions to only one single medicinal product jeopardising the amount of the total pill stock left available. Without the figures of the pills volumes and the duration of stocks to be required, the availability of only one essential product could be insufficient for the entire population to be treated. As a general recommendation, the number of selected products was limited to 2-3 medicines within the same therapeutic sub-class.

- ◇ It has been recommended to select one therapeutic drug sub-classes rather than an entire drug classes when possible and relevant in order to limit the final number of essential medicinal products to be selected.

- ◇ In the event of uncertainty relating to the "critical / necessary" criterion for a medicinal product, it has been recommended to classify the product according to the highest interest of the patients by default.

- ◇ For medicinal products used for treating several different conditions, it has been recommended to classify the medicinal product according to the most severe condition.

- ◇ Amongst the several medicinal products that could be selected, it has been recommended to chose the one(s) that could be used for several different therapeutic indications rather than the one(s) authorized for only for one single indication.

- ◇ It has been recommended to chose preferably the product(s) with a specific paediatric indication and/or a paediatric-adapted formulation when several products of the sale therapeutic sub-class were selected.

- ◇ It has been recommended to select medicines formulated as single active compounds rather than fixed dose combinations, unless justified.

1.3. Procedures

This work has been carried out with external expert sub-groups for each therapeutic area and has been validated by the French National Committee of Medicinal Products Marketing Authorisation in January 2008.

The list has been double crossed with the following lists of medicines:

- WHO Model list of Essential Medicines, 2007
- List of paediatric medicinal products (2005), *Paediatric Experts Group- EMEA*

It was acknowledged that the selection of the essential medicines should be based as much as possible on valid scientific evidence. However, in the absence of adequate or comparative scientific evidence on current treatment of critical diseases or in specific sub-groups of patients like the paediatric population, the working committees could chose to make recommendations based on expert opinion and experience.

The initial version of the report was reviewed by the French associations of the pharmaceutical industry representatives for commenting. The comments were reviewed by the working groups before finalising the final report of the list.

2. Report of the selection

2.1. Overall results

In total, approximately 350 medicinal products were selected as "essential", and about 100 additional medicines reported as "necessary". The medicinal products are reported by therapeutic areas *according to the ATC classification*, and using the medicinal product *INNs*.

For some therapeutic sub-classes, it was not possible to select only 1 or 2-3 products/INN based on the predefined criteria. In that case, the entire sub-class has been selected and is highlighted in italics ⇒ *In that case, one can recommend that at least 1 to 3 medicinal products from the sub-class should be made available.*

The specific indication for which the medicinal product was selected as essential was generally noted in the "Comments" section of the list. The preferred pharmaceutical formulation, strength or preferred route of administration was also mentioned if of particular relevance to be taken into account.

For some product therapeutic sub-classes (e.g. cardiology, endocrinology or diabetology), the entire sub-class was selected. In that case, it was counted as a single medicinal product in the calculation of products retained in the final list (e.g. for insulin, this product was counted as a single product although there are 40 different INNs authorized in the same therapeutic sub-class).

2.2. Specific selection of authorized medicinal products

The herbal medicinal products and the homeopathic medicinal products were excluded from this list of essential/necessary medicines. The medicinal products with the regulatory status of without prescription were also not selected.

All the medicinal products for the following therapeutic area were considered to be critical :

- Intensive care products
- Anaesthesia medicinal products
- Medicinal products for bone marrow or organ transplants
- Anti-HIV medicinal products
- All blood-derived products were selected as essential products, except albumin classified as a necessary product.
- Anti-Infective products :
Vaccines were included in the ATC medicinal product category under "Infectious disease".
Only the vaccines that are to be administered in the case of "post-contact" prevention were selected as "essential" while the others were classified as "necessary".
- Oncology products :

Only the products required to treat malignancies impacted the ***immediate survival prognosis*** (e.g. ALL, compressive neurological tumour, etc.) or those requiring a daily administration, were selected as "essential". The other medicinal products were classified as "necessary", particularly in the view of the treatment scheme with administration intervals of a few weeks.

□ Endocrinology:

Oestro-progestative medicinal products used for contraception or as abortion medication were considered "essential" for national public health considerations.

2.3. Specific considerations for non marketing authorized products

- **Products covered by a national Compassionate Use Authorisation :**

Approximately two hundred medicinal products are currently covered by a national Compassionate Use Authorisation (at individual or cohort authorisation level) by the French Agency. These products were regarded as essential only for severe clinical conditions with no alternative therapeutics. These products are not listed in the current model list due the restricted national procurement process and the continuous changes in those listed products over time.

