



Australian Government
Department of Health
Therapeutic Goods Administration

Management and Communication of Medicine Shortages in Australia – A new protocol

Protocol for Australian Product Sponsors, the
Therapeutic Goods Administration and supply
chain stakeholders

Version 1.0, March 2018

TGA Health Safety
Regulation

Historical consultation document

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Historical consultation document

Contents

Background	4
The new protocol	4
Principles for identification and management of potential shortages	6
Steps in the Reporting, Management and Communication of a medicines shortage	9
Reporting of a shortage to TGA	9
Assessment and verification	10
Investigation of alternative products	12
Response	13
Communication with industry sponsors in managing supplies when products are available from multiple sponsors but are in short supply	14
TGA and the sponsor coordinate communications about confirmed shortages	15
The medicine shortages information initiative website	16
Appendix 1: Action protocol for management of shortages	18
Appendix 2: Coordination approach for notification, management and communication of medicine shortages	19
Appendix 3: Role of stakeholders in the identification, notification and management of medicine shortages	21
Appendix 4: Medicines Watch List	25
Appendix 5: The utilisation of provisions in the <i>National Health Act 1953</i> (PBS listed medicine supply guarantee)	27

Background

Medicine shortages have become an increased problem in the last few years for a number of reasons. These include the decrease in local manufacture of prescription medicines and the increasingly globalised nature of the supply chains for medicines. Australia has only 2 % of the world's medicine usage and over 90 % of prescription medicines are imported.

Increasingly, different brands of the same generic medicine (or the Active Pharmaceutical Ingredient (API) used in the medicine) may be manufactured by the same facility. This means that even in cases where several products containing the same active ingredient are registered in Australia, they may be made by the same manufacturer and thus a manufacturing problem in an overseas facility may simultaneously affect several Australian sponsors. In addition, the procurement practices of state and territory governments have led to dependence on sole suppliers in many cases.

Many of the medicines that are in shortage are long-standing low-profit generic medicines. While some of the newer medicines e.g. for hepatitis C, various cancers and rare diseases are less likely to be in shortage, the high cost of these products means that hospital and community pharmacists, wholesalers and sponsors are unlikely to hold large stocks of these products in Australia. A supply disruption of one or more of these products can have immediate impact.

A National Medicines Shortage Information Initiative and website was launched in 2014 and was formerly a voluntary notification scheme. However, there was increasing frustration expressed by all parties that the information available on the website is neither complete nor current and it is no longer seen as a credible source of information by healthcare professionals or those involved in stock management in healthcare facilities. The information is also not being published in a timeframe to allow alternative supplies, where available, to be accessed and/or to otherwise mitigate serious effects on patients when no alternative supply is available.

In response to a range of concerns from stakeholders, a more transparent and action-oriented approach to the management of confirmed and serious medicines shortages has been developed, with the roles and responsibilities of relevant parties agreed and more clearly documented.

The new protocol

This Protocol aims to improve the management and communication of medicine shortages in Australia. It has been developed through a joint initiative of the Medicines Partnership of Australia (comprising the National Pharmaceutical Services Association, Medicines Australia, Generic and Biosimilar Medicines Association, The Pharmacy Guild and the Pharmaceutical Society of Australia and Australian Self Medication Industry), the Australian Government Department of Health including the Therapeutic Goods Administration (TGA), the Society of Hospital Pharmacists of Australia (SHPA) and the Australian Medical Association.

This initiative sought to:

- Obtain consensus on defining what is a “true” shortage
- Develop an improved process for communication and action upon those shortages which will have potential material impacts on patients. This includes a national coordination and management approach for the management of medicines shortages
- Better clarify the roles and responsibilities of sponsors, distributors, dispensers and government

- Develop consensus on reporting requirements for anticipated as well as known shortages (and public communication of verified shortages).

It is proposed that the reporting of all medicines shortages to the TGA be made mandatory however mandatory publication on the MSII website will only be for medicine shortages assessed to be of Extreme or High patient impact.

It should be noted that this protocol applies to the handling of all Australian registered prescription medicine shortages not just those medicines available under the Pharmaceutical Benefits Scheme (PBS). This includes hospital lines and prescription medicines both PBS and non-PBS available from community pharmacies.

Reports received by TGA will not immediately be published, but will be discussed in confidence with relevant stakeholders. A triage/ classification process for determining what is a critical shortage has been developed. The process is described in this document.

The MSII website will continue to be hosted by the TGA but will undergo improvements. While all sponsors will be required to report shortages and provide permission for them to appear on relevant pages of the MSII website, the MSII “landing page” will only highlight those shortages assessed as having **Extreme of High patient impact**. Other shortages will appear on the standard MSII pages.

The process for posting shortages information to the MSII website will be streamlined to enable faster and more accurate reporting of Extreme and High patient impact shortages. Posting of **extreme/high patient impact** shortages and discontinuations will be performed by TGA and placed on the MSII landing page highlighting just these shortages. Posting of extreme/high patient impact discontinuations will be visible for a limited time period (until availability of the product in the marketplace is exhausted) and then moved to the standard discontinuation page.

Companies will be reporting other shortages to the TGA, but the publication of shortages that have not been deemed by the TGA to have Extreme or High patient impact will only be undertaken where there is agreement with the sponsor. Sponsors will also be strongly encouraged to allow publishing of information these shortages on the MSII website.

The process for obtaining access to alternative medicines during shortages (for medicines that are not registered in Australia) outside the Special Access Scheme has also been made more transparent and flexible. The *Therapeutic Goods Act 1989* (the Act) has been amended to enable alternatives to medicines in short supply to be sourced from a wider range of countries. To assist applicants (usually pharmaceutical companies or specialist suppliers) wishing to import alternative products, information, guidance and an application form have been published on the TGA website: <https://www.tga.gov.au/accessing-medicines-during-medicines-shortage>; www.tga.gov.au/sites/default/files/section-19a-guidance-for-industry.pdf. A database to enable viewing of s19A approvals is also available on the TGA website.

The internal process within the Department of Health for triage and coordination in response to information received by the TGA about shortages is also documented in this Protocol.

The Protocol also sets out the arrangements for the **medicine shortages information website** (<https://apps.tga.gov.au/prod/MSI/search/>). Hosted by the TGA, it is the key tool for delivering consolidated information to support health care professionals and consumers to manage a medicine shortage.

