# Dealing with the Exceptions and Overcoming the Challenges in the Supply Chain Modernisation Project in Hospital Authority Hong Kong

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Singapore Healthcare Supply Chain Management Congress 2013
21st August 2013

醫院管理局
HOSPITAL AUTHORITY

- **20th Aug 2013 (Day 1)**
- Sharing on the Journey in Achieving Track and Trace of Pharmaceutical Products in Public Hospitals in Hong Kong

- **21st August 2013 (Day 2 )**

  Dealing with the Exceptions and Overcoming the Challenges in the Supply Chain Modernisation Project

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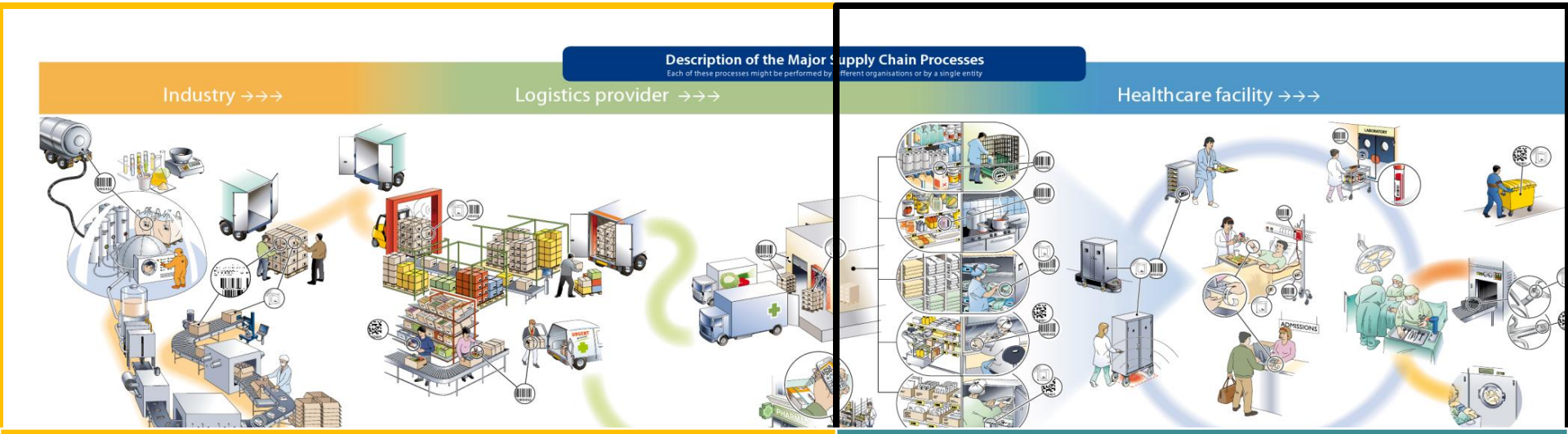
# The scope in the Supply Chain Modernisation project on Pharmaceutical Products in HAHK

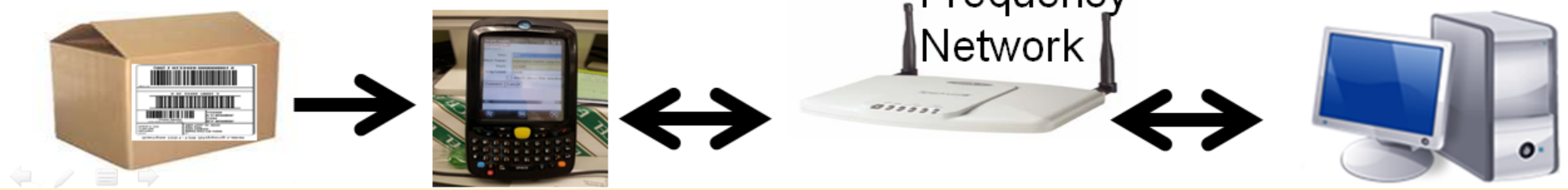



| External | Internal |
| --- | --- |
| **Supply Chain Modernisation** | **IPMOE */ DDAS**** |

*IPMOE = In-patient Medication Order Entry
**DDAS= Drug Distribution and Administration System

# The tools : Using MSCA in ERP (Oracle) (Mobile Supply Chain Application)

- Making use of mobile devices to support the Supply Chain Process from Goods receipt to Goods issue as much as possible
- Use wireless connection, scanners, bar codes, data transmission
- Minimize manual data entry
- Improve accuracy & efficiency of data capture
- Not RFID but bar codes