Conclusion

The implementation of such concept is intended to be flexible and adaptable to the specific circumstances by the national authorities, the health professionals and the manufacturers and pharmaceutical industry representatives.

The working committees have recommended revising and updating this model list at regular intervals of approximately two years, and also following occurrence of any health crisis.

This model list is intended as a guide for the national institutions and the pharmaceutical industry to drive the prioritisation of medicinal products supply and procurement, and is not designed as an international standard.

The concept of essential medicines in the context of a public health emergency has to be decided at a national level in each country. The criteria for product selection are to be defined with regard to national public health relevance and considerations which remain a national responsibility and decision. However, this kind of approach could also be relevant and helpful to some extent at an international level, and could be regarded as an illustration of a possible public health management measure of a preparedness plan for global health emergency.

LIST OF ESSENTIAL MEDICINAL PRODUCTS IN THE CONTEXT OF A PANDEMIC EMERGENCY (French National Recommendations)

ANNEX 1: First Model LIST – January 2008

Regarding the classification reporting system, the selected medicinal products are presented by therapeutic area and ATC codes, and specified by using their INN.

For some therapeutic classes, it was not possible to select one single DCI amongst the other medicinal products within the same therapeutic sub-class. In this case, the entire ATC sub-class was selected and is highlighted *in italics*.

In the "comments" sections, the specific therapeutic indication for which the medicinal product was selected in priority is generally specified.

Medicinal products to be selected for several indications may be indicated several times with the mention of its main indication and area.

The preferred pharmaceutical form, strength or the route of administration may also be mentioned when considered relevant for its selection.

When the medicinal product has a specific paediatric use even sometimes off label, the term "paediatric usage" has been added for explaining its selection and therapeutic use.

THERAPEUTIC AREA	COMMENTS
ALLERGOLOGY	
Antiallergics and medicines used in Anaphylaxis	
ESSENTIAL	
<ul style="list-style-type: none"> • Epinephrine (adrenaline) 	IM and IV injectable forms (1 ml= 1mg in IV) Formulation for self-injection for emergency treatment (<i>including dosage for children</i>)
<ul style="list-style-type: none"> • Hydroxyzine 	Oral and injection route <i>Form(s) for paediatric usage</i> (see also ANAESTHETICS section)
<ul style="list-style-type: none"> • Corticosteroids 	See ANTI-INFLAMMATORY section
NECESSARY	
<ul style="list-style-type: none"> • Cetirizine 	Oral route <i>Form(s) for paediatric usage</i>

ANAESTHETICS and INTENSIVE CARE PRODUCTS	
ESSENTIAL	
Skin surface/mucosal anaesthetics	
<ul style="list-style-type: none"> Lidocaine+ prilocaine 	formulations for local application <i>Form(s) for paediatric use</i>
Local or regional anaesthetics	
<ul style="list-style-type: none"> Lidocaine 	Solution for injection for infiltration <i>Paediatric use</i>
<ul style="list-style-type: none"> Procaine hydrochloride 	Solution for injection / for infiltration
<ul style="list-style-type: none"> Ropivacaine 	Peripheral, epidural and spinal block <i>Form(s) for paediatric use</i>
<ul style="list-style-type: none"> Bupivacaine 	Peripheral, epidural block <i>Form(s) for paediatric use</i>
Preoperative medicines and Sedation	
<ul style="list-style-type: none"> Clorazepate 	Injectable forms (See NEUROLOGY section for oral formulation)
<ul style="list-style-type: none"> Diazepam 	Injectable forms (See NEUROLOGY section for oral formulation)
<ul style="list-style-type: none"> Flunitrazepam 	Injectable form <i>Form(s) for paediatric use</i>
<ul style="list-style-type: none"> Midazolam 	Injectable form
<ul style="list-style-type: none"> Phenothiazine 	Oral form (oral solution) <i>Form(s) for paediatric use</i>
General anaesthetics and Inhalation anaesthetics	
<ul style="list-style-type: none"> Etomidate 	Injectable form <i>Form(s) for paediatric use</i>
<ul style="list-style-type: none"> Propofol 	Injectable form <i>Form(s) for paediatric use</i>
<ul style="list-style-type: none"> Ketamine 	Injectable form <i>Form(s) for paediatric use</i>
<ul style="list-style-type: none"> Thiopental 	Injectable form <i>Paediatric use</i>
<ul style="list-style-type: none"> Chloral hydrate 	<i>Paediatric use</i>
<ul style="list-style-type: none"> Sevoflurane 	
<ul style="list-style-type: none"> Oxygen 	
<ul style="list-style-type: none"> equimolar oxygen and nitrous oxide mixture 	
<ul style="list-style-type: none"> Nitrous oxide 	
Morphine analgesics	
<ul style="list-style-type: none"> Alfentanil 	
<ul style="list-style-type: none"> Fentanyl 	
<ul style="list-style-type: none"> Remifentanyl 	
<ul style="list-style-type: none"> Sufentanil 	
Curare-like agents, injectable forms	
<ul style="list-style-type: none"> Suxamethonium 	
<ul style="list-style-type: none"> Atracurium 	
<ul style="list-style-type: none"> Cisatracurium 	
<ul style="list-style-type: none"> Mivacurium 	
<ul style="list-style-type: none"> Pancuronium 	
<ul style="list-style-type: none"> Rocuronium 	