A **medicine shortage** covers all instances where a patient's care may need to be revised as a result of:

- (a) the unavailability of a medicine from a sponsor, wholesaler or manufacturer; or
- (b) the partial availability of a medicine from the sponsor, wholesaler or manufacturer; or
- (c) other constraints on the medicine's availability.

Different types of medicine shortage are defined:

- **Anticipated medicine shortage** means a medicine shortage that is anticipated to commence at a future date;
- **Current medicine shortage** means a medicine shortage that has commenced;
- **Resolved medicine shortage** means a medicine is now available because the supply of the medicine is no longer unavailable, partially available, or affected by other constraints;
- **Discontinuation** means a decision by a sponsor to permanently cease the supply of a medicine.

(Discontinuation is included in the Protocol because from a health professional and consumer perspective it has a similar impact to a shortage and also requires timely information to be provided.)

The kinds of **medicines** intended to be covered for the purposes of the proposed medicine shortage reporting requirements are prescription medicines that are entered on the Australian Register of Therapeutic Goods. However it is also proposed to include a small number of non-prescription medicines. The criteria for inclusion of a non-prescription medicine would be:

- The medicine is critical to the ongoing health of the patient (an example would be salbutamol asthma inhalers); and/or
- Inclusion of the medicines is critical for public health (an example would be naloxone injections for opioid overdose).

Principles for identification and management of potential shortages

The development of an enhanced, transparent and rigorous approach to identifying and addressing the risk and/or consequences of particular medicines shortages, including discontinuations, has the potential to improve patient care in several ways. It should reduce the incidence of unforeseen but necessary alterations in patient treatment, enabling prescribers and pharmacists to identify clinical alternatives earlier. It will also enable the TGA and industry to identify alternative products that are available in other countries for possible deployment in Australia during the shortage.

Along with the revised definition of shortage, the following principles will enable an improved response to potential shortages and minimise the negative impacts on patient care:

Definition and notification of shortages

1. Not all supply disruptions result in a medicine shortage.

2. Only some medicine shortages have a material impact on patient health/outcomes. A streamlined approach to the reporting of shortages will enable greatest effort to be allocated to shortages with the most serious (Extreme/High) impact on patients.
3. Mandatory notification of all known and anticipated shortages by the sponsor to the TGA will enable the focus to be on those shortages.

Stakeholder engagement

4. Whilst patient impact is the foremost priority, participation in the mitigation and management of medicines shortages by sponsors, wholesalers, the Department of Health and health care practitioners must be balanced, appropriate and reflect community expectations.
5. Early and timely engagement with healthcare practitioners is a priority to ensure impacts are accurately identified. Assessing the potential impacts of a particular shortage will be aided by expertise within medical (colleges and professional organisations) and pharmacy (e.g. SHPA Specialty Practice Groups) bodies.

Risk assessment and management

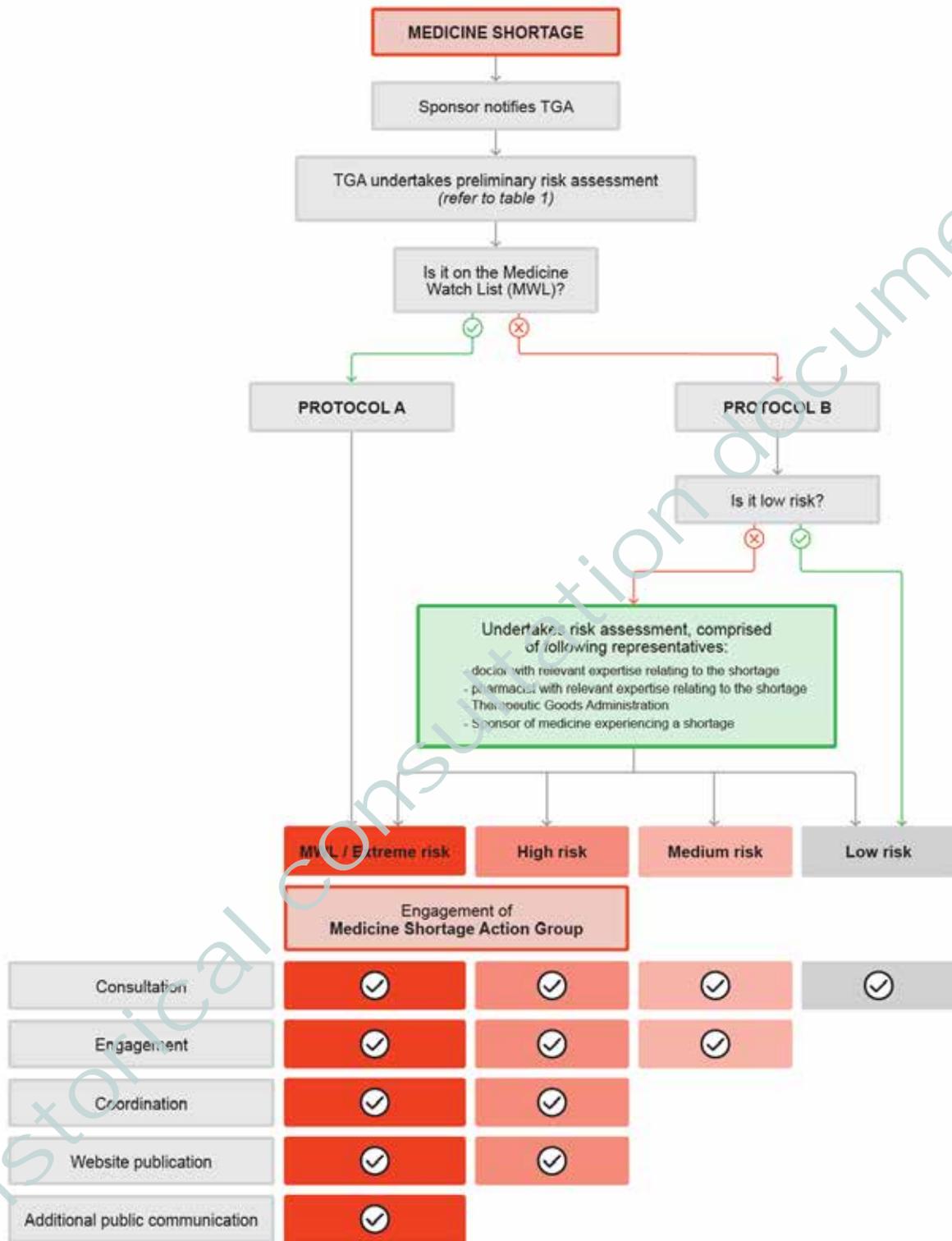
6. Input from health care practitioners is required for the risk assessment and planned response to a medicines shortage.
7. Predetermined classifications of key medicines on a “watch list” within a risk assessment framework will enable a more effective and timelier response.
8. Early identification of an alternative medicine in cases of an extreme/high patient impact shortage is paramount. The medicine could be an alternative medicine already registered in Australia or an alternative therapeutic approach. It may also encompass identification of suitable products available internationally, for importation and use under special provisions (s19A of the *Act* or TGA Special Access Scheme).
9. The assessment of demand is initially limited to the supply of a specific medicine (including any generic versions available) and is separate to considerations about the existence and availability of substitute medicines or therapeutic alternatives.

