Design for patient safety

A guide to the design of dispensed medicines

Edition 1
2007

About this publication

This guide to the design of dispensed medicines is one of a series of design publications produced by the National Patient Safety Agency (NPSA).

Other publications in the NPSA *Design for patient safety* series:

NPSA in collaboration with the Helen Hamlyn Centre, Royal College of Arts. *A guide to the graphic design of medication packaging (second edition).* (2007).

NPSA in collaboration with Lucid Design. *A guide to the design of the dispensing environment.* (2007)

NPSA. *Future ambulances.* (2007).

NPSA in collaboration with the Helen Hamlyn Centre, Royal College of Arts. *A guide to the design of injectable medicines.* (2008).

Research and methodology

Information in this guide was collated over a 2-year period and involved a NPSA team of pharmacists and a pharmacy technician with combined experience in community, primary care, hospital and academic pharmacy. Publications from within and outside the healthcare industry were reviewed in preparing this guide. The project team also included two designers from Lucid Design who had experience of undertaking design projects across a range of industries, including healthcare.

A wide range of stakeholders including healthcare professionals, representatives of professional and commercial organisations, patients, carers and patient organisations contributed to this research. Visits were undertaken to community and hospital pharmacies, a number of which had been identified as using design effectively to support innovative practice.

Foreword

Hemant Patel, President, Royal Pharmaceutical Society of Great Britain

We need to take an overview of safe systems and how medicines are used in practice. This series of design guides provides practical examples of how professionals working in dispensaries can put this into practice.

Patient safety needs to be the number one priority in all dispensaries, regardless of the sector in which they operate. The care and safety of patients and the public has always been of prime concern. It is with this in mind that I welcome this guide as one of a series of design publications produced by the National Patient Safety Agency (NPSA).

Other safety critical industries have recognised that design is a very effective method of improving the safety, effectiveness and efficiency of their activities. The healthcare industry has been slow in using design to improve delivery of care to patients; it needs to learn from these other industries and apply some of their principles to the safe delivery of medicines.

Healthcare will always carry risks, human beings are fallible. However, harm to patients should not be viewed as an acceptable part of modern healthcare. Sir Liam Donaldson, Chief Medical Officer for England, recommends the need to encourage and support competent, conscientious and safety-conscious health workers in the frontline services. He supports the creation of an environment that motivates and indeed inspires healthcare workers to insist that all care must be as safe as possible.

Dr Keith Ridge, Chief Pharmaceutical Officer for England, has said that we need to take an overview of safe systems and how medicines are used in practice. This series of design guides provide practical examples of how professionals working in dispensaries can put this into practice, in ways that are already in evidence in forward-thinking organisations across the country.

This booklet presents information concerning how better design can be used to make dispensed products safer for patients, whether they are dispensed from community pharmacies, doctor dispensing practices or hospital pharmacies. There are a number of new factors that will impact on the dispensing process, such as; electronic prescription services; auto-id and automation technologies; more responsibilities for pharmacy technicians; and enhanced pharmacy services. The NPSA has tried to incorporate these factors into the design guides.

Organisations, managers and healthcare workers involved in dispensing medicines should use this booklet as a resource to help introduce new initiatives to further minimise harms from medicines. Not all of the suggestions in this booklet will be applicable to every situation, and organisations should implement those suggestions most applicable to their own circumstances as they plan for the future.

Introduction

Introduction

Every year, more than 900 million items are dispensed in England and Wales from dispensaries in hospitals, community pharmacies and some doctors' surgeries.

The vast majority of these are dispensed accurately, in accordance with patients' needs and along with effective written and verbal communication to enable patients to use the medicines safely and effectively. However, harms from medicines can occur if patients cannot easily identify their medicine, or how to use it safely and effectively, and any special precautions required.[1]

The majority of medicines are dispensed for older people or people with long-term medical conditions, including mental, sensory and physical disabilities. Important information on the dispensing label should be presented as legibly as possible. The dispensing label should not obscure important information on the commercial medicine pack, including the Braille labelling intended for patients with poor vision.

The NPSA's work to prevent harm from oral methotrexate treatment revealed that many patients were unable to easily open medicine bottles with child resistant tops or remove medicines from blister packs. Patients are injured each year after using devices such as knives and screwdrivers to open their medicines, which have been supplied in containers that they find difficult to open.[2] These patients require adjustments to the way their medicines are presented e.g. easy tops, or removing medicines from blister packs.

A design solution

The Department of Health 2003 report, *Design for patient safety*, acknowledged that the use of design in other safety critical industries had produced significant improvements in safety, quality and efficiency.[3,4]

The report recommended that a similar approach be taken within healthcare.

Human beings make mistakes because the systems, tasks and processes they work within are poorly designed. Effective design can deliver products, services, processes and environments that are intuitive, simple to understand, simple to use, convenient and comfortable, and consequently less likely to lead to errors. There is a wealth of knowledge and methods from the design world that can be applied to improve healthcare products and processes.

Mistake-proofing is the use of process design to facilitate correct actions, make wrong actions more difficult, make it easier to discover errors that occur, and make it possible to reverse or undo incorrect actions. Mistake-proofing tends to be inexpensive, very effective, and based on simplicity and ingenuity.[5,6]

Japanese industry is credited with creating and formalising zero quality control (ZQC), an approach to quality management that relies heavily on the use of poka-yoke (pronounced POH-kah YOH-kay) devices. Poka-yoke is Japanese for mistake-proofing. A poka-yoke device is any mechanism that either prevents an error from being made or makes the error obvious at a glance.[7]

In his book, *The design of everyday things*, Donald Norman uses the term 'user centred design' to describe design based on the needs of the users.[8] It involves simplifying structured tasks and processes, making things visible, getting the mapping right, exploiting the powers of constraint and designing to minimise error.

The information in this booklet applies these design principles to dispensed medicines. By working with stakeholders, including both patients and health professionals, and by visiting dispensaries in both primary and secondary care, we have identified best practice. There is very little research of the use of design in healthcare, and research on the design of dispensed medicines is no exception to this. This booklet identifies the need for more research in this area in the future.

Websites

Darnell MJ. *Bad human factors designs*. (2006). Available at:
www.baddesigns.com

Grout J. *Mistake proofing center*. (2006). Available at:
www.mistakeproofing.com

Assured Quality. C*ompany website.* Available at: **www.assuredquality.com**

Norman D. *Don Norman's jnd website.* Available at: **www.jnd.org**

NPSA. *Mistake proofing healthcare processes.* (2004). Available at:
www.npsa.nhs.uk

1

The dispensed medicines flow diagram

The dispensed medicines flow diagram

This booklet looks at some key elements of the labelling and presentation of a dispensed medicine, including:

- setting up your label;
- applying the label:
- dispensing bags;
- aiding the use of medicines.

The first sections provide advice that will assist professionals involved in dispensing with making changes to their practices to improve the readability of labels and positioning of labels on medicines.

Labelling and presenting a dispensed medicine

2. Setting up your label

3. Applying the dispensing label to medicines

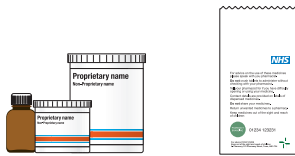| 2.1	2.2	2.3	2.4	2.5	2.6	3.1
Essential information • Legal requirements • Additional information	**Label size** • Space on manufacturer's pack • Size of label	**Font selection** • Fonts not to use • Recommended font	**Label layout** • Text alignment • Printing alignment • Size and weight of font • Use of capitals • Brand marks and logos	**Paper quality** • Paper surface • Paper thickness	**Print quality** • Dot matrix printing • Laser printing • Thermal printing	**Applying the label and general principles** • Barcodes • Placement of label on pack • Breaking seals

The final section provides suggestions on how to promote the safe use of medicines and enable patients to access their medicines more easily.