• Vecuronium	
Postoperative treatment: anti-emetic	
• Ondansetron	Injectable form <i>Paediatric use</i>
Sympathomimetics	
• Ephedrine	
• Epinephrine	
• Dopamine	
• Isoprenaline	
• Dobutamine	
Atropine	
• Atropine	Injectable forms <i>Paediatric use</i>
Solutions / nutrition	
• Sodium bicarbonate	isotonic and hypertonic solutions
• Sodium chloride	isotonic and hypertonic solutions
• Calcium gluconate	
• Phosphorus	
• Potassium chloride	
• Glucose	
• Amino acids	
• Lipids	
• Water for injection	
• Sodium lactate compound solution	
• Multi-vitamins	Injectable forms <i>Paediatric use</i>
• Mannitol	<i>See OPH section</i> <i>Paediatric use</i>

ANALGESICS / ANTIPYRETICS / ANTISPASMODICS	
ESSENTIAL	
Non-opiate analgesics	
• Paracetamol	Oral and IV forms <i>Form(s) for paediatric use</i>
• Acetylsalicylic acid	Oral and IV forms <i>Form(s) for paediatric use</i>
Opiate analgesics	
• Tramadol	Immediate-action oral form(s) <i>Form(s) for paediatric use</i>
	Sustained-action oral form(s) <i>Form(s) for paediatric use</i>
	Injectable form(s) <i>Form(s) for paediatric use</i>
• Morphine	Immediate-action oral form(s) <i>(Paediatric use)</i>
	Prolonged- action oral form(s) <i>(Paediatric use)</i>
	Injectable form(s) <i>(Paediatric use)</i>
• Nalbuphine	Injectable forms <i>(Paediatric use)</i>
• Codeine	including Paediatric formulations
ANTI-INFLAMMATORY DRUGS	
ESSENTIAL	
Steroidal anti-inflammatory drugs	
• Dexamethasone	Oral and injectable forms (immediate action) <i>Forms for paediatric use</i>
• Betamethasone	<i>Forms for paediatric use</i>
• Methylprednisolone	Injectable and oral form <i>Forms for paediatric use</i>
• Prednisolone	Oral form
Non-steroidal anti-inflammatory drugs	
• Ibuprofen	Oral and injectable forms <i>Form(s) for paediatric use</i>
• Naproxen	Oral forms <i>Form(s) for paediatric use</i>
• Diclofenac	Oral and injectable forms <i>Form(s) for paediatric use</i>

CARDIOLOGY / ANGIOLOGY	
ESSENTIAL	
Beta-Blockers: oral and injectable forms	
• Atenolol	
• Acebutolol	<i>Paediatric usage (including tachyarrhythmia)</i>
• Metoprolol	Tachyarrhythmia <i>Paediatric usage</i>
• Labetalol	<i>Paediatric usage</i>
• Propranolol	(other indications: MIGRAINE) <i>Paediatric usage</i>
Calcium Chanel Blockers: oral and injectable forms	
• Amlodipine	
• Nifedipine	
• Nicardipine	Immediate and sustained-action forms <i>Paediatric usage</i>
• Verapamil	
• Diltiazem	
Conversion enzyme inhibitors	
• Captopril	
• Enalapril	
Antihypertensives: Others	
• Clonidine	Oral and injectable forms
• Prazosine	Oral form
• Methyldopa	Oral form, pregnancy-induced hypertension
• Hydralazine	Oral and injectable forms pregnancy-induced hypertension <i>(paediatric usage)</i>
• Sodium nitroprusside	injectable form
HEART FAILURE	
B-Blockers, oral route: See ANTIHYPERTENSIVE section	
Calcium inhibitors, oral route: See ANTIHYPERTENSIVE section	
• Trinitrin	Sublingual and spray route Sustained-action oral form Transdermal form Injectable form
• Isosorbide dinitrate	Oral and injectable forms
• Heparin sodium	
• Digoxin	Oral and injectable route <i>Paediatric usage</i>
• Carvedilol	Oral form <i>Paediatric usage</i>
• Milrinone	Injectable form <i>Paediatric usage</i>
• Dopexamine	<i>Paediatric usage</i>