**where we are now**

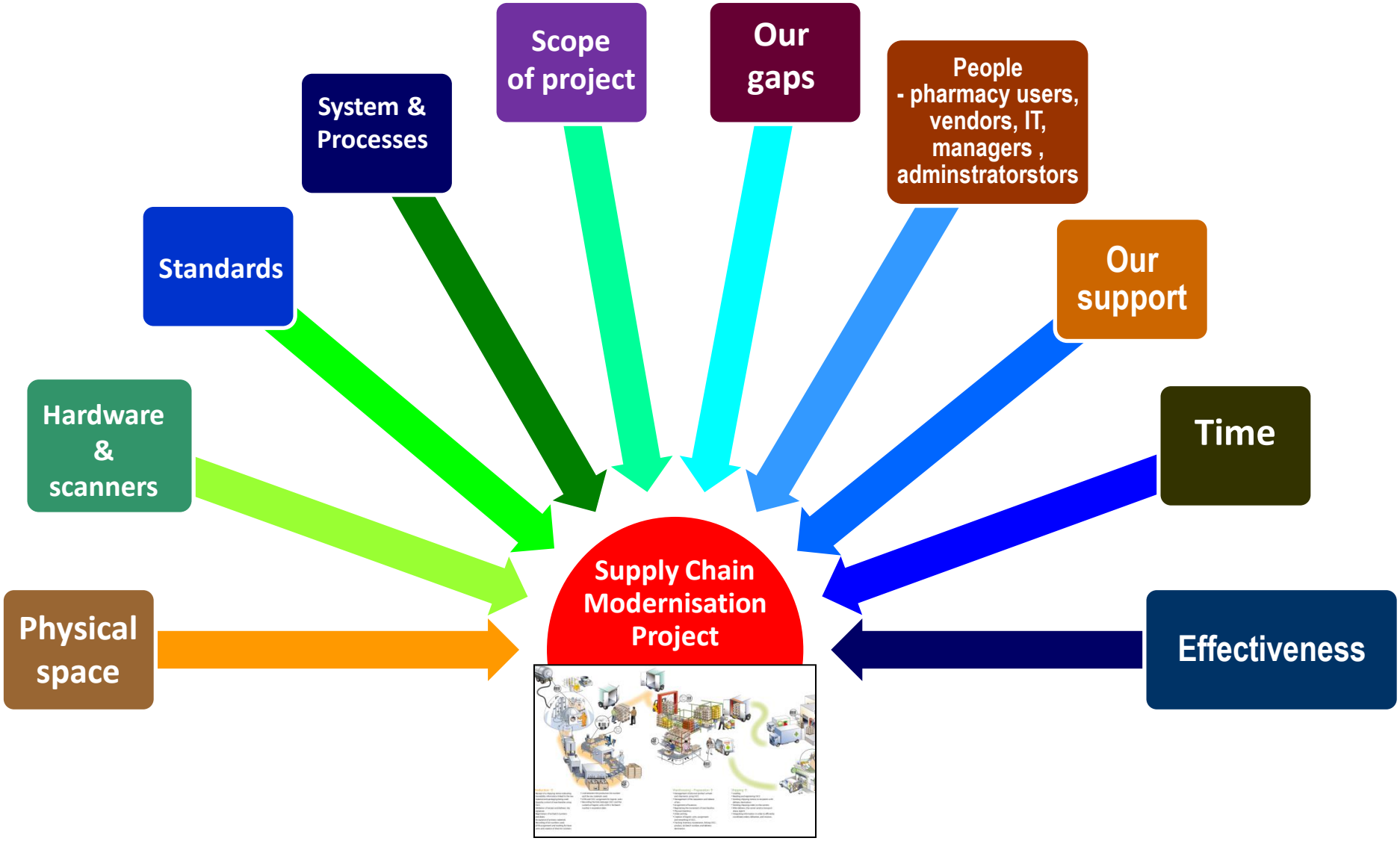
**Patient & Medication Safety**

**Visibility**

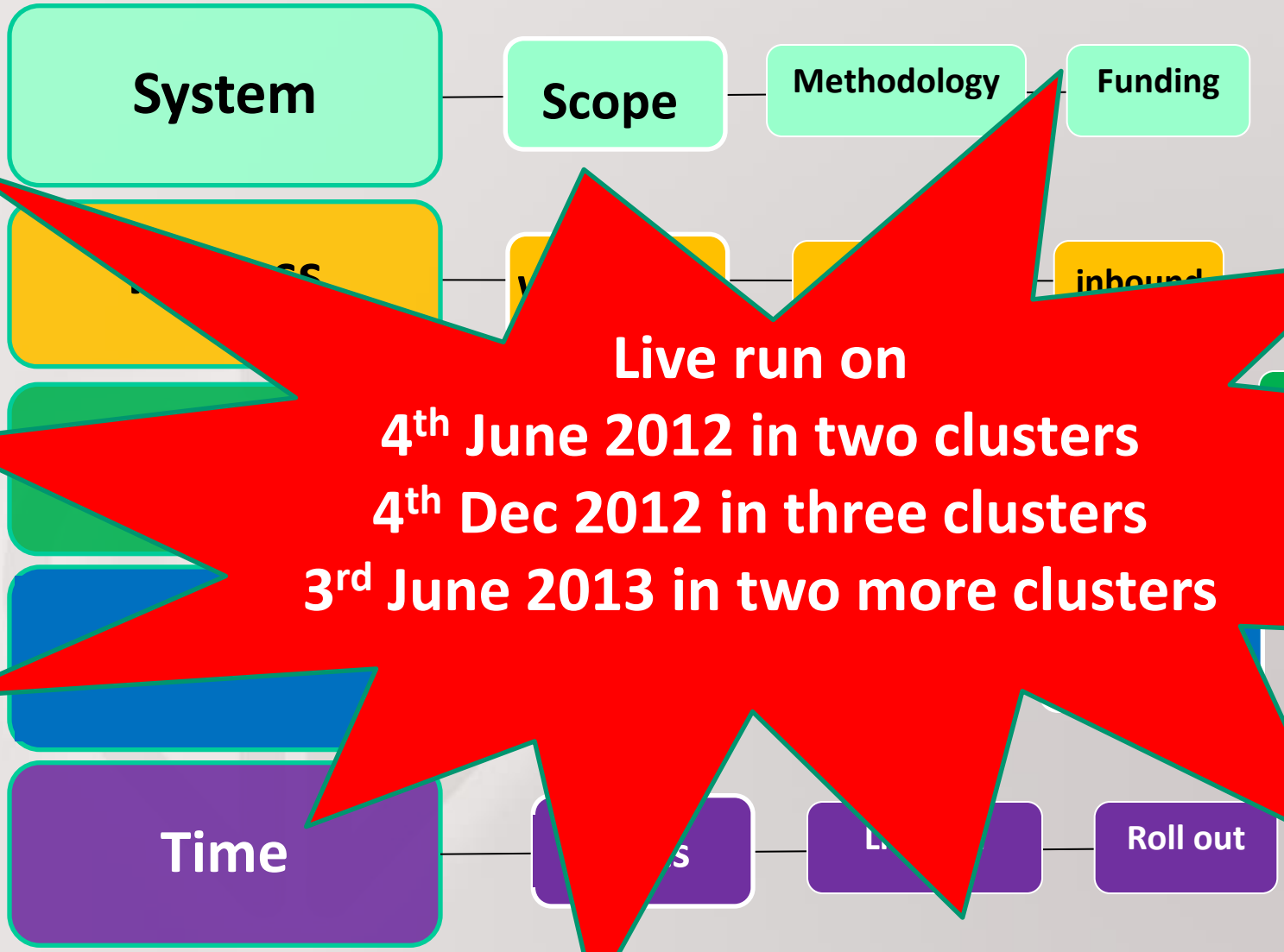
**Traceability**

**where we want to go via the SCM Project**

# The Challenges in SCM Project: fighting the unknowns



# The overall project plan –
## Supply Chain Modernisation on pharmaceutical products




**Live run on**

**4th June 2012 in two clusters**

**4th Dec 2012 in three clusters**

**3rd June 2013 in two more clusters**

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# Project Governance

- **Central**
  - User Resource Group (URG)
    - Chaired by Cluster  Service Director
    - members from project team & clusters  representatives
    - define project plan & monitor progress
    - allocate resources, prioritise issues  & make decision on direction
    - deal with concerns from system vendor and users
- **Cluster level**
  - 7 Cluster Implementation Project Resource Groups (CIPRG)

- each Chaired by Cluster Chief Executives
- members from hospital administrators, finance and pharmacy
- meet quarterly to report & monitor progress of implementation

# Stake holder engagement

## External

**HKGS1**:

- Technical guidelines
- industry standards on ASN, SSCC, GTIN,GLN

**Pharmaceutical vendors**:

- System interface to HA
- GTIN on smallest order unit
- bar code readiness to include GTIN, Qty, BN, Expiry date
- Bar coded Labels for shipper case & logistic units
- Testing and preparation

## Internal

**Hospital side** :

- Management buy in
- Support services
- Pharmacies

**Engagement & support** :

- implementing MSCA
- renovating stores & facilities
- adding manpower
- supporting user training