Publication

10. For medium/low impact shortage, TGA will publish information provided by a sponsor on the website (with the approval of the sponsor and on the date nominated by the sponsor) and agreed with the TGA, at a time that coincides with the sponsor’s communication activities within the supply chain.
11. The TGA will always publish information about medicine shortages designated as having extreme or high patient impact as such publication will be in the public interest. The preferred route is through submission of a MSII notification, but if necessary the TGA will publish verified information supplied to the TGA through other communication channels.

Figure 1 below schematically outlines the response to a medicine shortage.

Figure 1 - Response to a medicines shortage



Steps in the Reporting, Management and Communication of a medicines shortage

Refer to Appendix 1 for an action protocol and Appendix 2 for a coordination approach to the reporting, management and communication of medicines shortages

Reporting of a shortage to TGA

There is a clear distinction between reporting to the TGA and publication of a medicine shortage.

Whilst reporting would normally be made by the sponsor of the medicine, the TGA may be informed by a different sponsor or health care provider that the supply of a medicine is not likely to meet normal or projected demand. This information is then investigated, verified and communicated by the TGA.

Mandatory reporting of shortages on a confidential basis to the TGA is necessary for all shortages experienced by sponsors. The TGA will then conduct an assessment of the shortage and its impact and where required will also consult expert clinicians. The reporting process is as follows:

12. Product sponsor **confidentially and mandatorily** reports to TGA of:
 - a. a potential shortage to facilitate early investigation with proactive forecasting and management
 - b. actual, unanticipated shortage for urgent investigation and management
13. Information from other parties may be used to inform the TGA or other parts of the Department of Health and the sponsor such as:
 - a. State and territory health systems
 - b. Health care providers (pharmacists, prescribers, hospitals) may notify shortages directly to TGA or other parts of the Department of Health
 - c. Consumers may raise shortages directly with Health care providers, prescribers or others
 - d. TGA may obtain information about current or impending medicines shortages from its international liaison activities
14. Where possible, the Technology Assessment and Access Division (TAAD) within the Commonwealth Department of Health will provide information to the TGA to assist with the management of supply shortages.
15. In examples 2 and 3 above, the TGA will verify the accuracy of the reported information with the sponsor of the medicine.
16. The sponsor would indicate whether they agree to publish on the MSII website whatever the assessment of the impact of the shortage. The TGA is able to publish information about

medicine shortages under a legislative instrument under section 61 of the Act that provides the TGA with the authority to release information to the website regardless of consent (see <https://www.tga.gov.au/industry/legislation-tg-information-specifications.htm>).

Assessment and verification

What dose forms and strengths are in shortage? The definition of what ‘medicine’ is in shortage, should be further defined by molecule, strength and route of administration, not molecule alone such that it is understood that not all formulations and strengths of a molecule are in shortage.

Partners (sponsors, wholesalers and other stakeholders) will work together with the TGA to determine whether or not supply will meet demand, especially when there is more than one supplier of that molecule/strength/route of administration. There are currently challenges in obtaining accurate and timely information.

How long will the product be in shortage? Any supply disruption must be reported because it is not feasible to prescribe a standard minimum period of inability to supply that would not be of significant consequence to patients. For example, inability to supply an antibiotic used in life-threatening situations, or particular insulins for as little as 24 hours could be deemed critical shortages in certain circumstances.

Nature of the product in shortage. A two-element approach will be used to assess the effect of the type of product in shortage on the impact of the shortage (Figure 1).

If the product is on the **Medicines Watch List (MWL)**, a confirmed shortage would automatically be deemed to have an Extreme patient impact.

A risk assessment framework will be applied to all other medicines, in which the nature and size of the population affected would be assessed together with the availability of alternative products, before determining whether a particular shortage is of low, medium, high or extreme patient impact.

The Medicines Watch List (Appendix 4) is derived from a consensus review of existing state hospital Emergency and Life Saving Drug Lists and the WHO’s Model List of Essential Medicines that are contained in the Australian Register of Therapeutic Goods (ARTG). The list will be reviewed on a periodic basis.

Medicines that should be included on the Medicines Watch List are those where lack of access would result in significant morbidity and mortality and where no alternatives are readily identified.

The list includes antibiotics used in critically ill patients, antidotes for poisonings, some emergency and critical care products and critical vaccines included on the National Immunisation Program, as well as some others such as tetanus vaccines.

While a number of other classes of medicines have been associated with clinically serious medicines shortages, such as:

- inhaled anaesthetics, anticonvulsants, antipsychotics, antidepressants, opioids, steroids – alternatives in these classes may potentially be interchangeable; likewise
- specific oncology medicines - require individual patient assessment as to whether alternatives are appropriate and switching of the patient is possible

Shortages of these other classes of medicines will be assessed on a case-by-case basis.

The assessment framework identifies the potential impact of any medicine shortages by applying a mechanism which assesses the impact on the size and nature of patient populations affected through measures of the prevalence of use in the population alongside the availability of alternatives (refer Tables 1, 2 and 3).