ANTIARRHYTHMICS	
• Sotalol	Oral and injectable forms <i>Paediatric usage</i>
• Nadolol	Oral forms <i>Paediatric usage</i>
• Amiodarone	Oral and injectable forms <i>Paediatric usage</i>
• Flecainide	Oral and injectable forms <i>Paediatric usage</i>
PROSTAGLANDIN DERIVATIVES	
• Epoprostenol	neonatology
• Alprostadil	neonatology
OTHERS	
• IV Ibuprofen	neonatology
NECESSARY	
• Hydroquinidine	
• Disopyramide	Oral and injectable forms
• Adenosine ATP	Injectable form
• Losartan	
• Pravastatin	
• Simvastatin	

ONCOLOGY	
ESSENTIAL	
Antineoplastic agents: Oral and injectable form	
• Actinomycin D	Injectable form <i>Paediatric use (sarcoma)</i>
• Bleomycin	Injectable form <i>Paediatric use</i>
• Carmustine	Injectable form <i>Paediatric use / brain tumours</i>
• Cisplatin	Injectable form <i>Paediatric use</i>
• Cytarabine	Injectable form <i>Paediatric use / ALL AML</i>
• Cyclophosphamide	Injectable (and oral) form <i>Paediatric use (AL, neuroblastoma)</i>
• Dacarbazine	Injectable form <i>Paediatric use /melanoma</i>
• Daunorubicin	Injectable form <i>Paediatric use</i>
• Doxorubicin	Injectable form <i>Paediatric use</i>
• Ifosfamid	Injectable form <i>Paediatric use (AL)</i>
• Methotrexate	Oral and injectable forms <i>Paediatric use /ALL</i>
• Melphalan	Injectable form <i>Paediatric use (AL, neuroblastoma)</i>
• Mercaptopurine	Oral form <i>Paediatric use / ALL</i>
• Temozolomide	Injectable form <i>Paediatric use / glioblastoma, astrocyoma</i>
• Thiotepa	Injectable form <i>Paediatric use / BMT</i>
• Thioguanine	Oral form <i>Paediatric use / ALL AML</i>
• Vincristine	Injectable form <i>Paediatric use / ALL AML</i>
• Vinblastine	Injectable form <i>Paediatric use / brain tumours</i>
• Vindesine	Injectable forms <i>Paediatric use ALL</i>
• Etoposide	Injectable form <i>Paediatric use</i>
• L-asparaginase	Injectable form <i>Paediatric use / ALL</i>
Others	
• Rituximab	
• Trastuzumab	
• Interferon alfa2ab	
Associated treatments	
• Androgens (norethandrolone)	
• Leukocyte growth factors	<i>Paediatric use</i>

• Ondansetron	See "Anaesthetics" sections
• Mesna	Oral and injectable forms
• Zoledronic acid	Oral and injectable form
• Allopurinol	<i>Potential paediatric use</i>
• Calcium folinate	
NECESSARY	
Antineoplastic agents: all the others	

DERMATOLOGY	
ESSENTIAL	
• Chlorhexidine	
• Povidone-iodine	
NECESSARY	
• Sulfiram and benzyl benzoate	
• Permethrin	
• Ivermectin	Indication for immunocompromised subjects <i>See infectious disease section</i>
• Topical steroids	Topical formulation (cream) for each CS Class
• Fluororacil	ointment formulation

ENDOCRINOLOGY	
ESSENTIAL	
Thyroid and antithyroid agents	
• Levothyroxine	Oral and injectable forms <i>Paediatric use</i>
• Liothyronine	
• Propylthiouracil	
• Carbimazole	
Pituitary-adrenal axis agents	
• Hydrocortisone (succinate)	Oral and injectable forms
• Deoxycortone	Injectable form Acute adrenal failure
• Fludrocortisone	Adrenal failure
Others	
• Desmopressin	Injectable and oral forms
• Somatropin	<i>Specific paediatric indication</i> Hyperinsulinism Hypoglycaemia following somatropin deficiency)
• Somatostatin	injectable see <i>Gastroenterology</i> section
• Cyproterone	Indication: paraphilia
• Bromocriptine	
NECESSARY	
• Fixed LT4 and LT3 association	
• Cabergoline	Indication: prolactinoma
• Metyrapone	diagnostic testing