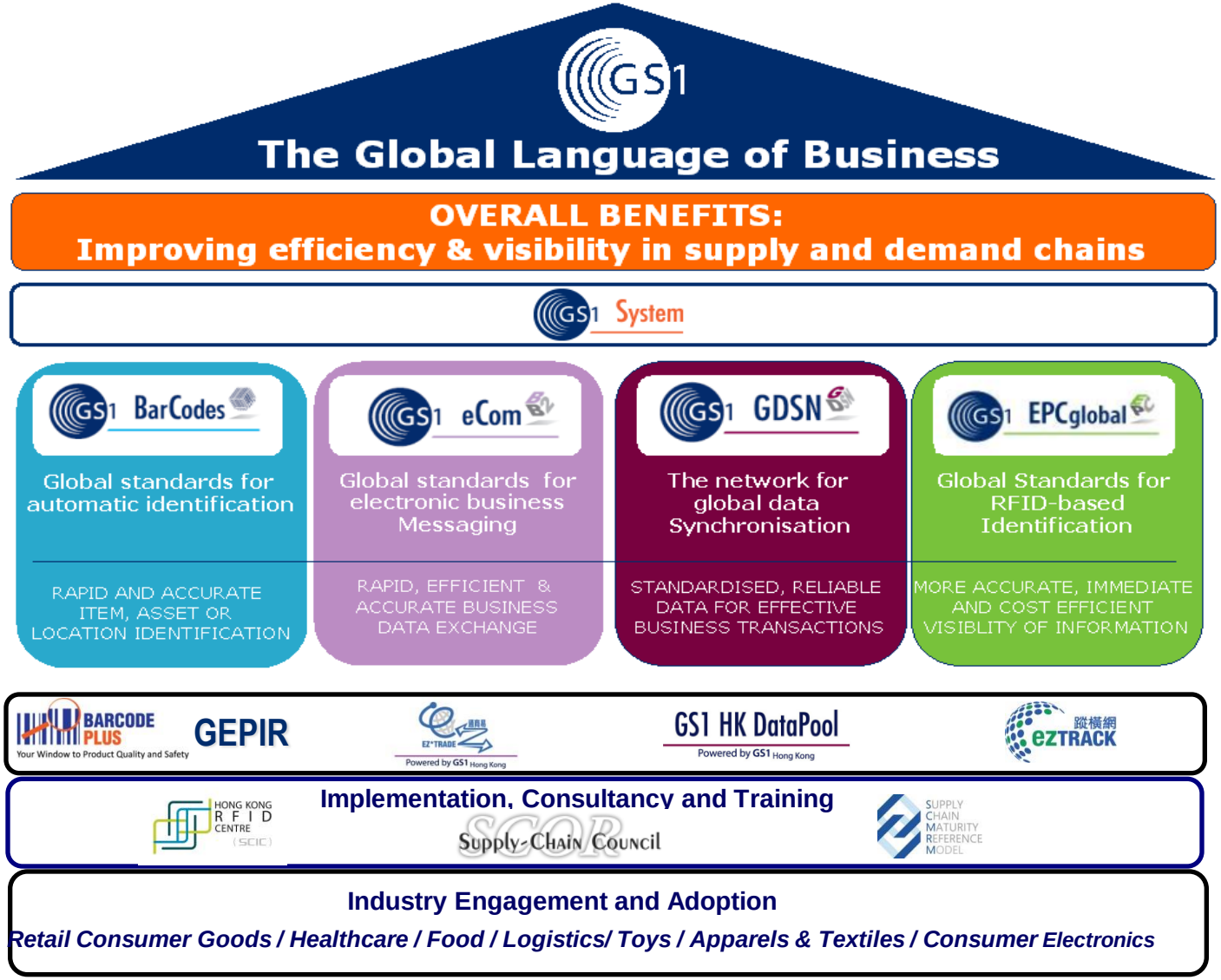
# Using the industry standards for SCM process

**The most widely used supply chain standards system in the world**

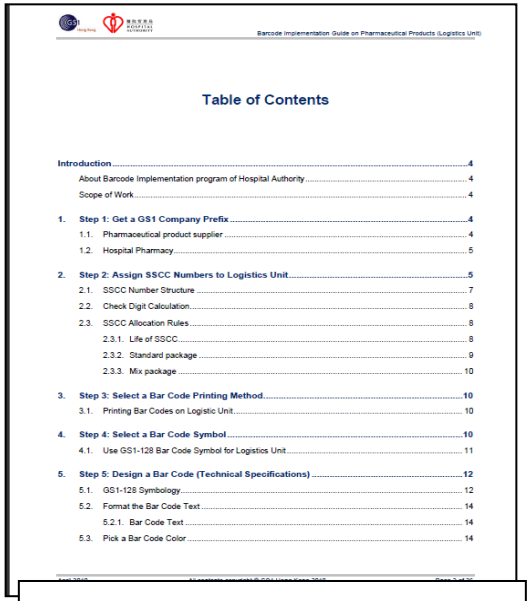
GS1 - a **not-for-profit** organisation dedicated to the design and implementation of **global standards** to improve the efficiency and visibility of supply chains globally and across sectors

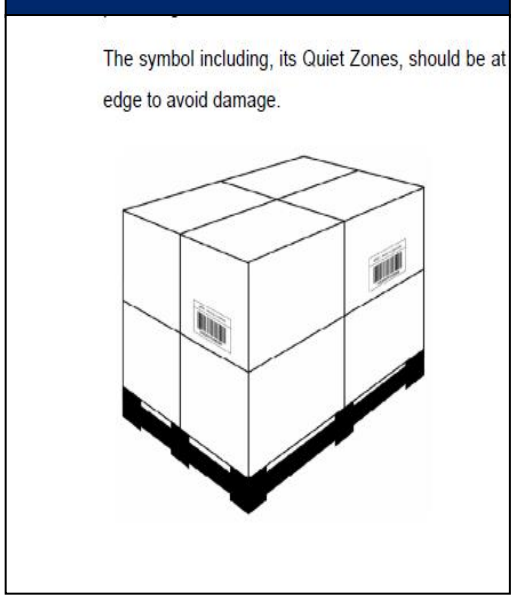
- Provide the industry standards for SCM process
  - Advise on data elements e.g. GTIN, GLN, bar code, EDI messages - structure and format
  - Provide training, workshops, platform and business solutions