An example of an **EXTREME** patient impact is an unexpected shortage of heparin-based products. This product has **NO** therapeutic alternative, and the post-surgical population group would potentially experience life-threatening impacts if this medicine was not available.

An example of a **HIGH** patient impact is unavailability of a new oncology drug where non-availability may lead to changes in treatment protocols or rationing of stock for patients already commenced on the medicine.

An example of a **MEDIUM** patient impact is a shortage of an ACE Inhibitor for hypertension where a doctor would need to change their prescribing to another ACE inhibitor, or other anti-hypertensive medicine. In these cases, publicly available information for doctors and pharmacists would assist this process.

An example of a **LOW** patient impact is a shortage of a generic amoxicillin 250 mg oral product, where another generic product (either tablet or capsule) is easily substitutable with little if any effect on the consumer's health outcomes and where the doctor and/or pharmacist would not be required to undertake significant additional effort. In this case, information would simply inform and assist doctors and pharmacists if queries are received about availability.

Table 1 - Population impact of medicines shortages

Population impact	Medicine impact (refer Table 2)				
	Exact alternative available	Similar alternative available	Approximate alternative available	Possible alternative available	No alternative available
Rare < 9 per 100,000 population	Low	Low	Medium	High	Extreme
Uncommon >9 and < 100 per 100,000 population	Low	Medium	High	Extreme	Extreme
Common >100 per 100,000 population	Low	Medium	High	Extreme	Extreme

Table 2 - Categories of Patient Population Assessment and Ranking

Patient Population – Ranking	Examples	
Determined by taking into account: <ul style="list-style-type: none"> The different patient population group for the product and their unique needs. The consequences of a medicine 	MILD	Simple dermatological conditions
	MODERATE	Vulnerable patient population groups where dose forms may not be appropriate e.g. paediatric

Patient Population – Ranking	Examples	
<p>shortage on the likelihood that the medical condition, if left untreated, will progress from a less serious condition to a more serious condition and impact on:</p> <ul style="list-style-type: none"> ○ Day to day functioning ○ Survival 	SEVERE	Oncology patients in mid cycle regimen

Table 3 - Substitute Medicine or Therapeutic Alternatives - Assessment and Ranking

Substitute medicines or therapeutic alternatives	
<p>Determined by taking into account:</p> <ul style="list-style-type: none"> • Types of substitute medicines or therapeutic alternatives that exist • The approved indications for the substitute medicines or therapeutic alternatives • Likelihood of available substitute medicines or therapeutic alternatives being available in quantities to meet demand <p><i>Note: When ranking a medicine shortage, consideration is also given to the feasibility of the medicine being substituted in the context of the patient population and the care setting</i></p>	<p>EXACT – same medicine (active ingredient, strength and route of administration)</p>
	<p>SIMILAR – same active ingredient but different strength</p>
	<p>APPROXIMATE</p> <p>Different active ingredient but same pharmacological class and adverse reaction profiles when administered to patient in therapeutically equivalent doses.</p> <p>OR</p> <p>Same active ingredient but different dose form that may require consideration of care setting implication.</p>
	<p>POSSIBLE – different active ingredient but comparable pharmacological class or mode of action</p>
	<p>NONE – unique pharmacology no substitute medicine or alternative treatment options exist.</p>

Investigation of alternative products

As part of the assessment and management of a shortage that is mandatorily reported to the TGA, an investigation will be undertaken to identify products that may be available for substitution. These could be:

- the same pharmaceutical substance, dose form and strength but sourced from another supplier; or
- the same pharmaceutical substance at a different strength or different dose form; or
- a different substance but in the same therapeutic class.

In cases where no suitable products are available in Australia are identified, suitable products may be sourced from overseas to address a shortage.

Where there are no suitable direct or similar alternatives identified or in a situation where obtaining a substitute is delayed (such as needing to be sourced from overseas) the Medicines Shortages Action Group would be convened.

The Medicines Shortages Action Group would identify strategies to continue patient management that could include rationing options and alternative therapies to support management of patients affected by the shortage

In these cases the time between reporting a shortage to the TGA, as per the flowchart, to communicating the information should be as short as possible, and at the most 72 hours. Where key aspects of the information cannot be verified in a timely manner, Communication processes will also occur throughout the process.

Response

When a decision has been made that the shortage has an “EXTREME or HIGH PATIENT IMPACT”, the shortage will be COMMUNICATED. The Sponsor and other relevant authorities will be notified of the decision by TGA and asked to implement particular communication and management strategies.

The TGA and the Sponsor will be involved in communications relevant to:

- Hospitals – both the TGA and the Sponsor will notify State and Territory Health Departments; Sponsor will notify wholesalers marketing into private hospitals and the SHPA.
- Community/retail pharmacy - both the TGA and the Sponsor will notify the Pharmaceutical Society of Australia and the Pharmacy Guild; Sponsor will notify wholesalers and pharmacies.
- PBS medicines – TGA and Sponsor will notify TAAD who in turn, notifies Community Service Obligation Distributors.
- National Immunisation Program vaccines – TGA and Sponsor will notify the Office of Health Protection.
- National Blood Authority plasma components (where they are registered medicines) - TGA and Sponsor will notify the National Blood Authority and the Office of Health Protection.

For shortages with Medium/Low patient impact, TGA and the Sponsor will notify other stakeholders as required. Noting that while such shortages are published on the MSII website at the discretion of the Sponsor, it is planned that the Sponsor would notify those in the supply chain about the details of the shortage.

It is the intent of the TGA to notify State and Territory health departments as soon as possible, most likely via an email, following notification of an imminent shortage of high or extreme impact. This is to allow jurisdictions to begin to manage stock levels and make alternative arrangements where necessary, even if the comprehensive risk assessment has not been completed.