GASTROINTESTINAL MEDICINES	
ESSENTIAL	
• Omeprazole	Injectable and oral forms <i>Paediatric use</i>
• Metoclopramide	Oral and injectable forms
• Rectal corticoids	
• Phloroglucinol	Injectable form
• octreotide	Injectable form
• Terlipressin	Injectable form
• Pancreatic extract	
• Lactulose	
• Ursodeoxycholic acid	
• Biologic adhesive glue	
NECESSARY	
• Loperamide	
• Mesalazine	
• Sulfasalazine	
• Infliximab	<i>See also RHEUMATOLOGY</i>
• Ampho B suspension	Oral form
• Phloroglucinol	Oral form

GYNAECOLOGY OBSTETRICS	
ESSENTIAL	
• Oxytocine	
• Progesterone acetate	Injectable forms
• Atosiban	
• Terbutaline	Injectable form
• Salbutamol	Oral and injectable forms see also PNEUMOLOGY section
• Methylergometrine	Oral and injectable forms
• Prostine	Oral and local forms Indication: induction of labour
• Sulprostone	
• Norethisterone	Genital bleeding prevention in haemorrhagic diseases
• Leuprorelina	Injectable form Indication: endometriosis (other indication in cancerology)
• Mifepristone	
• Gemeprost	
• Misoprostol	
• Oral contraceptives	
NECESSARY	
• Econazole	vaginal suppository
• Dihydrogesterone	test in cases of amenorrhoea
• Danatrol	Oral form Indication: endometriosis
• Other progestative antigonadotropic agents	Oral form Indication :endometriosis

HAEMOSTASIS MEDICINAL PRODUCTS	
ESSENTIAL	
Anti-thrombotic agents	
• Warfarin	
• Acenocoumarol	
• Fluindione	
• Heparin calcium	
• <i>Low molecular weight heparin</i>	
• Danaparoid	
• Lepirudin	
• Clopidogrel	
• Abciximab	
• Tirofiban	Paediatric use
• Urokinase	
• Alteplase	
Anti-haemorrhagic agents	
• Vitamin K1	Oral and injectable use
• Aprotinin	Paediatric use not covered by marketing authorisation
• Protamine sulfate	
NECESSARY	
• Ticlopidine	Indications: Stent requiring two anti-clotting agents
• Tranexamic acid	Oral and injectable forms

METABOLISM - DIABETOLOGY	
ESSENTIAL	
Oral antidiabetic agents	
• metformin	
• glibenclamide	
• gliclazide	
• glipizide	
Insulins and analogues: for syringe and injection pens	
• Very brief duration of action	
• Brief duration of action	
• Intermediate duration of action	
• Long duration of action	
• Insulin for pumps	
Hyperglycaemic agents	
• glucagon	
• diazoxide	Adults and children: essential in cases of hypoglycaemia (e.g. hyperinsulinism caused by benign or malignant pancreatic or extrapancreatic tumour) For children: Essential in cases of hypoglycaemia occurring during glycogenosis
Minerals and vitamins	
• Potassium chloride	Oral form (see Intensive care for injectable forms)
• Sodium Chlorure	Oral form (see Intensive care for injectable forms)
• alfacalcidol	Injectable form
• ergocalciferol	Oral and injectable forms / paediatric forms
• vitamins A/D/E/C	Oral form / Forms for paediatric use / neonatology
• vitamin B1 (thiamine)	Oral and injectable form
• ferrous iron	Injectable form
• folic acid	Injectable form (see ONCOLOGY section)
NECESSARY	
Minerals and vitamins	
• folic acid	Oral forms
• ferrous iron	Oral forms
• vitamin D3	Oral and injectable forms
• alfacalcidol	Oral forms
• pyridoxine	Oral and injectable forms

ANTIINFECTIVES MEDICINES	
ESSENTIAL (with paediatric formulations)	
Antibacterial medicines (Injectable and oral forms)	
Betalactams	
• Cloxacillin	
• Oxacillin	
• Amoxicillin	
• Amoxicillin + clavulanic acid	
• Piperacillin	
• Tazobactam	
• Cefazidime	
• Ceftriaxone	
• Cefotaxime	
• Cefpodoxime-proxetil	
• Imipenem + cilastatin	
Others	
• Doxycycline	
• Amikacin	
• Gentamycin	bead forms
• Tobramycin	
• Clarithromycin	
• Erythromycin-sulfisoxazole	
• Clindamycin	
• Pristinamycin	
• Telithromycin	
• Ciprofloxacin	
• Levofloxacin	
• Teicoplanin	
• Vancomycin	
• Metronidazole	
• Sulmethoxazole+ trimetoprim	
Antituberculosis agents	
• Rifabutin	
• Rifampicin	Injectable and oral
• Isoniazid	
• Pyrazinamide	
• Ethambutol	
Others	
• Ticarcillin +clavulanic acid	Injectable
• Cefepime	Injectable
• Cefpirome	Injectable
• Fosfomicin	Injectable
• Colimycin	Inhalation form and injectable form
• Aztreonam	Inhalation form
• Benzathine-benzyl-penicillin	
• Spiramycin	Injectable and oral