4. Aids to help patients use their medicines

3.2 - 3.8	**3.9**	**4.1**	**4.2**	**4.3**	**4.4**
Applying the dispensing label to medicines	**Dispensing bags**	**Patient held information**	**Dosage information**	**Measuring and administering medicines**	**Opening medicine containers**
• Labelling tablet and capsule cartons	• Making use of space on bags	• Steroid card	• Recording devices	• Labelling	• Child resistant closures (CRCs)
• Braille		• Methotrexate treatment	• Medicines reminder charts	• Pill splitters	• Push and twist
• Liquid medicines		• Anticoagulant therapy record	• Patient information leaflets	• Tube squeezers	• CRCs with keys
• Topical products			• Pen and paper	• Eye drops	• Snap-off
• Inhalers			• Tacki liquid	• Inhalers	• Non-CRCs
• Eye products			• Compliance boxes and monitored dosage systems		• Blister packs
• Other small packs					
• Large print labels					

2

Setting up your label

This section provides guidance on setting up dispensing labels, the paper used for labels, printer technology, choosing the right font and improving the label layout. It brings together ideas from printing and design, takes account of guidance from the Royal National Institute of Blind People (RNIB) on printing, and acknowledges legal requirements and the general size of dispensing labels.

2.1 Essential information

Requirements

Dispensed medicines supplied as a result of a prescription, written order or patient group direction must be labelled before being given to patients. There is legislation stating what information must be included on labels applied to dispensed medicines.[9] The boxes opposite show what information is a legal requirement and what additional information would be considered good practice.

N.B. This guide is concerned with presentation rather than specific wording used on labels.

The principles of plain wording are set out in a *Systematic Review of written medicines information.*[10]

Labelling of dispensed medicines: legal requirements

1 The name of the person to whom the medicine is to be administered.

2 The name and address of the person who sells or supplies the medicinal product.

3 The date of dispensing.

4 Where the product has been prescribed by a practitioner such of the following particulars as s/he may request:

   a   the name of the product or its common name;

   b   directions for use;

   c   precautions relating to the use of the product. If the pharmacist is of the opinion that any of those particulars are inappropriate and having taken necessary steps to consult with the practitioner, he is unable to do so, he may substitute other particulars of the same kind.

5 The words 'Keep out of the reach of children' or words of direction bearing a similar meaning; the Royal Pharmaceutical Society recommends that it is good practice to use the phrase 'Keep out of the reach and sight of children' on dispensing labels.

6 Use the phrase 'For external use only' within a rectangle if the product is not on a general sale list and is an embrocation, liniment, lotion, liquid antiseptic or other liquid preparation or gel and is for external use only.

Recommendation

Additional information considered good practice

Labelling of dispensed medicines must be clear and legible and include the details required by the labelling regulations under the Medicines Act and, where appropriate, cautionary and advisory labels recommended by the current British National Formulary.[11]

Comment

Some pharmacies use 'dispensed by' and 'checked by' labels to indicate that these actions have been performed, and who has performed them.

These labels do not differentiate between the various steps of the process, and could be redesigned to better match the dispensing process.[12]

Additional information for safer dispensing
1 Dispensed and clinical check boxes
2 Pharmacy telephone number
3 For advice call
4 Where more than one medicine pack of the same product has to be supplied, number these packs 1 of 2, 2 of 3, 3 of 3, etc.

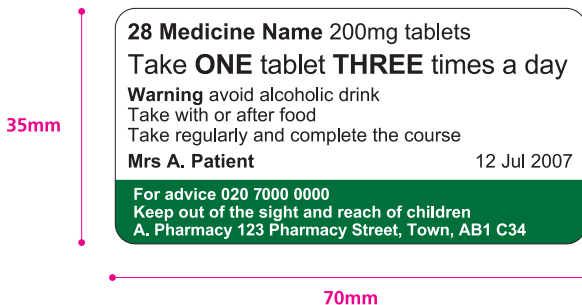|	
Clinical check	Dispensed by
Accuracy check	Counselling

2.2 Label size

Issues

- Small labels inhibit the clear communication of information.

- Labels are only just large enough for essential information at a reasonable text size.

- Smaller labels mean smaller text sizes.

- 'Medicine name' in the drawings throughout this booklet is intended to indicate the generic name or, where appropriate, the proprietary name of the medicine.

Recommendations

• Dispensing labels should be no smaller than 35mm x 70mm to enable the use of font sizes that can be easily read.

• The NPSA has recommended to the Medicines and Healthcare products Regulatory Agency (MHRA) and the pharmaceutical industry that a space of 35mm x 70mm should be available on commercial patient packs to enable a dispensing label to be applied.[13]

35mm

28 Medicine Name 200mg tablets

Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

70mm

2.3 Font selection

Issues

- Font selection may determine whether a patient can read the label or not.

- If a patient and/or their carer is unable to read the label on their medicine, they may not understand, or remember, how to take it correctly.

- Some fonts are not freely available or their use may incur a royalty fee.

- Some fonts are more difficult to read than others.

~~Take one three times daily~~

Univers Extended. Font Size 12pt

~~**Take one three times daily**~~

Eurostile Extended Two. Font Size 12pt

Above *Extended fonts take up too much space*

~~**Take one three times daily**~~

Haettenschweiler. Regular. Font Size 12pt

~~Take one three times daily~~

Bodoni poster compressed. Font Size 12pt

Above *Condensed fonts are difficult to read*

~~*Take one three times daily*~~

Shelly allegro script. Font Size 12pt

~~*Take one three times daily*~~

Palette. Font Size 12pt

Above *Display fonts are less legible*

Recommendations

- The font used should give the patient the greatest possible chance of reading the label correctly.

- Choose a clear, easy-to-read font, such as Arial.

- The choice of font size should indicate the importance of the information. The direction on how to take the medicine is the most important information on the dispensing label and should be in the largest font size (at least 12pt).

- The name of the medicine is the next most important information and will be repeated on the manufacturer's pack, when a manufacturer's patient pack is dispensed.

Action

- Check which font your printer is using and change it to a more legible font where necessary.

Take one, three times daily
Arial regular 12pt
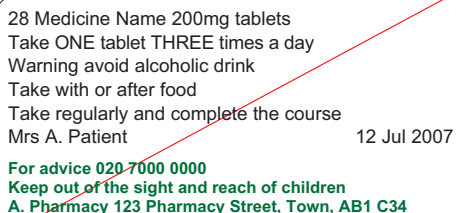
Above *Arial is easy to read and is standard on all personal computers (PCs)*
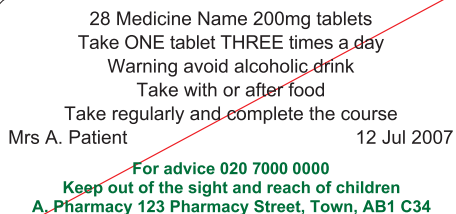
2.4 Label layout
2.4.1 Bad examples

Issues

28 Medicine Name 200mg tablets
Take ONE tablet THREE times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
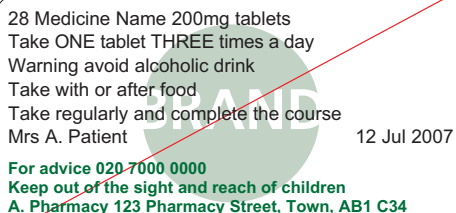**A. Pharmacy 123 Pharmacy Street, Town, AB1 C34**

The most important information should stand out the most.

