AVOID PROBLEMS FOR PHARMACY ROBOTS
Guide for using barcodes on pharmaceutical products

Introduction

Around one-third of Danish pharmacies currently use a pharmacy robot to handle pharmaceutical products, and the number is increasing. The pharmacies tend to opt for fully-automated pharmacy robotics solutions where the robot both stores and picks the products. When the pharmacy receives a pharmaceutical product, the robot scans the barcode on the product and subsequently measures the product dimensions in order to place the product on a correspondingly dimensioned store-room shelf. When an item is ordered from the counter, the robot locates the pharmaceutical product and sends it to the counter.

Challenge

It is essential that pharmacy robots can read the barcode and measure the product dimensions. It is also important that the product packaging allows it to be sent to the pharmacy counter without damaging or opening the packaging, and without the medicine being dropped by the robot because the packaging is difficult to handle. Consequently the package must be handled manually by a pharmacist. If such problems did not occur, each pharmacy robot would be able to handle 40% more packages. GS1 Denmark and Glostrup Apotek (a local retail pharmacy) have analysed the most common problems for pharmacy robots, and created a guideline for what to avoid – see below.

BARCODE CHECKLIST FOR PHARMACY ROBOTS

1. If a printhead is used to apply barcodes, the printhead must be cleaned and inspected on a regular basis. A dirty or damaged printhead may result in white vertical or horizontal lines in the barcode, rendering it unreadable.

2. Use black lines on a white background to ensure a good barcode readability.

3. Comply with the recommended barcode and quiet zone dimensions (the quiet zone is the white margin to the right and left of the barcode). Otherwise, the scanner will not be able to read the barcode. Quiet zone dimensions depend on the size of the barcode. See quiet zone dimensions at www.gs1.dk

4. Do not use background which can generate reflections, as this may significantly impair the barcode scanning.

5. Use the correct barcode types.

6. If the pharmaceutical product packaging is curved or cylindrical with a diameter of less than 6 cm, the barcode should be placed as a "label" i.e. the bar must be horizontal, as a scanner cannot read a curved barcode.

7. Do not use triangular packaging, as this could make it difficult for a robot to measure the dimensions of the barcodes on triangular packaging.

8. Do not use packaging material that will break during the handling process.

9. Use packaging type with clear, definable dimensions that allow the robot to measure the product dimensions.

10. Select a packaging type that is difficult to handle. If the packaging is difficult to handle, it is difficult to measure the dimensions.

11. Use packaging material through which the underlying barcode is visible, e.g. in connection with packaging with foldable patient information leaflets.

12. Do not use labelling material and glue that is appropriate for the environment (temperature fluctuations and sunlight) and for the wear that the product will be exposed to in the supply chain to prevent the barcode from falling off or becoming unreadable.

13. It is recommended that only one barcode is visible on the packaging, if possible.

14. Place the barcode on an even surface

15. Do not place the barcode under shrink foil, welding seams, on perforations, etc.

16. Do not place the barcode close to or around corners.

Benefits

Pharmacy robots enable many benefits:

- Optimise the pharmacy’s product flow
- Fees up many resources for pharmacies in their daily operations
- Reduces storage errors

This guideline shows what manufacturers of pharmaceuticals should avoid when packaging pharmaceutical products which may be handled by pharmacy robots, to make sure the packages can be handled effectively by pharmacy robots. The guideline can be downloaded at: http://dox.gs1.eu/