The CMO and Chief Medical Adviser and Deputy Secretary, Health Products Regulation Group of the Commonwealth Department of Health are notified of **all** shortages with extreme or high patient impact. The CMO and/or the Chief Medical Adviser will

- Coordinate action on rationing of the products following clinical review with relevant bodies [e.g. Clinical Colleges, medical and pharmacy professional organisations, States and Territories, Council of Australian Therapeutic Advisory Groups (CATAG)]
- When it is determined that there is a shortage of Extreme/ High patient impact and there is not a supply of an alternative similar product there maybe the requirement to provide advice to doctors on appropriate therapeutic alternatives or what measures need to be undertaken in view of the shortage. It is not the role of TGA but rather of the CMO/ states and territories/ clinical colleges to advise on alternative medicines. However TGA will support the decision making process and assist in promulgating information on alternatives
- Work with supply chain stakeholders on rationing of supplies and signposting to alternatives available in Australia, including different suppliers, different dose forms, or different products in the same therapeutic class

Advise of the relative importance of obtaining alternative product/s from overseas

Communication with industry sponsors in managing supplies when products are available from multiple sponsors but are in short supply

The management of shortages can be difficult where there are multiple sponsors supplying the market. The first issue is determining the market share of the different sponsor's products and usually the different sponsors have a good idea of their own market share. A shortage might only affect one sponsor's product however depending on their market share, a shortage of a particular medicine where the sponsor has a significant market share might lead to shortages of all sponsors' products and hence a shortage of the product overall.

Once there is information about the different market shares and how all sponsors are affected by a shortage in the same medicine market, communications and collaboration between sponsors would allow improved management of the stock available and also help identify which sponsors might be able to increase supply to cover any shortages. The same principle applies for products imported under s19A to minimise over importation in addressing a shortage.

Other useful collaborations would be the ability to 'ration' supply of all sponsors' products when there is a shortage to minimise stock piling of products and increasing the shortage of like products. It would also allow supply to those who might most need it e.g. oncology drugs to finish a course rather than having new patients commence a course and not be able to complete the course.

Some aspects of communication and collaboration described above might be seen as anticompetitive under the Competition and Consumer Act 2010 whether there is a difference if the coordination of such communications is carried out by government rather than by industry. It would be possible to seek an "authorisation" by formal application to the ACCC for an exemption from anti-competitive dealings provisions.

Regulatory options underpinning sourcing of medicines from overseas

The TGA regulates the **import and supply of the unregistered medicine for use by individual patients** through the Special Access Scheme (SAS) (Section 18(1) and section 19(1) of the *Therapeutic Goods Act 1989*) and the Authorised Prescriber scheme (section 19(5) of the *Therapeutic Goods Act 1989*)

The TGA can consent to the **importation and supply of medicines that do not comply with a standard that would otherwise be applicable** (Section 14 of the *Therapeutic Goods Act 1989*)

The TGA can grant approval to a sponsor to **import and supply an unregistered medicine that could substitute for a registered medicine** that is in short supply (Section 19A of the *Therapeutic Goods Act 1989*)

Information on Section 19A is available on the TGA website - [Accessing medicines during a medicines shortage](https://www.tga.gov.au/accessing-medicines-during-medicines-shortage) (<https://www.tga.gov.au/accessing-medicines-during-medicines-shortage>).

TGA and the sponsor coordinate communications about confirmed shortages

All shortages of extreme or high patient impact will be published on the TGA website. These shortages are anticipated to be relatively fewer in number and will appear on the landing page on the medicine shortages website, under a specific “tab”. They will also be found under one of four sub-categories: current, anticipated, resolved or discontinued.

In certain cases, a special alert may be published on the TGA website, including information on alternative products where appropriate. Links to other websites (sponsor, state and territory, clinical college) will also be provided. Information on products approved to be imported under s19A as alternative products to Australian-registered medicines that are experiencing a shortage are now available on the TGA website. (<https://www.tga.gov.au/ws-s19a-index>).

Sponsors will be strongly encouraged to allow publication of other (medium/low patient impact) shortages on the MSII website. These will also be under one of four sub-categories: current, anticipated, resolved or discontinued.

For low- or medium- patient impact shortages, communication plans will only need:

- Sponsors to develop and implement their routine communication activities based on the impact assessment; and decide on the website publication date (that aligns with the commencement of supply chain communication) and to notify the TGA of updates as required
- The TGA to validate the assessment, and manage the publication of the shortage information if agreed (including updates) in accordance with the sponsors nominated publication date, as well as working with the sponsor to implement any agreed regulatory response

For extreme - or high - patient impact shortages, a range of stakeholders will need to work together, to conduct the following steps:

- Finalise specific communication messages, channels, schedule and overall communication plan
- Where appropriate, notify peak consumer organisations – to manage patient cohort expectations
- Provide consistent clinical advice for communication to HCPs (pharmacists & prescribers) and hospitals to manage shortage and mitigate any patient risks
- Decide on additional information for publishing on the website to support patient care
- Monitor and respond to shortage status changes and issues that emerge e.g. to follow up with distributors to ensure currency of their information (e.g. follow up from pharmacies)

The sponsor will update the information on the MSII website in conjunction with the TGA, although TGA will also be able to update this information if there were otherwise delays.

From time to time, health professional and public media outlets are interested in reporting on specific medicine shortages. In developing the response, sponsors and the TGA will have considered this and decided on appropriate action. It is normally the sponsor's role to discuss the details of their products and the specific reasons for the shortages with the media.

Education about the protocol and the purpose of the website is important. The broad education and communication activities include:

- Information about medicine shortages in Australia:
 - why they occur, the types, and how they are managed
 - the different categories of shortages, and what information to expect when a high impact medicine shortage occurs in Australia
- What to expect from sponsors and the TGA, in terms of their responsibilities
- The purpose and content of the website, how to access and use the available information, and how to subscribe to alerts and notifications.

The medicine shortages information initiative website

The website provides health professionals and consumers with information about medicine shortages. The site includes information about medicines that are:

- Prescription medicines (including vaccines) and OTC medicines listed on the PBS registered in the Australia. Information on availability of other OTC medicines or on medicines usually obtained through the Special Access or Authorised Prescriber Schemes is **not** included.
- Currently in shortage or anticipated to be in short supply either temporarily or permanently discontinued
- For high- or extreme- patient impact shortages, information will be posted on the landing pages
- For low or medium impact shortages, information notified to the TGA by the sponsor for the purposes of inclusion in the website, as part of their communication and management activities.

The **information available** on the website for each medicine shortage includes:

- Sponsor name and contact details
- Product active ingredient and trade name, strength, dose form and ARTG number
- Reason for the shortage (selected from a drop-down menu)
- Estimated duration of the shortage
- Shortage type
- Additional supply details about the medicine as appropriate
- Information about substitute medicines or therapeutic alternatives as appropriate.