Using one size and weight of font makes it difficult to find the most important information.

28 Medicine Name 200mg tablets
Take ONE tablet THREE times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Text that is centred is more difficult to read than left-aligned text.

28 Medicine Name 200mg tablets
Take ONE tablet THREE times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Ghost logos can obscure essential information.

Issues

28 MEDICINE NAME 200MG TABLETS
TAKE ONE TABLET THREE TIMES A DAY
WARNING AVOID ALCOHOLIC DRINK
TAKE WITH OR AFTER FOOD
TAKE REGULARLY AND COMPLETE THE COURSE
MRS A. PATIENT   12 JUL 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Capitals are difficult to read.

8 Medicine Name 200mg tablets
ake ONE tablet THREE times a day
Warning avoid alcoholic drink
ake with or after food
ake regularly and complete the course
Mrs A. Patient   12 Jul 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Ensure your paper is properly aligned so that information is not missed off.

28 Medicine Name 200mg tablets
Take ONE tablet THREE times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007
BRAND **For advice 020 7000 0000**
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Brand marks take up useful space and mean that type has to be reduced in size.

2.4 Label layout
2.4.2 Good examples

Recommendations

- Consider the heirarchy of information and make sure that the most important information stands out more clearly than the rest.

- Align information to the left hand side.

- Avoid using ghost logos on labels.

- Do not overuse capital letters.

- Ensure paper is properly aligned.

- Avoid brand marks that take up valuable space.

28 Medicine Name 200mg tablets

Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Recommendations

- Increasing the size or the boldness of the most important information makes it more accessible.

- Make the most important information stand out.

Action

- Check your current labels against the examples on this page and consider how you can improve the layout.

- Contact your software supplier to change the look of your default label.

Arial 10pt

Arial 12pt

28 Medicine Name 200mg tablets

Take **ONE** tablet **THREE** times a day

Arial bold

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007

Arial 8pt

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Arial 7pt

Minimum label size 70mm x 35mm

Arial 12pt

1

Medicine Name One row. 35 characters
Directions. Two rows. 29 characters per row. 58 characters in total.

Alerts. Three rows.
43 characters per row.
129 characters in total.
Patient's Name   Date

Dispensary contact details. Three rows.
49 characters per row.
147 characters in total.

Arial 10pt, one row,
35 characters per row,
35 characters in total

Arial 8pt

Arial 7pt

Minimum label size 70mm x 35mm

2

Medicine Name Two rows. 35 characters
per row. 70 characters in total.
Directions. Two rows. 29 characters
per row. 58 characters in total.

Alerts. One row. 43 characters per row.
Patient's Name   Date

Dispensary contact details. Three rows.
49 characters per row.
147 characters in total.

Arial 10pt

Arial 12pt

Arial 8pt

Arial 7pt

2.5 Paper quality

Issues

- The quality of paper chosen for printing labels can have a significant impact on the readability of the label.

- Yellowing paper that is thin will make information unreadable when combined with poor printing technology.

- Placing a label made of poor quality paper on a pack where the only space for labelling has a barcode in it will make the label information more difficult to read.
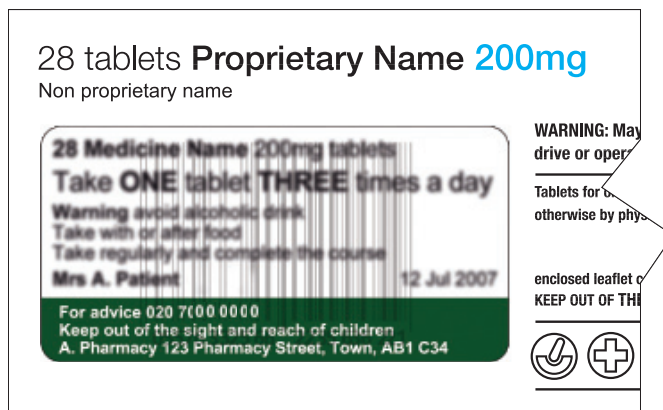
Recommendation

- Use good quality white paper for labels.

Action

- Next time you purchase labels look at the paper quality options and consider upgrading to a better quality paper.

---

28 Medicine Name 200mg tablets

Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

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28 tablets **Proprietary Name** 200mg

Non proprietary name

28 Medicine Name 200mg tablets

Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

WARNING: Ma
drive or oper

Tablets for ora
otherwise by phys

enclosed leaflet
KEEP OUT OF TH

2.6 Print quality

Issues

- The quality of printing makes a big difference to label readability for patients and carers.

- Dot matrix printers are still in use in parts of the NHS. The quality of label these printers produce is very poor compared with laser or thermal printers. The print on dot matrix labels can become very faint and difficult to read if the ribbon is not changed regularly.

28 Medicine Name 200mg tablets
Take ONE tablet THREE times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Above Dot matrix print
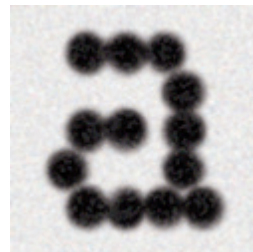
28 Medicine Name 200mg tablets
Take ONE tablet THREE times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Above Dot matrix print with an old ribbon

Recommendations

- Use thermal or laser printers where you can.

- If you must use dot matrix, change the ribbon regularly to avoid faint type.

Actions

- If using a dot matrix printer, review how often you change your printer ribbon.

- If upgrading your computer system, consider the positive impact for patients of using a laser or thermal printer.

28 Medicine Name 200mg tablets
Take **ONE** tablet **THREE** times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Above Laser

28 Medicine Name 200mg tablets
Take **ONE** tablet **THREE** times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Above Thermal

3

Applying dispensing label(s) to medicines

This section provides a set of general principles for applying dispensing labels to medicines. There is advice on placement of dispensing labels on a variety of medicine packages, including tablets and capsules, liquid medicines, inhalers, creams and ointments, and small packs.

It addresses the practical issues that result from the lack of suitable space for a dispensing label on many manufacturers' packs, the use of secondary packaging such as boxes over bottles of liquid medicines, the size and shape of medicines packs, and the use of Braille. It also highlights the benefits and challenges associated with the use of large print labels.

3.1 Applying the label

Issues

Obscuring important information
Manufacturers do not always provide adequate space for the application of a dispensing label.

When dispensing labels are applied to these packs, important information such as the expiry date, warnings or advice to store the medicine in a refrigerator may be obscured from view.

Tiling labels
Some label-printing systems have a large print or zoom function to print larger font labels for patients with poor sight. These may run to two or more labels making it difficult to label smaller packs without covering important information

Multiple packs
Medicines supplied in multiple packs may result in patients not realising that each pack contains the same medicine. Multiple packs can become separated if taped or boxed together, potentially resulting in unlabelled containers.

28 tablets **Proprietary Name 200mg**

28 Medicine Name 200mg tablets

Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
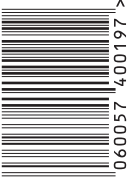Take with or after food
Take regularly and complete the course

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Recommendations

Do not obscure important information

Where there is sufficient space, place the dispensing label so that it does not obscure important information. Where this is not possible, consider the use of a flag label so that important information remains legible.

Barcodes

Avoid placing dispensing labels over barcodes. In the future, barcodes will be used after a medicine is dispensed to identify it when recording a medicine history and prior to medicine administration in hospitals. Medicine manufacturers should not include barcodes in the space reserved for placement of the dispensing label.

Place label on a flat surface

Where possible place the label on the flat surface of a box. Avoid wrapping it around the box.