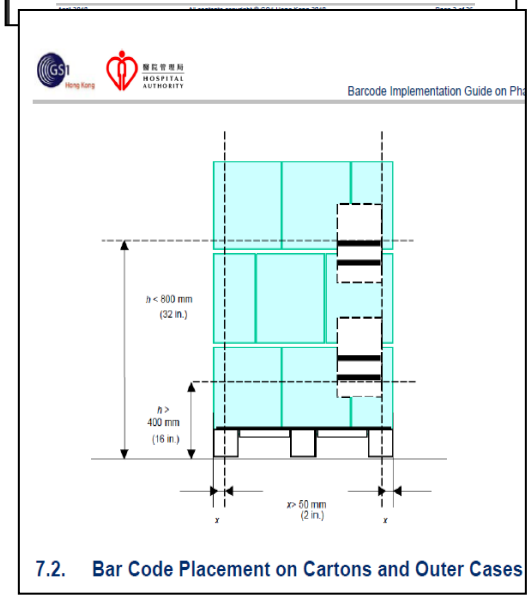
# GS1 Standards

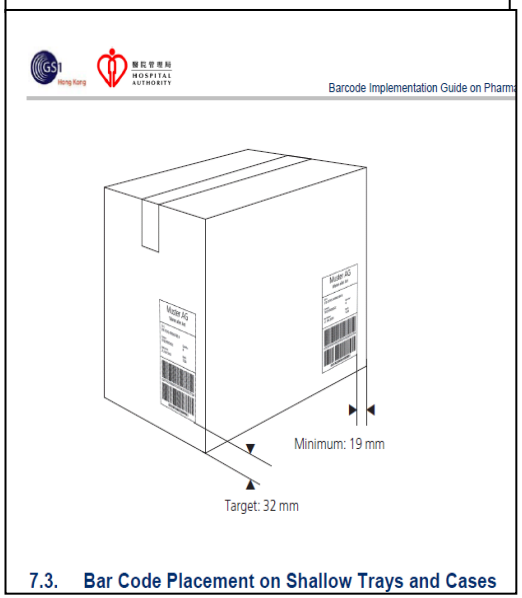


# Standards provided by GS1





# GTIN Allocation

## Each packaging level = different GTIN

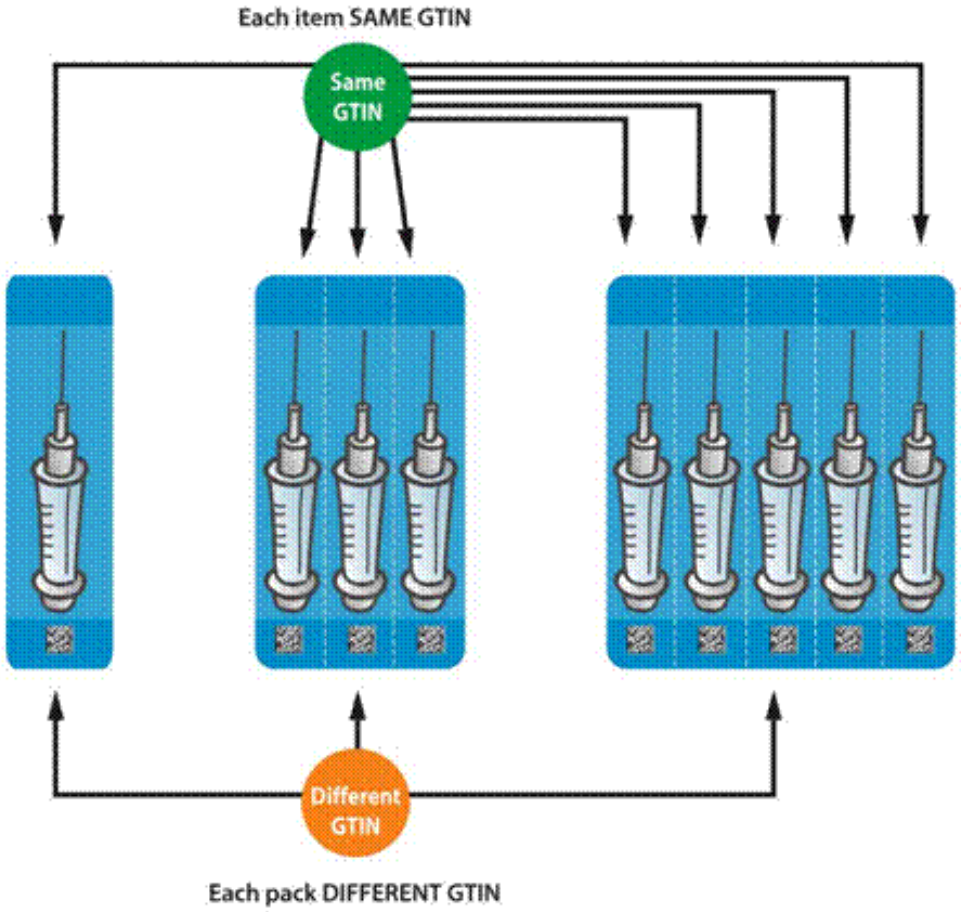
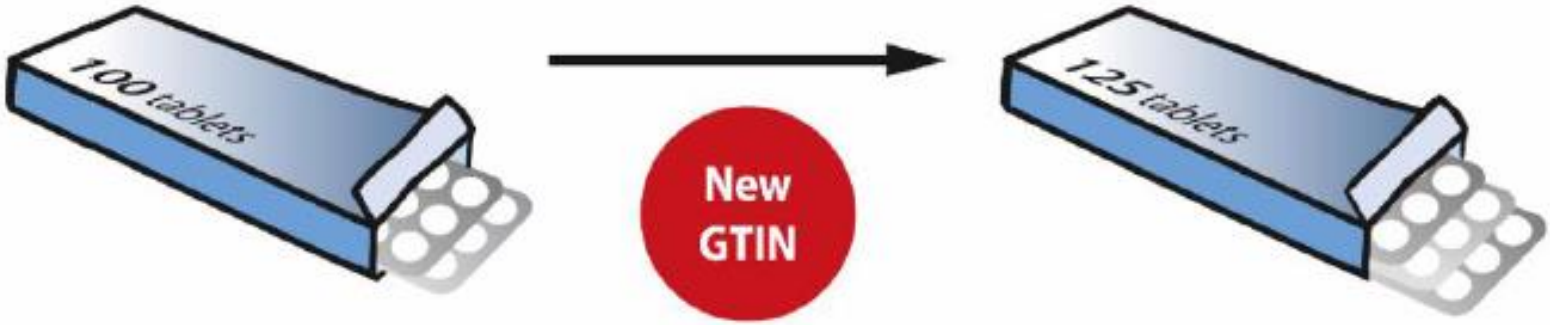
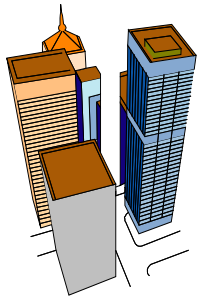
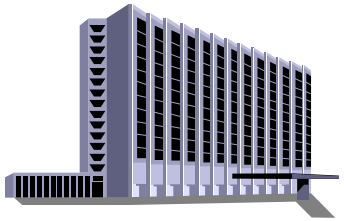
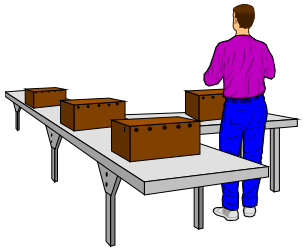


**Figure 5-5** Declared Change in Net Content - New GTIN



# Locations - Types of GLN

**A Universal Unique Number to Identify**

- Legal Locations
  -  Company
  -  Subsidiary
- Physical Locations
  -  Warehouse
  - Store
- Functional Locations
  - Accounting Dept
  - Purchasing Dept

# Locations

- Locations. ***Physical, functional or legal entities*** requiring a permanent identification (company, department, warehouse,...)
- GLN is a non-significant, fixed length, 13 digits number which does not contain any classifying elements

| GS1 company prefix number and location reference | Check digit |
|---|---|
| $N_1$ $N_2$ $N_3$ $N_4$ $N_5$ $N_6$ $N_7$ $N_8$ $N_9$ $N_{10}$ $N_{11}$ $N_{12}$ | $C_{13}$ |