By subscribing to the alert service, subscribers can elect to receive email or RSS feed notification of new and updated medicines shortage information.

The information will normally be published with the consent of the sponsor. It is recognised that there may be situations where consent is not given or is not possible. The TGA is able to publish information about medicine shortages under a legislative instrument under section 61 of the *Therapeutic Goods Act 1989* which provides the TGA with authority to release information to the website regardless of this consent (see <https://www.tga.gov.au/industry/legislation-tg-information-specifications.htm>).

Historical consultation document

Appendix 1: Action protocol for management of shortages

The components of the proposed action protocol are detailed in Figure 1 and include:

1. Sponsor reports confidentially to the TGA of known/forecast medicines shortage (mandatory)
2. If medicine is on the Medicines Watch List, it is identified as an Extreme risk shortage, and is then coordinated by the Medicine Shortage Action Group (Protocol A is implemented)
3. If medicine is not on the Medicines Watch List, then the TGA – following further input from the sponsor (if required) – undertakes a desktop assessment using the assessment framework
4. If assessed by TGA as Low (availability of exact alternative), then communication from the sponsor to relevant healthcare providers only may be appropriate.
5. Where assessed by TGA as Medium, High or Extreme there will be consideration, where required, for a ‘quick touch review’ within a maximum 72 hours involving as required pre-nominated representatives from:
 - the relevant medical college(s)/specialist medical society
 - pharmacist organisation (i.e. SHPA Specialty Practice Groups, and PSA if the medicine is dispensed significantly in community pharmacy settings)
 - Therapeutic Goods Administration (involving the CMO/ Office of Health Protection if the product shortage may have serious public health impacts or is part of the National Immunisation Program)
 - medicines sponsor who has the shortage

These partners would undertake these discussions in confidence.

This would be undertaken by email (and as required) for those assessed as Medium, with a teleconference format for those shortages that are potentially of High or Extreme impact.

6. The outcome of the risk assessment (refer Table 3) will then direct specific response and escalation to the “Medicine Shortage Action Group” (refer Figure 1) which comprises the relevant sponsor, medical colleges, specialist medical societies, pharmacist organisations, Commonwealth Department of Health (TGA and CMO/Office of Health Protection/ TAAD) as required and state and territory representatives. This Group will work together to prioritise use of any remaining stocks of the product in shortage and identify and communicate therapeutic alternatives during the period of the shortage.
7. TGA and the sponsor(s) will work together on identifying suitable alternative overseas supplies of similar products and arrange access under SAS or s19A of the *Therapeutic Goods Act 1989*.

Appendix 2: Coordination approach for notification, management and communication of medicine shortages

Identifying a shortage

Reporting

1. Product sponsor confidentially and mandatorily notifies the TGA of:
 - a potential shortage to facilitate early investigation with proactive forecasting and management
 - actual, unanticipated shortage for urgent investigation and management
2. Information from other approaches may also be used to inform the TGA and the sponsor:
 - HCPs (pharmacists, prescribers, hospitals) may notify shortages directly to the TGA
 - Consumers may raise shortages directly with prescribers, pharmacists, TGA, others
 - The TGA liaison with international regulators and GMP inspection information
3. Where possible Technology Assessment and Access Division (TAAD) within the Department will provide information to the TGA to assist with the management of supply shortages.

TGA (DOH) investigates

Investigation

- Contacts product sponsor to confirm and assess
 - Availability and capacity of other brands
 - Availability and capacity of other suitable dose forms of the medicine
 - Availability and capacity of other therapies
- Conducts risk assessment e.g. as per new MSII protocol
 - Including need to undertake clinical review to support management
- Maintains database (a single database support the MSII website but with public and private fields)

Decision made as to whether shortage has “EXTREME or HIGH PATIENT IMPACT”

Confirmation

TGA (DOH) triages a response to confirmed shortage – relevant authorities notified to implement respective management strategies and feedback managed.

- Hospital shortages – notify state and territory Health Departments
- PBS shortages – notify TAAD who in turn, notifies CSODs
- NIP shortages – notify NPD
- Other shortages – TGA and Sponsor engaged
- CMO and HPRG CMA and Deputy Secretary notified of **all** shortages of extreme/high patient impact

- Following a risk assessment which includes public interest considerations, DOH (including TGA) is to coordinate clinical review with relevant bodies about alternative treatment options

**TGA (DOH) and sponsor coordinate communications about confirmed shortages
Communication**

- Provide consistent clinical advice for communication to pharmacists, prescribers and hospitals to manage shortage and mitigate any patient risks (Sponsor and TGA)
- TGA : Where appropriate, notify peak consumer organisations to manage patient expectations
- To relevant distributors (e.g. CSODs) to ensure currency of their information (e.g. follow up from pharmacies)
- Update MSII website (triage and coding of alert levels)

Historical consultation document

Appendix 3: Role of stakeholders in the identification, notification and management of medicine shortages

Role of the Australian Government Department of Health

The TGA has an important role in several aspects of the notification, assessment, management and reporting of medicines shortages, but is not the sole “manager” in these situations.

TGA must be notified of all current and anticipated medicines shortages and of all discontinuations by sponsors once they are identified by the sponsor.

TGA will undertake an initial risk assessment of the shortage in conjunction with the medicines sponsor, and as needed convene other stakeholders to further determine the criticality of the shortage and communicate the shortage as needed. TGA also manages the Medicines Shortages Information Initiative website. Further detail has been described in the sections above.

The TGA can approve the temporary supply of a substitute medicine or therapeutic alternative during a medicine shortage. The chosen option will depend on the nature of the medicine, and the circumstances surrounding the shortage.

The TGA may undertake additional communication activity in relation to particular medicine shortages where there are anticipated to be significant public health impacts. The TGA also collaborates with sponsors to streamline the notification of medicine shortages, and to enable consistent communication and management. This may include:

- escalation to a public health response, such as advice from the Commonwealth Medical Officer and advice from/ communications with state and territory health departments of cases assessed as high impact level medicine shortages
- provision of an additional communication channel to inform health professionals and consumers about the details of the shortage (via the website)
- coordination of expert advice and information about substitute medicines and therapeutic alternatives where appropriate
- the publication of information about a medicine shortage in the public interest.