Label the primary container

Labelling the primary container (e.g. bottle or inhaler) avoids confusion by ensuring that information about the name of the patient and directions for use are always available and not discarded with the secondary container (outer carton).

Breaking seals

If you need to break the seal of a secondary pack to enable labelling of the primary pack, this information should be conveyed to the patient or their carer when the medicine is given to them.

Poor eyesight

For patients who have poor eyesight, if a box has Braille lettering on it do NOT place the dispensing label over the Braille.

Multiple packs

Always label each container when a medicine is supplied in multiple packs. Include information to indicate that each container is one of a number holding the same medicine.

Actions

- Review your standard operating procedures (SOPs) to reflect these general principles.

3.2 Labelling tablet and capsule cartons
3.2.1 Where space is made available

Issue

- The space for the dispensing label that the manufacturer has provided is not used and the placement of the dispensing label covers important information on the manufacturer's pack.
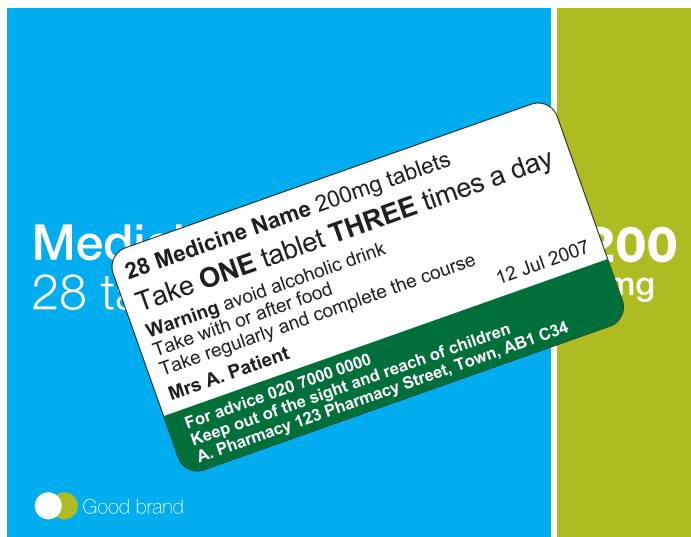
Recommendation

• Label using the space provided. This is usually on the back of manufacturer's patient packs.

Actions

• Where possible, label the back of the box in the space provided.

Note: The NPSA has issued guidance to the pharmaceutical industry recommending that they should provide a space for the most common label size: 70mm x 35mm.

This space should not have a barcode in it.

---

28 tablets **Medicine name**   **200mg**

28 Medicine Name 200mg tablets

Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

5 060057 400197 >

Each tablet contains Medicine name 200mg. Also contains E110

WARNING: May cause drowsiness. If affected do not drive or operate machinery, avoid alcoholic drink

Tablets for oral administration.

Please read the enclosed leaflet carefully before use.

KEEP OUT OF THE REACH OF CHILDREN. Store below 25°c. Protect from light

3.2 Labelling tablet and capsule cartons
3.2.2 Where space is inadequate

Issues

- The manufacturer's pack has insufficient space for the dispensing label and contains barcode information that may be required after the medicine has been dispensed.

- The placement of the dispensing label has covered important information on the manufacturer's pack.

28 tablets **Proprietary** Name **200mg**

28 Medicine Name 200mg tablets
Take **ONE** tablet **THREE** times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

e 200mg. Also contains

If affected do not drive
lic drink

Please read the enclosed leaflet carefully before use. KEEP OUT OF THE REACH OF CHILDREN. Store below 25°c. Protect from light

Recommendations

- Place the label on the front of the box so that important information, that is not available elsewhere on the manufacturer's pack, is not covered.

- Place the label on a flat surface under the name of the product.

Actions

- Review where you place your dispensing labels on packages and consider whether they could be placed more effectively.

- Review your SOPs to reflect these changes

Proprietary Name

Medicine Na

200
mg

200mg

28 Tablets

28 **Medicine Name** 200mg tablets
Take **ONE** tablet **THREE** times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34
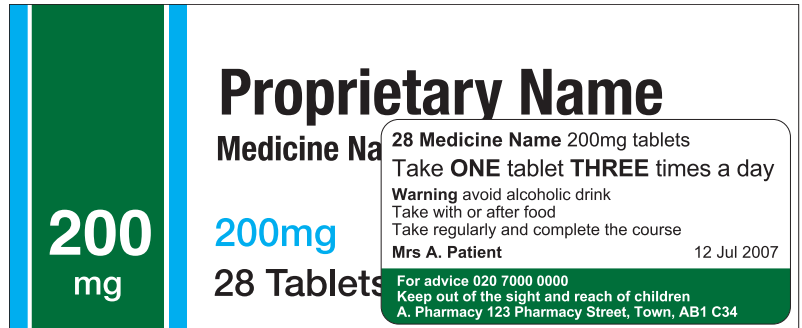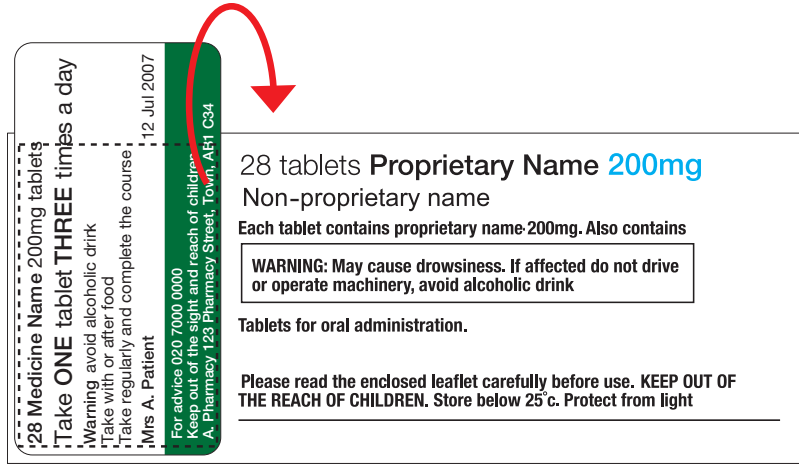
3.2 Labelling tablet and capsule cartons
3.2.3 Where space is inadequate

Issue

- Space provided by the manufacturer is so small that the dispensing label has to be folded around the box. Information on labels that are folded around the medicine pack is difficult to read.

28 Medicine Name 200mg tablets

Take ONE tablet THREE times a day

Warning avoid alcoholic drink

Take with or after food

Take regularly and complete the course

Mrs A. Patient

12 Jul 2007

For advice 020 7000 0000

Keep out of the sight and reach of children

A. Pharmacy 123 Pharmacy Street, Town, AR1 C34

28 tablets **Proprietary Name 200mg**

Non-proprietary name

Each tablet contains proprietary name 200mg. Also contains

WARNING: May cause drowsiness. If affected do not drive or operate machinery, avoid alcoholic drink

Tablets for oral administration.

Please read the enclosed leaflet carefully before use. KEEP OUT OF THE REACH OF CHILDREN. Store below 25°c. Protect from light

Recommendations

- Manufacturers should provide space for a minimum label size of 70mm x 35mm

- If there is insufficient space provided by the manufacturer, place the label on the front under the name of the product, so that essential information that is not available elsewhere on the pack is not covered.

Actions

- Where possible, buy packs with sufficient space for your dispensing labels.

200
mg

Proprietary Name

Medicine Na

200mg

28 Tablets

28 **Medicine Name** 200mg tablets
Take **ONE** tablet **THREE** times a day
Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course
Mrs A. Patient   12 Jul 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

3.2 Labelling tablet and capsule cartons
3.2.4 Braille

Issue

- Products that have Braille labelling tend to have Braille on the front of the box. Placing the label over Braille will obscure it, making it more difficult for patients who read Braille to identify their products.