GLN can be carried by GS1-128 + AI

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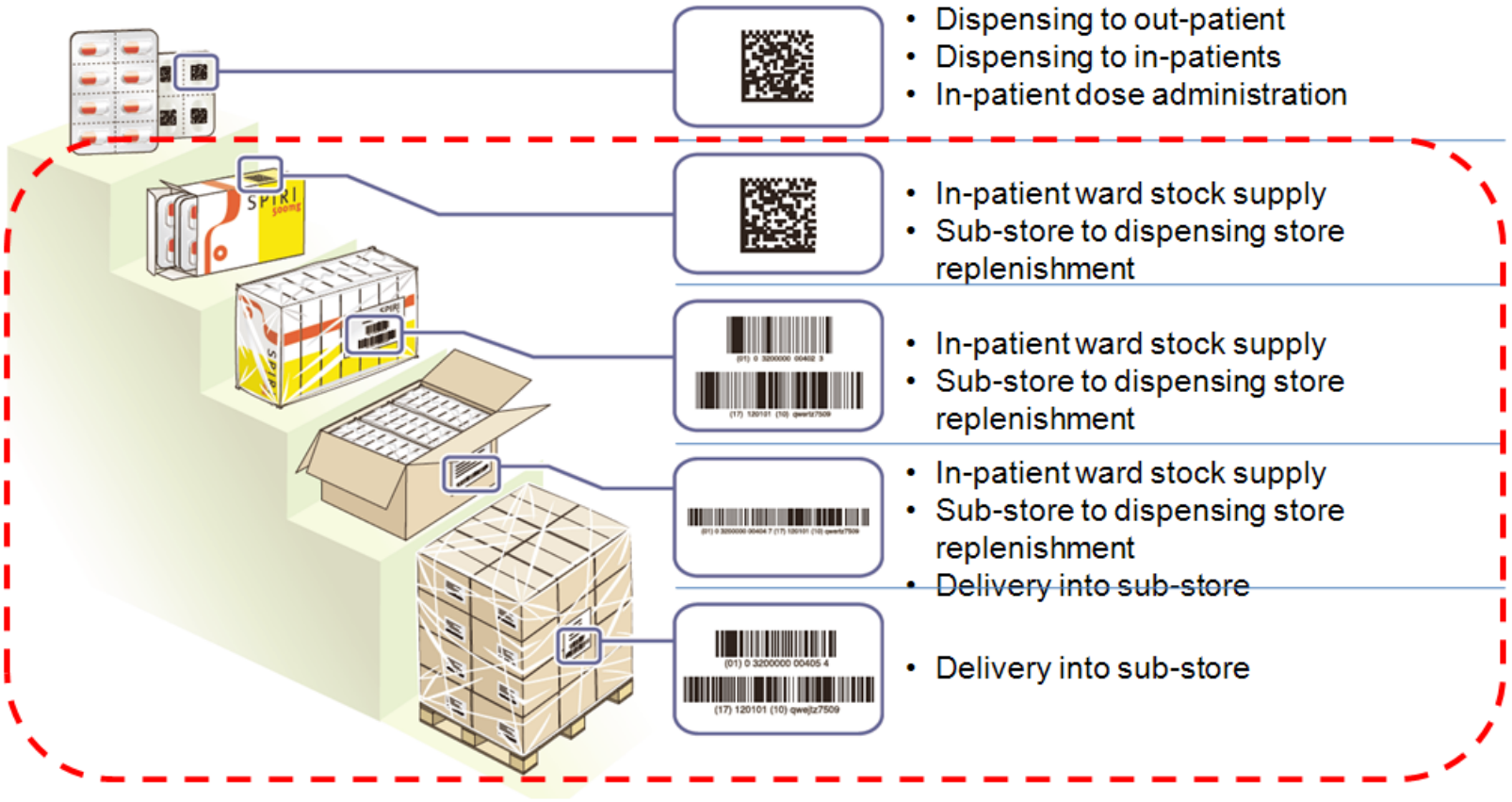
# Vendor engagement, training and briefing

## Bar-code track-and-trace




**Target areas for direct-from-supplier bar-coding**

# The Data String for Bar Code

| Application Identifier | Meanings | Example | Remark |
|---|---|---|---|
| (02) | The data follows (02) is the GTIN of ordering base unit | (02)04891668000022 | Must be 14 digit no. |
| (17) | The data follows (17) is the expiration date | (17)110106 | YYMMDD Format |
| (37) | The data follows (37) is the count of trade item | (37) 12345678 | Up to 8 digit no. |
| (10) | The data follows (10) is batch/Lot no. | (10) ABCDEFGH | Up to 20 alphanumeric |

= (02)04891668000022(17)110106(37)12345678(10)ABCDEFGH

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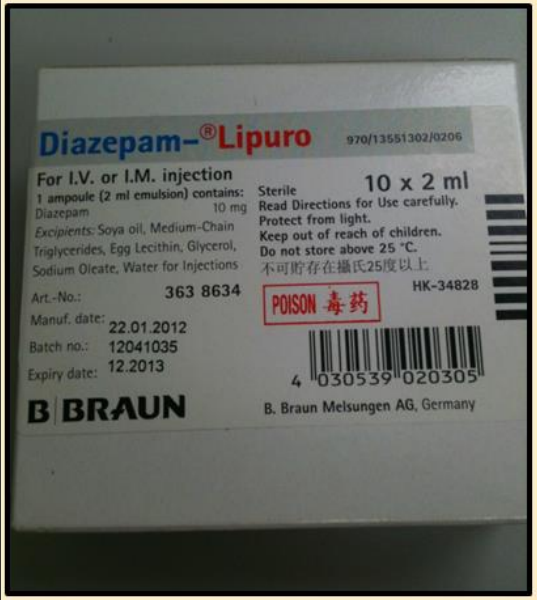
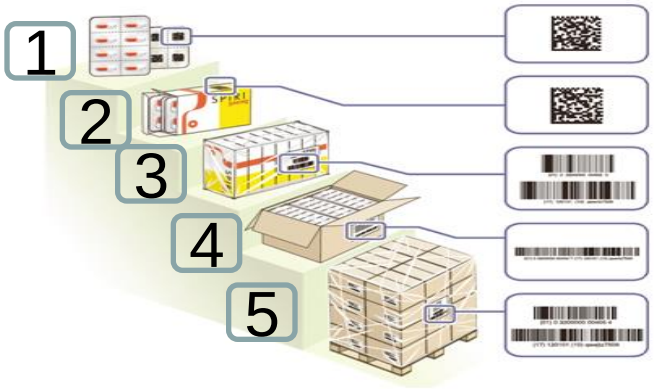
# Vendor & Product readiness

## What is required on the product to enable track and trace

there should be bar coded information on GTIN, Batch, Expiry Date and QTY at the primary packing