The Chief Medical Officer and the Office of Health Protection may provide advice on the public health impacts of certain shortages, in particular shortages assessed as extreme/high patient impact and shortages of vaccines.

Where there are significant public health impacts the Chief Medical Officer will also have a role in coordinating responses and communication.

The **Technology Assessment and Access Division**, which has responsibility for the Pharmaceutical Benefits Scheme, has described the obligations under the *National Health Act 1953* of sponsors of PBS-listed medicines during a shortage above.

It is a condition of listing on the PBS that sponsors have stock available across the supply chain, and they must report any supply disruption with a PBS listed medicine to the Department of Health. There are legislative requirements whereby manufacturers must guarantee supply of certain medicines for up to 24 months after listing. They must notify TAAD (the Minister’s

delegate) if they are unable to supply within this period. There are criminal penalties for non-compliance.

Where a supplier has failed to meet their obligations under the Act, the Minister has discretion (under section 99AEH) to: delist the relevant brand, delist any of the supplier's other PBS listed brands or refuse to list a new brand from that supplier.

When a temporary supply has been granted by the TGA (section 19A), the Department is able to negotiate a price for a temporary product to ensure that it can be listed on the PBS whilst the registered product is in short supply or unavailable.

The reporting requirements Protocol is not intended to replace the 'Guarantee of Supply' form, to be used when a 'Responsible Person' wishes to advise a failure to supply a brand of an item listed on the PBS, or a belief that a supply disruption has, or is likely to occur. Sponsors are still required to complete this form and report to the Technology Assessment and Access Division.

TAAD will be consulted during the determination of alternative suppliers as they have information on which sponsors are supplying particular products under the PBS. During confirmed medicine shortages they will also be in communication with PBS sponsors, in particular if short-term changes to listings are required due to a shortage.

For more information, refer Appendix 4.

Role of the state and territory departments of health

State and Territory health departments are also involved in ensuring timely access to medicines through, for example, contractual purchasing and other procurement arrangements, and in providing advice on alternatives through therapeutics committees for hospital networks. They also have a role in coordinating responses to medicine shortages where there is a significant public health impact within their jurisdictions.

Health professionals and professional organisations

Health professionals perform roles as prescribers or dispensers across various healthcare settings including primary care and hospitals. Often it is the dispenser who is first aware of a shortage, rather than the prescriber, as they are involved in the supply of medicine to the consumer and generally the prescriber is not. Health professionals receive medicine supply information via a range of channels, including notices from the wholesaler, letters from sponsors, newsletter articles in professional media, colleagues and consumers.

When a medicine shortage occurs, health professionals are often required to identify substitute medicines or therapeutic alternatives for their patients. The dispenser has the knowledge and expertise to substitute an item that is considered to be bioequivalent however; they will need to refer to the prescriber for non-identical substitute items and changes to therapy. There may also be high risk cases when it is not reasonable for the dispenser or the prescriber to know about substitute medicines or therapeutic alternatives and additional information is required. In these cases, medical colleges and clinical guidelines experts may become involved in providing advice on the appropriate treatment regimens.

Health professionals are then responsible for passing on information to the consumer, in an easily understood manner. With accurate information about medicine shortages, health professionals will also work to assist the consumer to manage potential problems that arise with the quality use of medicines, for example, the safety and compliance considerations needed when a substitute of different dose forms or strength is used."

Role of wholesalers

Pharmaceutical Wholesalers distribute most (but not all) medicines to retail pharmacies and hospitals.

In the case of localised or regionalised out-of-stocks or short-term shortages of PBS subsidised medicines, this is usually resolved within 24 hours due to Community Service Obligation (CSO) delivery guarantee requirements whereby CSO Wholesalers are required to hold supply redundancy, and/or coordinate with alternative CSO Wholesalers who may have supply immediately available in that location or region.

Delivery guarantee requirements and stock supply redundancy obligations and responsibilities of any exclusive-direct suppliers or distributors who are not party to the Government's Community Service Obligation have yet to be established by the Department of Health.

In the cases where shortages have the potential to be of a longer duration, Sponsors may work with CSO Wholesalers to coordinate the imposition of maximum sale allocations on medicines that are experiencing a supply shortage, to limit the impact of possible spikes in demand driven by knowledge of a shortage.

It should be noted that the therapeutic goods legislation does not extend to TGA having control over distributors or the distribution of medicines.

Role of consumer organisations

Consumers, patients and their carers need timely access to medicines. They also require access to information to support their access to and quality use of their medicines from their health professional and other sources. In the case of a medicine shortage, consumer organisations, particularly disease-specific consumer groups, may have a role in supporting consumers with information and/or advising medical experts of considerations when alternative regimens or considering substitute medicines or therapeutic alternatives.

Role of sponsors

Sponsors maintain continuity of supply for a medicine through accurate demand forecasting, maintenance of appropriate levels of safety-stock, and identification of backup supply routes. When a disruption to the supply arrangements for a medicine occurs, sponsors routinely:

- Assess supply and demand gaps and develop a response
 - Implement contingency planning to reduce the supply disruption
 - Assess the supply disruption to determine if and when the supply is reasonably likely to impact on consumers
 - Implement management activities to secure supply including applying to the TGA for regulatory options for the supply of substitute medicines or therapeutic alternatives.
- Implement communication activities to the supply chain that are proportionate to the impact on consumers, which may include:
 - Publishing of information on sponsor websites
 - Activating public/health professional information hotlines
 - Communicating directly with:

§ Wholesalers

- § Prescribers and pharmacists (for example, 'Dear health professional' letters)
- § The Australian Government Department of Health/states and territory health departments
- § State medicine information hotlines
- § Clinical colleges and health professional peak bodies (e.g. to discuss therapeutic options)
- § Health professional media, public media channels

Historical consultation document

Appendix 4: Medicines Watch List

Antibiotics, antifungals and antivirals

Amphotericin (IV)

Ampicillin

Azithromycin

Benzathine penicillin

Benzylpenicillin

Caspofungin

Cefepime

Cefotaxime

Ceftazidime

Ceftriaxone

Chloramphenicol (IV)