Recommendations

- If the patient needs Braille, do not place labels over Braille.

- Best practice is to have a manufacturer's pack where there is space, free from Braille, where the dispensing label can be placed.

Actions

- When labelling a medicine for a blind or partially sighted person, check if they read Braille. If they do, ensure that you place the label away from the Braille embossing.

- Where you cannot follow all NPSA recommendations, place the label on the medicine pack in a way that best meets the needs of the patient.

3.3 Oral liquid medicines

Issues

- Labels covering essential information, including the proprietary and/or non-proprietary name.

- Label is placed on the box, which is then thrown away.

- Label placed over safety information, such as 'For external use only'.

Medicine Suspension 10mg/500ml
Take **ONE** 5ml spoonful **THREE** times a day when required
Take with or after food, **Warning** avoid alcoholic drink.
Shake the bottle   12 Jul 2007
Mrs A. Patient
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

dicine Suspension 10mg/100ml
ke **ONE** 5ml spoonful **THREE** t
day when required
e with or after food, **Warning** avoid alcohol
ake the bottle   12 Ju
s A. Patient
or advice 020 7000 0000
eep out of the sight and reach of children
. Pharmacy 123 Pharmacy Street, Town, AB1 C

Recommendations

- Label the bottle: this allows for physical checks used as part of the checking process with the patient. For example, is this liquid supposed to be clear or should it look opaque? It also ensures patients do not throw away the label with the outer packaging.

- The dispensing label should be placed so that it does not cover information, for example, indicating that a liquid is 'For external use only'.

Actions

- Label the bottle not the box.

- Do not place dispensing labels over important information such as 'For external use only'.

- Review your dispensing SOPs to reflect these recommendations.

Proprietary Name

Medicine Suspension 10mg/500ml
Take **ONE** 5ml spoonful **THREE** times a day when required
Take with or after food, **Warning** avoid alcoholic drink. Shake the bottle
**Mrs A. Patient**   12 Jul 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Proprietary Name

Medicine Suspension 10mg/100ml
Take **ONE** 5ml spoonful **THREE** times a day when required
Take with or after food, **Warning** avoid alcoholic drink. Shake the bottle
A. Patient   12 Jul 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

3.4 Topical products

Issues

- Dispensing labels that cover essential information, including the proprietary and/or non-proprietary name.

- If medicine tubes are labelled in this way, the label will be obscured if the tube is rolled up during use.
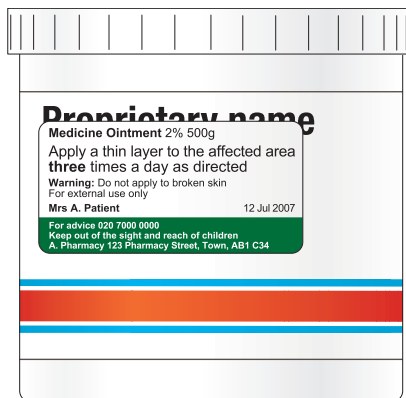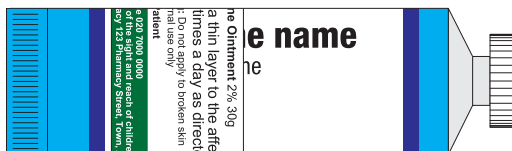
Recommendation

- Place the label longitudinally on the primary packaging (i.e. the tube or jar), on the front of the pack under the medicine name.

Actions

- Label the tube or jar.

- Do not place dispensing labels over important information such as 'For external use only'.

- Review your dispensing SOPs to reflect these recommendations.

Proprietary name
Medicine name

Medicine Ointment 2% 30g
Apply a thin layer to the affected area
three times a day as directed
Warning: Do not apply to broken skin

Proprietary name

Medicine name

Medicine Ointment 2% 500g
Apply a thin layer to the affected area
three times a day as directed
Warning: Do not apply to broken skin
For external use only
Mrs A. Patient   12 Jul 2007
For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34
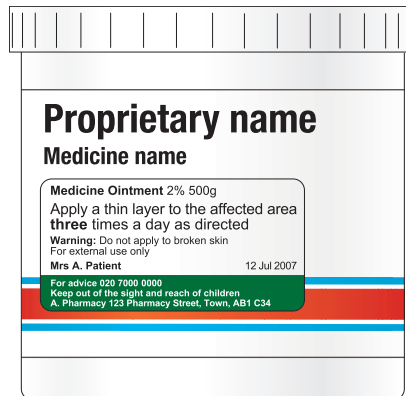
3.5 Inhalers

Issues

- Important information on the dispensing label may be lost if the outer carton is discarded. This is particularly true if a child takes an inhaler to school. It may also be a significant problem where patients have more than one inhaler or in households where more than one person uses inhalers.

- If the label is discarded with the outer packaging, there may be no indication of the date of dispensing and dosage instructions that could be used by health professionals to assess usage of the inhaler.
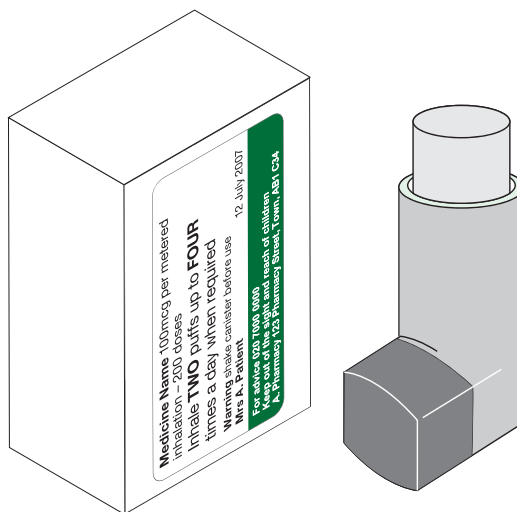
Recommendations

- Place the label on the inhaler. This may require breaking the outer seal of the container. Explain this when counselling the patient about their medicine.

- Flags can also be attached to inhalers where their shape means a conventional label cannot be attached, or where it is important that vital recognition symbols are not obscured.

- It is important that the correct use and dose is reinforced by placing the dispensing label on the inhaler.

- It is also important to have the dispensing date on the inhaler to help determine how long the patient has been using the individual inhaler.

Actions

- Review SOPs to reflect the recommendations above.

Medicine Name 100mcg per metered inhalation – 200 doses
Inhale **TWO** puffs up to **FOUR** times a day when required
Warning shake canister before use
Mrs A. Patient   12 July 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34
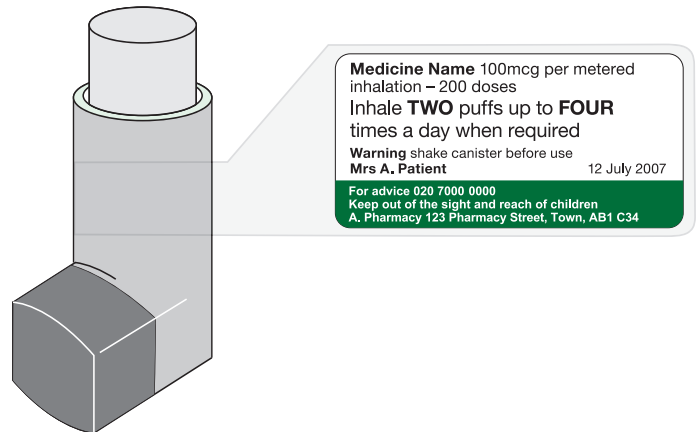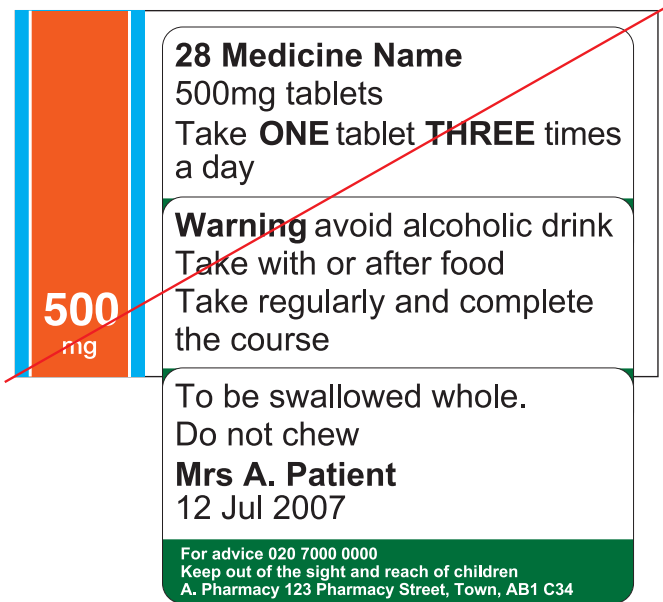
3.6 Eye products