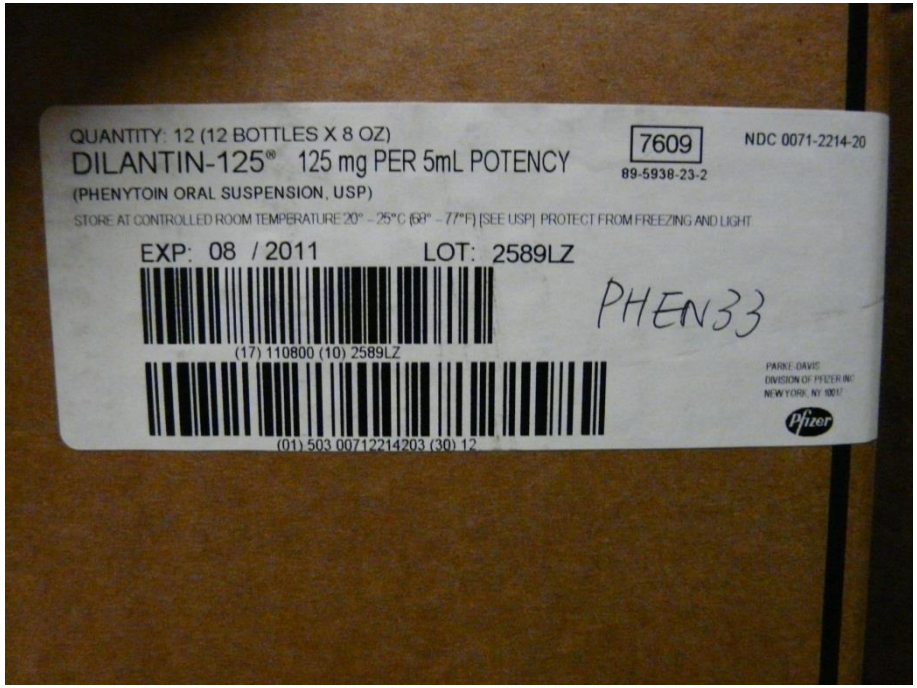


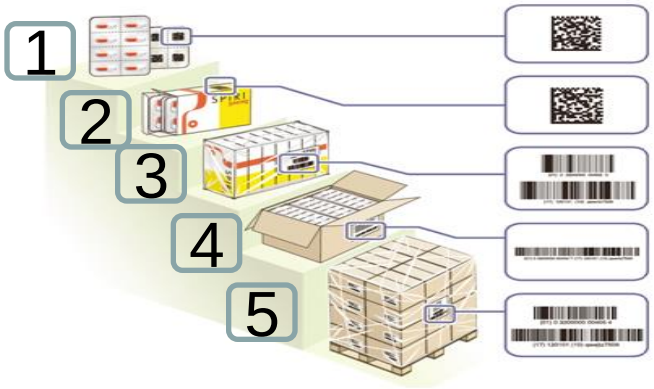
# Isolated products
# - Full set of bar code on Level 2

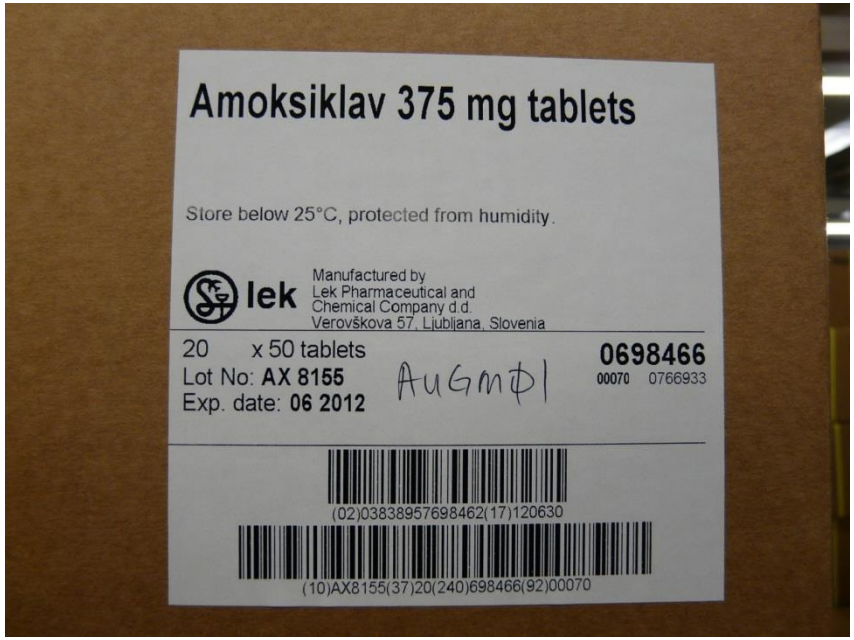


# Full set of bar code on Level 4

**Supplier : ZUELLIG**



# Full set of bar code on Level 4 but not GTIN standard

Not a GTIN Bar code only a supplier Item bar code

Supplier : ZUELLIG PHARMA LIMITED

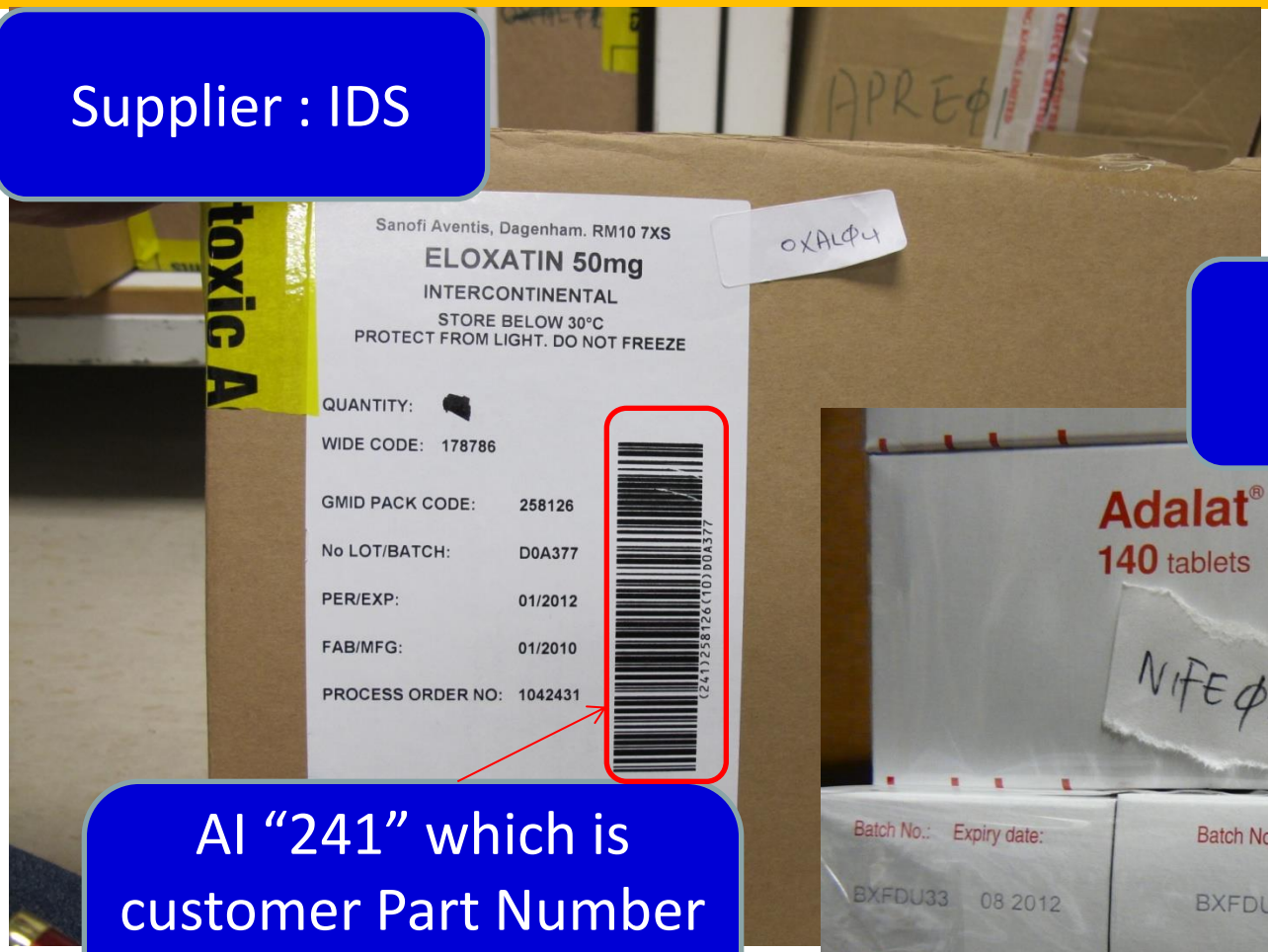
# Difficulties to identify the correct bar code to scan