Ciprofloxacin

Colistin

Daptomycin

Dicloxacillin

Erythromycin (IV)

Flucloxacillin

Ganciclovir

Gentamicin (IV)

Imipenem/cilastatin

Linezolid

Meropenem

Metronidazole (IV)

Piperacillin/tazobactam

Posaconazole

Rifabutin

Rifampicin

Teicoplanin

Tobramycin

Valganciclovir

Vancomycin (IV)

Voriconazole

Antidotes and treatments for poisonings

Activated charcoal

Atropine injection

Desferrioxamine injection

Digoxin specific antibodies

Edetate calcium disodium (EDTA)

Ethanol injection

Flumazenil

Folinic acid (calcium folinate) injection

Fomepizole

Idarucizumab

Methylene blue injection

N-Acetylcysteine injection

Naloxone injection

Pralidoxime injection

Sodium nitrite injection

Sodium thiosulphate injection

Emergency and Critical Care

Adrenaline

Alteplase

Amiodarone

Benztropine injection

Calcium chloride 1 g/10 mL*

Calcium gluconate gel

Calcium gluconate injection

Cyproheptadine

Ephedrine

Glucagon injection

Hydralazine

Icatibant

Intravenous lipid emulsion 20%*

Ketamine

Lignocaine

Noradrenaline

Octreotide

Propofol

Sodium bicarbonate 100 mmol/100 mL*

Tranexamic acid

Vitamin K (IV)

Other

Dantrolene injection

Desmopressin

Enoxaparin

Heparin

Oxytocin

Quinine injection

Rasburicase

* Specific concentrations are included for these products as they are they are used in specific emergency situations.

National immunisation program vaccines

Any vaccine on the NIP that includes the following:

Hepatitis A

Hepatitis B

Diphtheria

Tetanus

Acellular pertussis

Haemophilus influenzae type b (Hib)

Inactivated poliomyelitis (IPV)

Rotavirus

Meningococcal C

Measles

Mumps

Rubella

Varicella (chickenpox)

Human papillomavirus (HPV)

Seasonal influenza

Pneumococcal polysaccharide (23vPPV)

Pneumococcal conjugate (13vPCV)

Herpes zoster (shingles)

Other vaccines that include:

Adult diphtheria and tetanus

Meningococcal B

Meningococcal A

Meningococcal W

Meningococcal Y

Specific Immunoglobulins

CMV immunoglobulin

Rh(D) immunoglobulin

Tetanus immunoglobulin

Zoster immunoglobulin

Rabies immunoglobulin

Rabies vaccine

Hepatitis B immunoglobulin

Anticonvulsants

Phenytoin IV

Diazepam IV

Obstetrics

Ergometrine

Antivenoms

Brown snake antivenom

Death adder antivenom

Sea snake antivenom

Taipan antivenom

Polyvalent snake antivenom

Stone fish antivenom

Box jellyfish antivenom

Tiger snake antivenom

Red back spider antivenom

Black snake antivenom

Funnel web spider antivenom

S3 medicines

Adrenaline injection

Chloramphenicol

Glyceryl trinitrate

Macrogols

Naloxone injection

Salbutamol inhaler

Ulipristal

Appendix 5: The utilisation of provisions in the *National Health Act 1953* (PBS listed medicine supply guarantee)

Granting price increases and exemptions where prices of medicines have become unviable and discontinuation of supply is planned.

The Department of Health has taken over the former functions of the Pharmaceutical Benefits Pricing Authority to grant price increases to clinically needed Pharmaceutical Benefits Scheme (PBS) medicines, where the costs of supply have increased and continued supply of that medicine may be threatened.

In implementation of this measure, it is critical:

- That pharmaceutical companies provide accurate cost of goods and supply information to make an assessment of a reasonable price increase.
- That accurate information is obtained from pharmaceutical companies about their intention to de-list if a price increase is not granted.
- To strike a balance between retaining clinically needed medicines and reasonable prices where there is no economic evaluation available for those medicines.

Temporary PBS listing of unregistered medicines where a registered medicine is in short supply

When a temporary supply of an overseas-approved product has been granted by the TGA under section 19A of the *Therapeutic Goods Act 1989*, the Department will negotiate a price for a temporary product to ensure that it can be listed on the PBS.

In implementation of this measure, it is critical:

- To ensure that companies are not being paid (on a longer term basis) more for temporary supply of a different brand of medicine, especially in circumstances where they are the main/sole supplier for the permanently listed PBS item.
- To best evaluate how much to pay for temporary listings when there is no formal economic evaluation for that medicine.
- To encourage the temporary supplier to seek permanent registration on the Australian Register of Therapeutic Goods if the PBS medicine has been permanently discontinued, to ensure that it is a temporary measure rather than an ongoing arrangement.

Requirements that manufacturers guarantee supply of certain medicines for up to 24 months after listing and that they notify the Minister's delegate if they are unable to supply

Guarantee of supply provisions were first included in the *National Health Act 1953* with effect from 1 August 2007. The purpose of the provisions is to require new responsible persons (suppliers) of F2 drugs to guarantee supply for 24 months, or until another new brand of that

drug is listed, and to notify the Minister if they are unlikely to be able to supply during that initial 24 month period.

The provisions were inserted to address a concern that one brand might be listed to cause a price reduction affecting competitors with no intention to supply. It was intended to deter sponsors from entering the Australian market without a viable business model able to support their long term participation in the market.

The supplier of a guaranteed brand must notify the Minister where there is an issue with supply (refer to section 99AEG of the National Health Act 1953). There are criminal penalties for non-compliance. In situations where a supplier has failed to meet their obligations, the Minister has discretion (under section 99AEH) to: delist the relevant brand, delist any of the supplier's other PBS listed brands or refuse to list a new brand from that supplier.

It is a condition of PBS listing that a supplier agrees to the "Assurance of Supply" arrangements, including that they have sufficient stock to meet demand. There is also a "Guarantee of Supply" form for notifying the Department if the supplier is having, or is likely to have, supply issues.

In implementation of this measure it is critical to note that:

- The intention of the guarantee of supply provisions was not to address supply shortages. Supply shortages are more likely to take place after the 24 month period has elapsed.

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Historical consultation document

Historical consultation document

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