Issues

- Eye drop bottles are very small: using the standard pharmacy label and placing it on the pack can cover all of the information on the pack.

- Covering all the information on the pack means there are no visual clues for the person checking the dispensed item or for the patient or carers who may have to select the item from a number of similar products.

- Many patients being treated for long-term eye conditions, such as glaucoma, may use two or more different eye drops on a regular basis. Other patients may have both eye and ear drops.

- In some families where more than one person is using eye or ear drops, there may be confusion over which product is intended for use by which patient. Expiry date information will also be very difficult to read.

edicine Name 2

t ONE drop T

ot to be tak

A. Patient

vice 020

Recommendations

Use of flagged labels ensures that:

• important information on the dispensing label can be read easily;

• essential information on the eye drop bottle is not covered;

• expiry date information can be clearly displayed;

• design and colour differentiation of individual eye drops reinforces the information on the dispensing label to enable correct product selection.

PROPRIETARY NAME
non -proprietary name
EYE DROPS B.P.C
0.3% W/V
10 ml   P
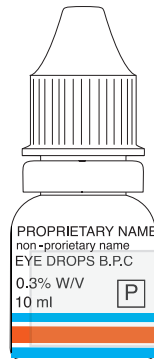
Medicine Name 10ml

Put **ONE** drop in each eye
THREE times a day

Not to be taken

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Actions

• Consider using flag labels where appropriate for your patients.

• Review SOPs to reflect this recommendation.
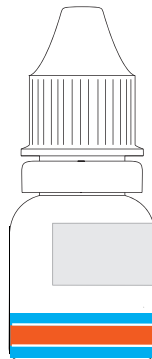
Use within four weeks of opening**.**

Date of opening:

3.7 Labelling other small containers

Issues

- Dispensing labels can obscure essential information for patients.

- Information on folded dispensing labels is difficult to read.

- Labels can cover information that helps with accuracy checking and product selection when the medicine has been dispensed.

- Expiry date information will also be difficult to read.

Recommendations

- Use flags to label small packs, such as tiny tubes of creams/ointments or even small tablet boxes.

- The use of flags aids visibility of information and recognition of the product.

- If using flags for small packs for a patient who is a Braille reader, do NOT place the flag over Braille.

- Expiry date information can be displayed clearly.

Actions

- Adjust SOPs to accommodate use of flagged labels where appropriate

Medicine Ointment 5% 2g

Apply a thin layer to the affected area **three** times a day as directed

Warning: Do not apply to broken skin
For external use only

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Use within four weeks of opening.

Date of opening:

Proprietary Name
Medicine name

20mg

28 Medicine Name 20mg tablets

Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

Mrs A. Patient   12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

3.8 Use of print labels

3.8.1 Large print labels

Issues

- Some patients have difficulty reading standard sized fonts on dispensing labels.

- Some labelling systems have a large font option in the software, which may result in information flowing onto two labels.

- The RNIB, in its document 'See it right', recommends a 12–14 point TYPE for ordinary print, which is larger than most standard labelling fonts.

- Most patients are unaware that large font labels are available.

- Some computer systems condense warnings or remove some warnings on large print or zoomed labels to ensure no more than two labels are produced for each product. This cannot be supported, as the removal of warnings or cautionary labels may lead to further risks for patients.

28 Medicine Name 200mg tablets

Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

Mrs A. Patient

Do not take if pregnant
Do not drive or operate heavy machinery
Use within one month of opening

12 Jul 2007

Mrs A. Patient

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Recommendation

- Consider offering larger font labels for patients with poor sight. The use of larger print labels may negate the need for other compliance aids.

Actions

- Learn how to use the zoom function on your computer.

- Assess whether the zoom function removes warnings or cautionary labels.

- Assess the needs of your patients and use zoom labels when necessary.

---

28 Medicine Name
200mg tablets
Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

To be swallowed whole.
Do not chew
Mrs A. Patient
12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

Above Large print will often run to two or three labels. The above label is set in 14pt Arial

3.8 Use of print labels
3.8.2 Multiple labels

Issues

- Large print labels are useful tools but can run over to two OR MORE labels.

- These may be too big for some products or cover the entire surface of a pack so that accuracy checking is very difficult. The patient may be unable to see the original pack to verify that it is the correct item for them or see essential information such as the expiry date of the product.

- Some medicines may have more alert warnings than will fit onto one label using NPSA recommended font sizes. In this situation, tiling labels may be one potential solution.

28 Medicine Name
500mg tablets
Take **ONE** tablet **THREE** times a day

Warning avoid alcoholic drink
Take with or after food
Take regularly and complete the course

To be swallowed whole.
Do not chew
Mrs A. Patient
12 Jul 2007

For advice 020 7000 0000
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

500
mg

Recommendation

• One solution is to place a regular size label on the pack with a large identifying number or coloured sticker. Place the multiple zoomed labels on an A4 sheet or print all information on an A4 sheet and mark that sheet with the corresponding identifier.

Note: A4 sheets cannot be used as an alternative to the labelling of dispensed medicines because a label is a legal and professional requirement.

3.9 Dispensing bags

Issue

- Insufficient use is made of dispensing bags to reinforce key safety messages.

PHARMACY
BRANDING

For advice 01234 123456
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34
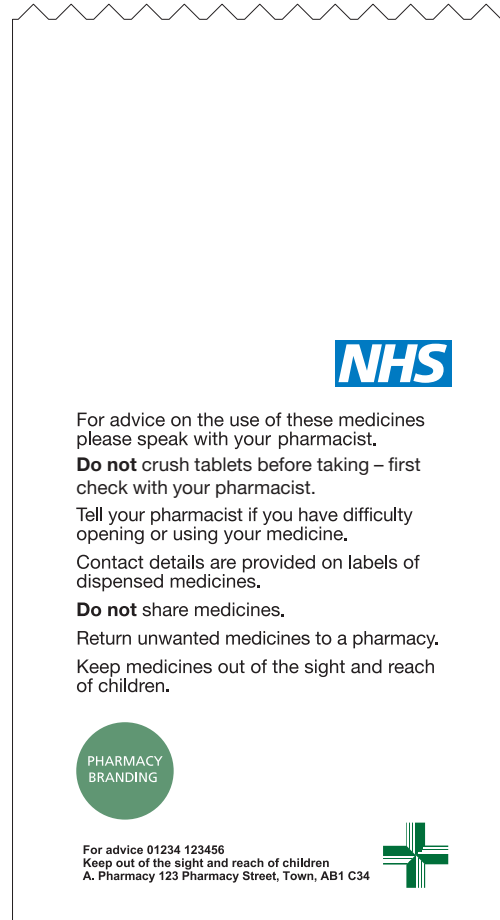
Recommendation

- Key safety information should be printed in large fonts on dispensing bags.