# Sample of unscannable Bar code

Supplier : IDS

Supplier : ZUEL
Manf: BAYER

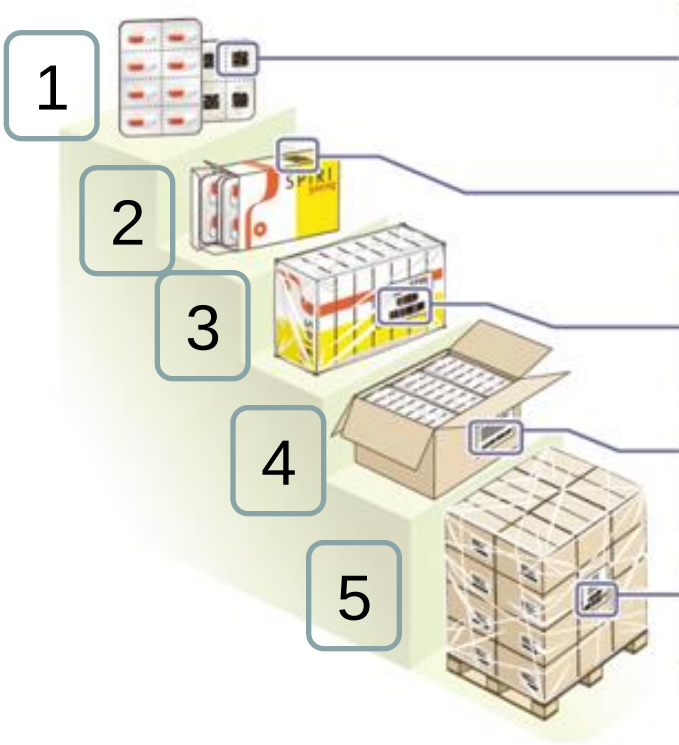
Bar code printed in red color



AI “241” which is customer Part Number cannot use as an item identifier

# Survey on bar code status

| | Level 2 | Level 4 |
|---|---|---|
| Scannable item identity | 405 (50%) | 116 (14%) |
| Items with lot no. in bar code | 6 (0.7%) | 102 (13%) |
| Items with expiry date in bar code | 6 (0.7%) | 86 (11%) |
| Items with full set of bar code (Item + Lot No. + Expiration date) | 6 (0.7%) | 85 (10%) |



# Top 20 Suppliers – their Item bar code Readiness

| Supplier name | Item count in the survey | Availability of Barcode on level 2 | Availability of Barcode on level 4 |
|---|---|---|---|
| ZUELLIG PHARMA LIMITED | 304 | 186 | 74 |
| DKSH HONG KONG LIMITED | 119 | 64 | 9 |
| IDS (HK) LTD - HEALTHCARE DIVISION | 41 | 27 | 6 |
| THE INTERNATIONAL MEDICAL CO. LTD. | 19 | 8 | 1 |
| VICKMANS LAB LTD | 19 | - | - |
| HK MEDICAL SUPPLIES LTD | 18 | 7 | - |
| LUEN CHEONG HONG LTD | 18 | 11 | 2 |
| BAXTER HEALTHCARE LTD | 17 | 10 | 9 |
| SYNCO (HK) LTD | 16 | 3 | - |
| UNITED ITALIAN CORPORATION (HK) LTD. | 14 | 8 | 1 |
| JEAN-MARIE PHARMACAL CO LTD | 12 | - | - |
| HIND WING CO LTD | 11 | 10 | - |
| Y. C. WOO & CO. LTD. | 11 | - | 3 |
| EUROPHARM LABORATOIRES CO LTD | 9 | 8 | - |
| MEDIPHARMA LTD | 9 | 1 | - |
| UNIVERSAL PHARMACEUTICAL LAB LTD | 9 | 1 | - |
| CHRISTO PHARMACEUTICALS LTD. | 8 | 2 | - |
| FERRING PHARMACEUTICALS LTD | 7 | 1 | - |
| STAR MEDICAL SUPPLIES LTD | 7 | - | - |
| MEKIM LTD | 6 | 4 | - |

# What is the Gap and how big is it ?

Findings :

- GTIN not a compulsory requirement
- Some bar codes are not GTINs
- EDI not a compulsory requirement
- most EDI vendors do not have bar coded info on primary packaging
- Some have bar coded info but not EDI vendors
- Bar coded info contain GTIN only, no batch no., no expiry dates