Antifungal agents	
• Amphotericin B	Standard and lipid formulations
• Fluconazole	
• Caspofungin	
• Voriconazole	
Vaccines (post-contact prevention)	
• Combined MMR	
• Anti-Hepatitis B	
• Anti-rabies	
• Anti-tetanus	
• Anti-meningitis C	
• Yellow fever	
Antiviral agents	
Antiretroviral	
• Abacavir	
• Didanosine	
• Emtricitabine	
• Lamivudine	
• Stavudine	
• Tenofovir	
• Zidovudine	
• Amprenavir	
• Atazanavir	
• Fosamprenavir	
• Indinavir	
• Nelfinavir	
• Saquinavir	
• Tipranavir	
• Lopinavir + ritonavir	
• Darunavir	
• Enfuvirtide	
• Nevirapine	
• Efavirenz	
AntiHerpes medicines	
• Aciclovir	
• Cidofovir	
• Foscarnet	
• Ganciclovir	
• Valaciclovir	
• Valgancyclovir	
Antimalarial agents	

• Chloroquine	I.V. and oral forms
• Mefloquine	
• Proguanil + Atovaquone	
• Quinine	I.V. and oral forms

OTHERS	
• Albendazole	Indication: diffuse or peroperative hydatid disease or hydatid cysts
• Ivermectin	Indication: MALIGNANT ANGIULLOSIS
• Metronidazole	
• antimony: Glucantime	Indication: Leishmanias visceral forms
• Atovaquone	
• Cotrimoxazole	
• Pentamidine	
• Pyrimethamine	
• Eflornithine	Indication: injectable form - TRYPANOSOMIASIS neurological forms -
NECESSARY	
Vaccines	
• Chickenpox	
• Combined diphtheria/ tetanus / polio	
• Typhoid fever	
• Influenza	
• Hepatitis A	
• Haemophilus b DT pertussis polio	
• Leptospirosis	
• Meningitis A and C	
• Pneumococcal infection	
Other medicines	
• <i>Pegylated alpha-interferons</i>	HCV and HBS
• Adefovir	
• Ribavirin	
• Pentacarinat	

IMMUNOLOGY	
ESSENTIAL	
• Ciclosporin	Oral and IV forms
• Tacrolimus	Oral and IV forms
• Sirolimus	
• Azathioprine	
• Mycophenolate	
• Anti-thymocyte polyclonal antibodies	
• Anti-lymphocyte polyclonal antibodies	
• Muromonab CD3	
• <i>Anti-R-IL2 monoclonal antibodies</i>	
• Busulfan	Oral and injectable forms
• Chlorambucil	Oral forms
• Cyclophosphamide	Oral and injectable forms

BLOOD-DERIVED MEDICINAL PRODUCTS	
ESSENTIAL	
• IV Human immunoglobulins	IV and SC forms
• Anti-venom immunoglobulins	
• Anti-D immunoglobulins	
• Anti-Hepatitis B immunoglobulins	
• Anti-rabies immunoglobulins	
• Fibrinogen	
• Alpha 1 antitrypsin	
• Antithrombin III	
• Activated Prothrombin Complex	
• Activated Factor VII	
• Plasma Factor VIII	
• Recombinant factor VIII	
• Plasma factor IX	
• Recombinant factor IX	
• Von Willebrand Factor	
• Factor XI	
• Protein C	
• Factor XI	
NECESSARY	
• Albumin	4% and 20%