Actions

- When purchasing new bags for medicines, consider including safety messages or 'for information' telephone numbers on the bags.

NHS

For advice on the use of these medicines please speak with your pharmacist.

Do not crush tablets before taking – first check with your pharmacist.

Tell your pharmacist if you have difficulty opening or using your medicine.

Contact details are provided on labels of dispensed medicines.

Do not share medicines.

Return unwanted medicines to a pharmacy.

Keep medicines out of the sight and reach of children.

PHARMACY BRANDING

For advice 01234 123456
Keep out of the sight and reach of children
A. Pharmacy 123 Pharmacy Street, Town, AB1 C34

4

Aids to help patients use their medicines

This section includes many suggestions of ways that professionals involved in dispensing medicines can support patients with their medicine taking. These solutions are grouped into sub-categories of patient held information, opening medicine packaging, and measuring and administering medicines.

Some of these solutions will be helpful for patients with physical or sensory disabilities. The key to finding an appropriate solution is the combination of communication and assessment of patients' needs.

Giving people medicines in packaging they cannot use may prevent them from taking the medicines or lead them to develop unsafe strategies for managing their medicines, e.g. leaving tops off loose tablets or liquids, or having medicines removed from blister packs by family or friends and leaving them loose in the box. There is anecdotal evidence of patients putting medicines loose in their pockets or in envelopes, pouring them into egg boxes or putting them on plates where they might be picked up by children or even the family pet.

Simple adjustments may make medicine taking easier for patients with physical or sensory disabilities. For example, people with dexterity problems would find medicine taking easier if they were supplied with medicines they could easily open, e.g. in bottles with easy tops rather than child resistant closures. Pharmacists are able to do this.

Many of the adaptations and devices on the following pages would come under the definition of reasonable adjustments under the Disability Discrimination Act. Persons involved in dispensing medicines should be willing to make reasonable adjustments when they are in the interests of patient care and safety.

The key to making adjustments for patients is to ensure that they are appropriate. Just because monitored dosage systems are available does not mean they meet the needs of all patients. Sometimes it is the simple adjustments, such as large print labels, pushing medicines out of blister packs or providing easy tops on medicine bottles, that can help patients manage their medicines.

Assessment tools to help professionals measure the needs of their patients are available via the Pharmaceutical Services Negotiating Committee and the National Pharmaceutical Association. Some of the large pharmacy chains have developed or adapted tools for use in their stores.

Action

- Be proactive in assessing patients' needs and presenting medicines and information in a way that ensures safe and effective use.

- Do not wait for patients to ask for a simple adjustment after the medicine has already been supplied.

- Check with the patient or carer when the medicine is being collected that they can open their medicine safely and effectively.

- Where necessary, make adjustments before the medicine is supplied.

Action

- Pharmacists and dispensing doctors should put up posters to alert patients and carers to the availability of easy tops and other simple adjustments.

- If dispensing medicines in bottles for patients likely to have dexterity problems, ask the patient if he/she wants easy tops. Remember to advise them on the need for secure storage of medicines if they have young children or grandchildren.

Above *Patients sometimes use inappropriate devices if they have difficulty opening their medicines*

4.1 Patient held information

Alert cards and booklets for patients provide an important contribution to patient safety. Three key booklets relating to medicines are anticoagulant books (yellow book), methotrexate patient booklets and steroid cards. Dispensing staff should check that patients on these medicines have received these booklets.

They should also check and discuss with their patients information about monitoring and dosage of these medicines in the patient held record.

If the patient has not received a copy of the patient held information, or issues arise from review of the monitoring and dosage information, the dispensing staff should arrange the supply of this information. The prescriber may also need to be contacted to arrange follow-up action to ensure their patients maintained on this therapy are safe.
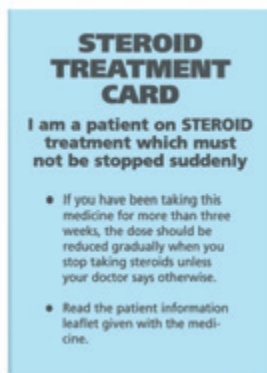
Action

- Ensure patient held information has been provided, reviewed and discussed with the patient.

- Ensure that any issues are followed-up by the appropriate practitioner.

Information leaflets for the visually impaired

The X-PIL website (**www.xpil.medicines.org.uk**) is a service to help pharmacists and their customers to ensure that patient information leaflets (PILs) supplied with medicines are available to everyone, including those with sight problems.

The RNIB medicines information line is free to use and available 24 hours a day, 7 days a week. The number is: 0800 198 5000. By calling this number you can listen to and/or request PILs:

• in large/clear print;

• in Braille;

• on audio CD.

4.2 Auxiliary aids – dosage

Recording devices

Some patients who are blind or partially sighted may benefit from having information about their medicines recorded and available to them. Some use portable recording devices, others would benefit from a talking label – a device that can be attached to a medicines box and has a 60-second recording time. Talking labels have easy-to-use, large buttons, and are re-recordable and reusable.

Medicines reminder charts

Medicines reminder charts are a useful tool to support patients who need reminders to take their medicines. Some pharmacy computer systems can produce these for patients whose details are recorded on the patient medication system.

Patient information leaflets

PILs are provided with medicines and should be given to all patients. However, the font used in these leaflets is sometimes small and can be difficult for some patients to read, especially those whose sight is poor. A new service (see page 63) for leaflets endorsed by the RNIB, MHRA and Association of the British Pharmaceutical Industry (ABPI) ensure that PILs can be provided in large print or as audio.
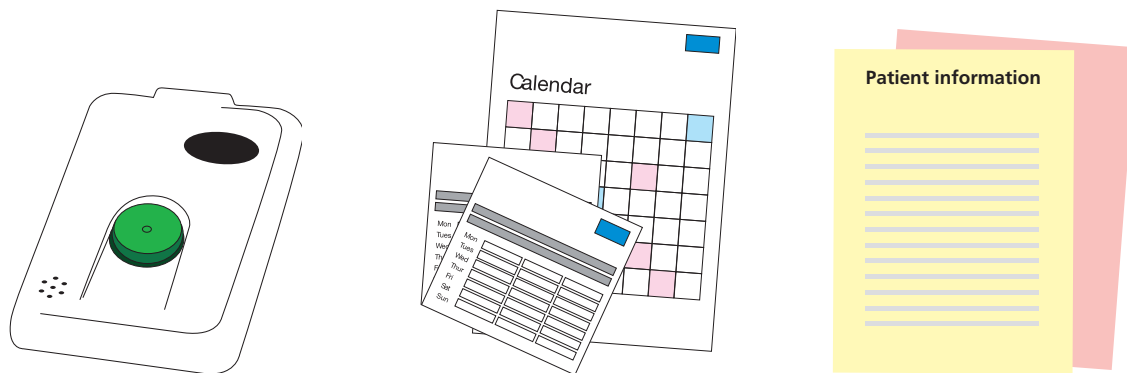
Pen and paper

A simple solution such as providing a pen and paper can be a useful means of communicating with people who have hearing problems.