NEUROLOGY	
ESSENTIAL	
Anti-epileptics	
• Valproic acid	Oral and injectable forms
• Phenobarbital	Oral and injectable forms
• Carbamazepine	Oral and injectable forms
• Ethosuximide	<i>Paediatric use</i>
• Felbamate	<i>Paediatric use</i>
• Gabapentin	<i>Paediatric use</i>
• Phenytoin	Oral and injectable forms <i>Paediatric use</i>
• Fosphenytoin	Injectable forms <i>Paediatric use</i>
• Lamotrigine	<i>Paediatric use</i>
• Levetiracetam	<i>Paediatric use</i>
• Oxcarbazepine	<i>Paediatric use</i>
• Tiagabine	<i>Paediatric use</i>
• Topiramate	<i>Paediatric use</i>
• Vigabatrin	<i>Paediatric use</i>
• Tetracosactide (ACTH)	Injectable form IM <i>Paediatric use</i>
• Magnesium sulphate	Injectable form (Eclampsia)
Benzodiazepines	
• Midazolam	Injectable forms See ANAESTHETICS
• Clonazepam	Oral and injectable forms See ANAESTHETICS
• Diazepam	Oral and injectable forms See ANAESTHETICS
Others	
• Bromocriptine	
• Levodopa with dopadecarboxylase inhibitor	
• Ropinirole	
• Pramipexole	
• Amantadine	
• Tropatepine	
• Pyridostigmine	
• Neostigmine	
• Ambodenum chloride	
• Baclofen	Oral and intrathecal forms
• Dantrolene	

• Sumatriptan	Oral, spray and injectable forms <i>Paediatric use</i>
• Modafinil	Indications: narcolepsy
NECESSARY	
• Glatiramer	
• <i>Interferon betas</i>	
• Donepezil	
• Galantamine	
• Rivastigmine	
• Riluzole	Indications: ALS

OPHTHALMOLOGICAL MEDICINES	
ESSENTIAL	
Anti-infective medicines	
• 0.3% tobramycin	Eye drops and ointment
• 0.3% ciprofloxacin	Eye drops and ointment
• Sulfadiazine (adiazine)	
• 3% aciclovir	Eye ointment
• 5% Povidone-iodine	Solution for ocular irrigation
Anti-glaucoma medicines	
• Acetazolamide	Tablet and freeze-dried product for injectable solution
• Mannitol	20% IV strength
Anti-inflammatory medicines	
• 0.1% dexamethasone	Eye ointment
Others	
• 0.9% NaCl	Unitary doses
• Acetylcholine chloride	
Mydriatics	
• 0.5% tropicamide ointment	
• Atropine ointment	1% 0.3% and 0.5% strengths Paediatric usage
Diagnostics	
• 0.5% fluorescein	Eye ointment
• 10% fluorescein	For injection
Anesthetics	
• 0.4% oxybuprocaine hydrochloride	Eye ointment
NECESSARY	
Anti-glaucoma medicines	
• 0.5% timolol	Eye ointment
• Prostaglandin analogue	Eye ointment
• 0.2% brimonidine	Eye ointment
• 2% pilocarpine miotic	Eye ointment
Mydriatics	
• 10% neosynephrine ointment	
Diagnostics	
• 2.5% indocyanine green Infracyanine	For injection

RADIOCONTRASTS MEDIA	
ESSENTIAL	
<i>Injectable contrast media</i>	
• <i>Water-soluble iodine contrast media</i>	For opacification of vessels (and other structures)
• <i>Gadolinium contrast medium</i>	For MRI
NECESSARY	
<i>Others</i>	
• <i>Colonic investigation preparation substances</i>	

RESPIRATORY TRACT MEDICINES	
ESSENTIAL	
Antiasthmatic medicines	
<ul style="list-style-type: none"> Brief-action beta 2+ bronchodilators 	Inhalation therapy: inhalation form in nebulisation solution for treatment of attacks <u>AND</u> powder form: may meet the needs of some asthmatics with poor hand/lung coordination Injectable forms
<ul style="list-style-type: none"> Inhaled corticoids 	FLUTICASONE or BUDESONIDE OR BECLOMETASONE- pressurised vial form and powder form meeting needs of patients with poor hand/lung synchronisation
<ul style="list-style-type: none"> Nebulised inhaled corticoids 	For infants
Pulmonary arterial hypertension	
<ul style="list-style-type: none"> Endothelin antagonist 	
<ul style="list-style-type: none"> Prostacyclines (epoprostenol) 	With suitable infusion equipment (portable pump)
<ul style="list-style-type: none"> Sildenafil 	
Surfactant and treatment for respiratory distress syndrome of the newborn	
<ul style="list-style-type: none"> Pulmonary surfactants 	Hyaline membrane disease of the premature new born: respiratory distress syndrome
<ul style="list-style-type: none"> Nitrogen monoxide 	Refractory hypoxaemia of the newborn: respiratory distress
<ul style="list-style-type: none"> Injectable caffeine 	Treatment of apnoea in the newborn: respiratory distress
<ul style="list-style-type: none"> Doxapram 	Treatment for apnoea of the newborn, not covered by marketing authorisation
Others	
<ul style="list-style-type: none"> Oxygen 	in bundle, cylinders, and vaporiser
NECESSARY	
<ul style="list-style-type: none"> Sustained-action beta 2+ bronchodilators 	inhalation forms
<ul style="list-style-type: none"> Nebulised inhaled corticoids 	nebulisation
<ul style="list-style-type: none"> Codeine-based opiate antitussive agents: codeine 	
Mesna	Solution form for endotracheobronchial instillation
<ul style="list-style-type: none"> Endotracheal fluidifiers 	Endotracheal route