Tacki liquid

A liquid that enables pharmacists to produce raised marks that can be felt; this may be useful for patients with poor eye sight or for those who are deaf-blind.
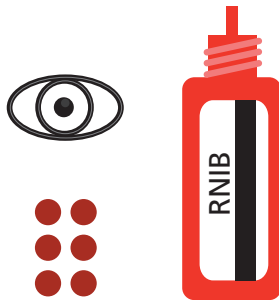
Compliance boxes and monitored dosage systems

These may be useful for some patients who regularly take tablets and capsules and need a prompt to ensure they have taken them.

Compliance boxes are inappropriate for 'when required' medicines or medicines that must be kept in glass bottles, e.g. glyceryl trinitrate.

Discussions with the patient or their carer about the problems with medicine-taking are essential for ensuring the correct product for a patient's needs.
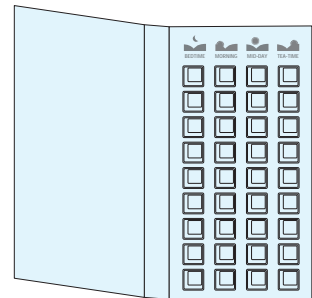
4.3 Auxiliary aids – measuring and administering medicines

Liquids

Medicine spoons and oral syringes are essential tools for measuring liquid medicines. However, for some patients 1ml oral syringes for very small doses, spoons that measure 2.5ml or measuring cups may be more appropriate.
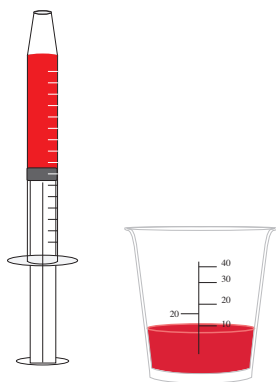
Pill splitters

Where small doses are prescribed and tablets need to be halved this can cause difficulties for some patients. These tablet splitters reduce waste and ensure consistency of dosage because medicines are accurately split.

Tube squeezers

Assistance with creams and ointments is available in the form of tube squeezers. These can simplify squeezing and reduce waste by ensuring complete emptying of the tube.
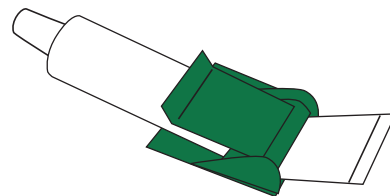
Inhalers

Choice of inhaler is key to effective use. Incorrect use of an inhaler can result in ineffective doses being received and greater morbidity for patients. Some patients may benefit from breath-activated inhalers; others will use spacer devices if they cannot co-ordinate pressing the inhaler and breathing in. There are devices that can help people who cannot manually activate a metred dose inhaler.
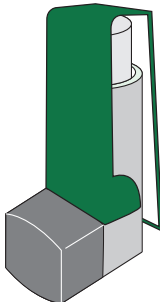
Eye drops

There are numerous devices available to assist in the use of eye drops; some of these are available on prescription. These devices can enable patients to hold eye drop bottles in the correct position and help with squeezing the bottle to apply drops to the eye.
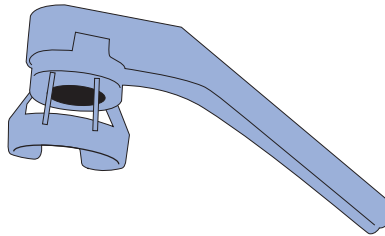
4.4 Auxiliary aids – opening medicine containers

Child resistant closures

There is no such thing as a childproof container. There are however numerous child resistant closures (CRCs) that are used to reduce the risks of accidental poisoning. CRCs work in different ways.

Push and twist

Most CRCs are press and turn or push and twist, requiring patients to press down as they turn the lids to enable the closure to be removed.

CRCs with keys

Some CRCs can be opened using a key. This offers the dual benefit of protecting children (if the medicine and keys are stored securely) and enabling the patient to have easy access to their medicines.
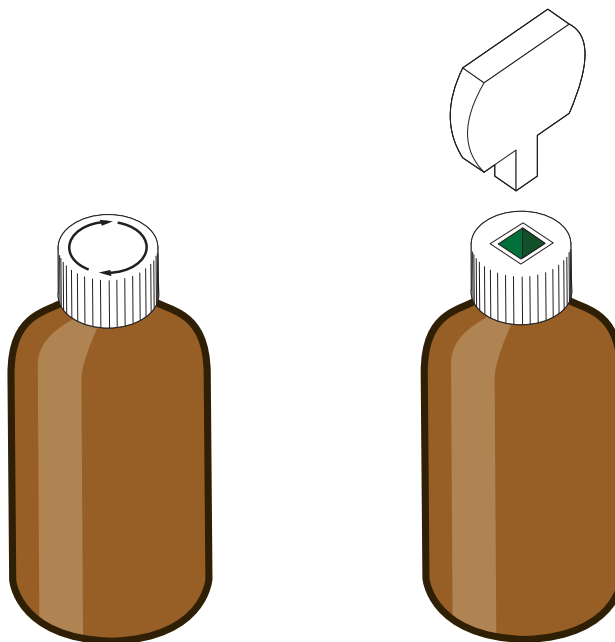
Snap-off

Other CRCs are snap-off tops that involve matching triangles between lid and bottle. Once these triangles are matched the lid snaps off.
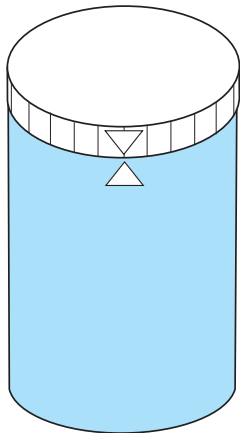
Non-CRCs

Offering patients a choice of closure, including a non-child resistant closure, is a simple solution to improve access to medicines in bottles. Using medigrip lids and winged caps or gripper devices may be useful for some patients with dexterity problems.
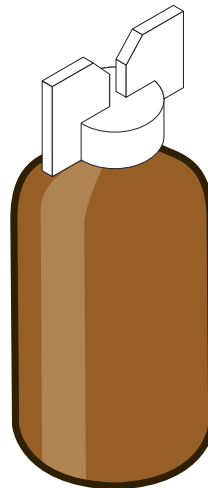
Blister packs

For patients who are unable to remove medicines from blister packaging, professionals may remove medicines from the blisters and put them in ordinary bottles. Alternatively, they might supply a pill popper device such as the 'Pill press' or 'Pill punch out' for patients or carers to remove the medicines themselves.

Action

- Provide patients and carers with information about the auxillary aids that are available to them to assist them with using their medicines safely and effectively.

5

Summary and conclusions
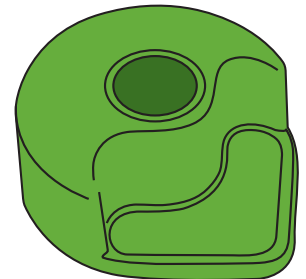
Summary and conclusions

The NPSA recommends that, after reading this booklet, you look at the way you dispense medicines with a critical eye. Think about the small changes that you can make and plan for some of the larger ones.

Many of the suggestions made in this booklet can be enabled quickly and at little cost. By making some of these relatively easy changes you can make a real contribution towards keeping your patients safe whilst they are taking their medicines. Good design saves lives, as has been demonstrated in many other industries, and the NPSA believes this principle applies equally to pharmacy as to any other situation.

There are many differing views about how medicines should be presented to the patient, and it is up to individuals and organisations to decide which suggestions are appropriate to their particular circumstances. The NPSA believes that the suggestions in this book represent ideas that, if incorporated into standard operating procedures and put into practice, would make a significant contribution towards improving patient safety.

The NPSA would be keen to receive your feedback on this publication to build on its knowledge and inform future revisions.

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References and acknowledgements

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Acknowledgements

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