PSYCHOTHERAPEUTIC medicines	
ESSENTIAL	
• Haloperidol	Injectable and oral forms
• Chlopromazine	Injectable and oral forms <i>Paediatric use</i>
• Cyamemazine	
• Butyrophenones	Injectable oral forms <i>Paediatric use</i>
• Amisulpride	<i>Paediatric use</i>
• Tiapride	
• Clozapine	
• Olanzapine	
• Lozapine	Injectable form
• Risperidone	Immediate-action form
Agents for depressive disorders	
• Amitriptyline	
• Clomipramine	Injectable oral forms <i>Paediatric use</i>
• Fluoxetine	<i>Paediatric use</i>
Thymoregulators	
• Lithium	<i>Paediatric use</i>
• Valpromide	<i>Paediatric use possible</i>
• Valproic acid	<i>see EPILEPSY</i>
Others	
• Methadone	
• Buprenorphine	
NECESSARY	
• <i>short half-life benzodiazepines</i>	Oral form (only one necessary)
• Methylphenidate	Oral form <i>Paediatric use</i>

RHEUMATOLOGY	
ESSENTIAL	
• Thiocolchicoside	Oral and injectable forms
• Zoledronic acid	Other indications: see ONCOLOGY
NECESSARY	
• Hydroxychloroquine and chloroquine	
• D penicillamine / derivatives	
• Sulfasalazine	Other indications: <i>See Gastroenterology</i>
• Methotrexate	Oral and injectable forms
• Adalimumab	
• Infliximab	Other indications: <i>See Gastroenterology</i>
• Anakinra	
• Etanercept	
• Calcitonin	Paget's disease
• Leflunomide	
• Colchicine	In cases of contraindications to NSAIDs

UROLOGY - NEPHROLOGY	
ESSENTIAL	
Diuretics	
• Furosemide	Oral and injectable forms <i>Paediatric use</i>
• Hydrochlorothiazide	<i>Paediatric use</i>
• Spironolactone	<i>Paediatric use</i>
Treatment of kidney disease	
• peritoneal dialysis solutions	
• haemodialysis solutions	
• haemofiltration solutions	
• Erythropoietin	
• Calcium carbonate	Oral forms
• Sodium polystyrene sulfonate	
Others	
• Oxybutynin	Immediate and sustained-action forms <i>Paediatric use</i>
• Pyridoxine	Hyperoxaluria type I <i>Paediatric use</i>
• Tiopronin	Cystinuria <i>Paediatric use</i>
NECESSARY	
• Sevelamer	
• Cinacalcet	
• Mitomycin	
• Thiotepa	
• Alfuzosine	

MEDICINAL PRODUCTS FOR ORPHAN DISEASES	
ESSENTIAL	
• Laronidase (human rec α -L-iduronidase)	Injectable forms <i>Paediatric use</i>
• Sodium phenylbutyrate	
• Carglumic acid	
• Imiglucerase	
• Anhydrous betaine	
• Vitamin B12 (cobalamin)	Oral form
• Cysteamine bitartrate	
• Idursulfase	
• Nitisinone	
• Agalsidase alpha	
NECESSARY	
• Zinc	Gaucher disease
• Miglustat	Gaucher disease type 1
• Alpha aglucosidase	Fabry disease

ANTIDOTES and other substances used in poisonings	
ESSENTIAL	
• Agalsidase beta (human rec α -galactosidase A)	Fabry disease
• Calcium gluconate	Injectable form
• Charcoal, activated e	
• N-acetylcysteine	
• Nalorphine	
• EDTA / BAL/ DMPS/ DTP	
• Dimercaprol	
• Naloxone	
• Iodure potassium	
• Nydroxycobolamine	
• Glucagon	
• Sodium Thiosulfate	Injectable form
• DL methionine	tablet
• Methylene blue	Injectable form
• Protamine sulfate	
• Flumazenil	
• Antidigitalic antibodies	
NECESSARY	
• Deferoxamine	
• Nitrite d'Amyle	