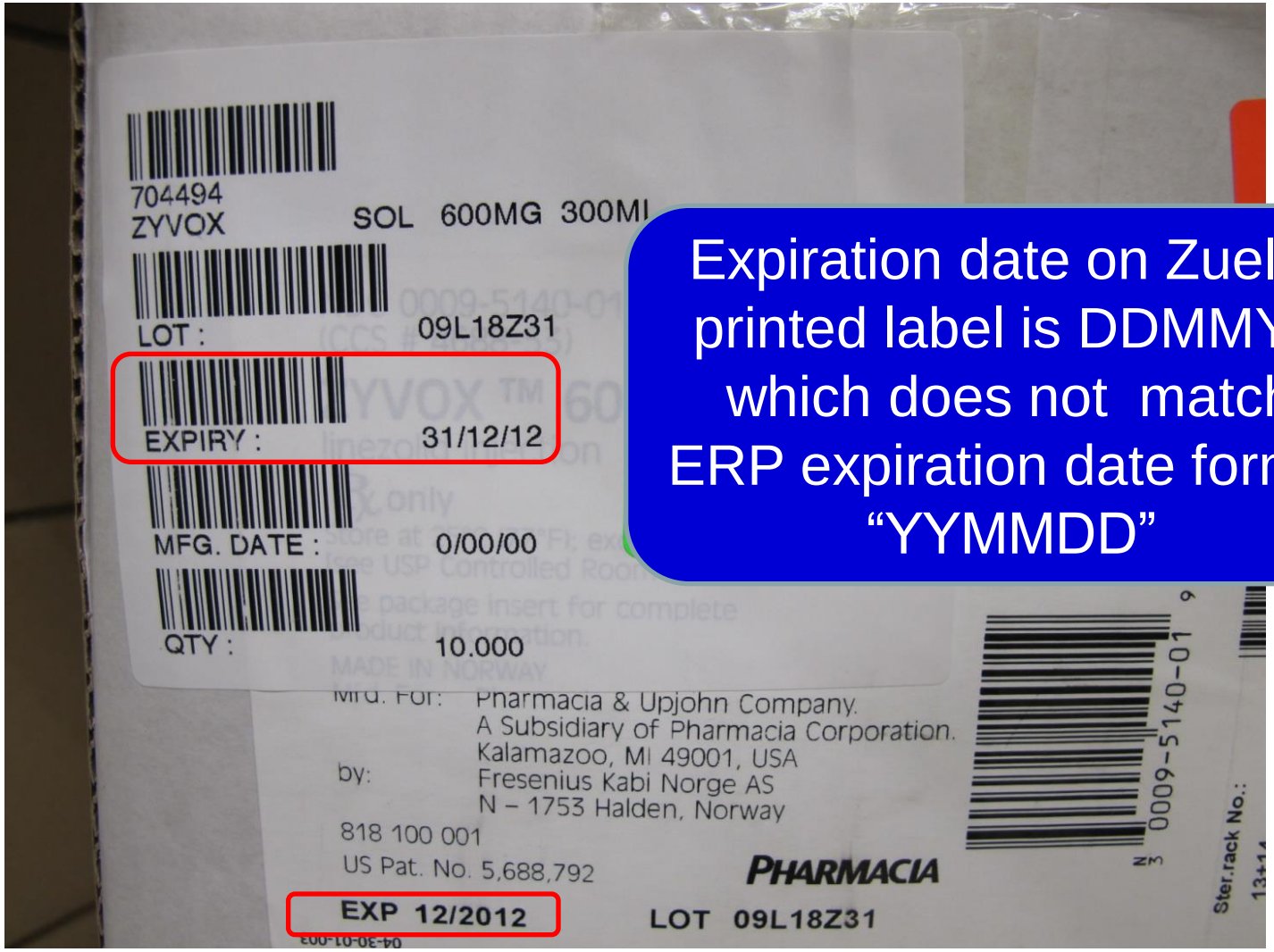
# Importance of GTIN in SCM

- GTIN is a compulsory requirement for EDI PO
- It is inevitably that some items would not carry a valid GTIN because
  - Free Goods, Sample Goods, Donated Goods, Clinical Trial Goods and duplicate item code created for special program…)
  - Due to System limitation, one GTIN cannot be assigned to multiple item codes
  - GTIN may not be available when new items are introduced into HA

# Requirement for Expiry Date Format

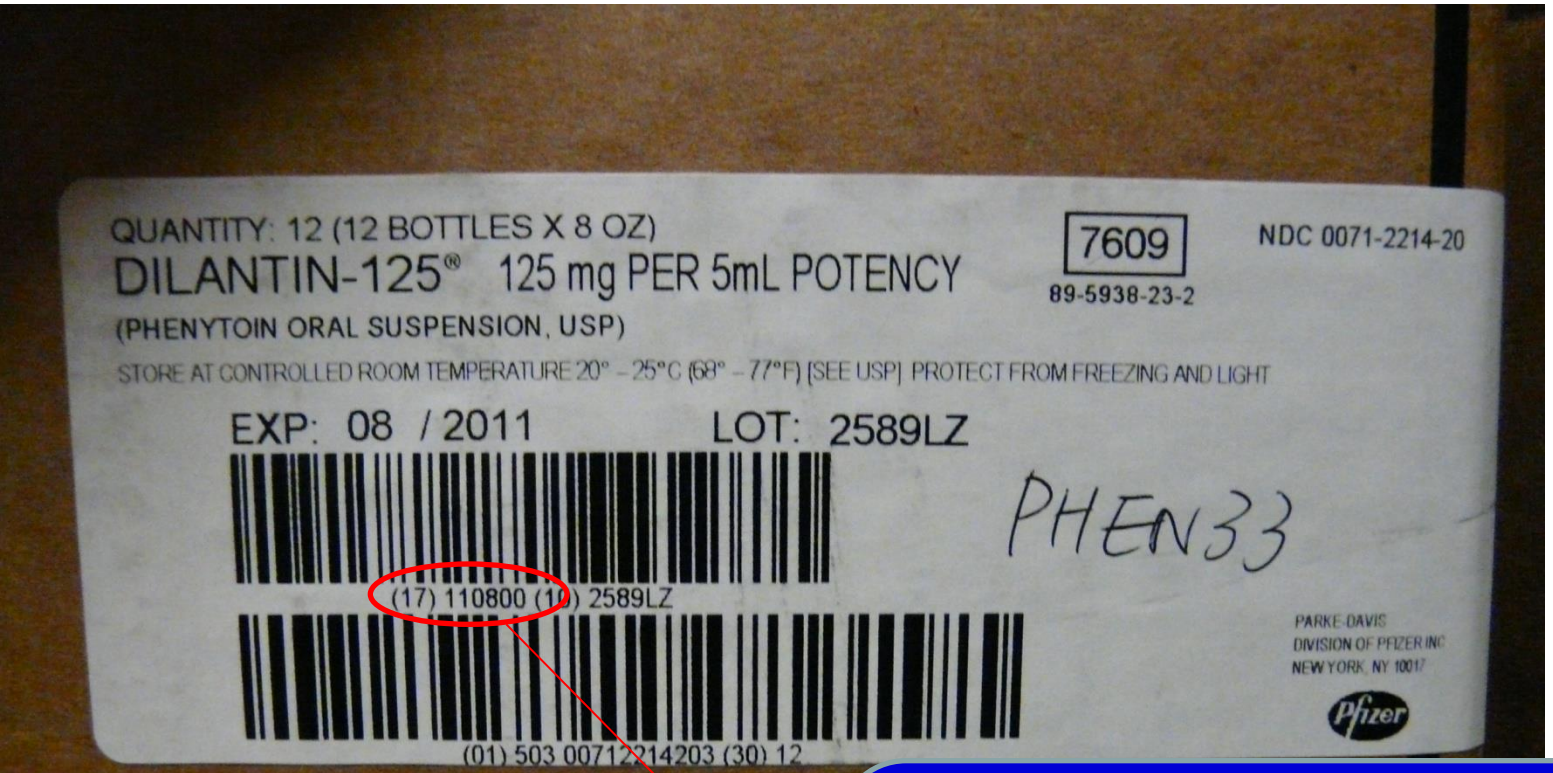
| e.g. | Expiry Date on Product | Expiry date format in ASN message CCYYMMDD | Barcode Format on Shipper Case YYMMDD | Expiry date printed on Shipper Case label | Expiry date printed on DN/Invoice |
|---|---|---|---|---|---|
| A | 28-Dec-2013 | 20131228 | 131228 | 28 DEC 2013 | 28 DEC 2013 |
| B | Dec-28-2013 | 20131228 | 131228 | 28 DEC 2013 | 28 DEC 2013 |
| C | 28-12-2013 | 20131228 | 131228 | 28 DEC 2013 | 28 DEC 2013 |
| D | 12-28-2013 | 20131228 | 131228 | 28 DEC 2013 | 28 DEC 2013 |
| E | Dec-2013 | 20131200 | 131200 | DEC 2013 | DEC 2013 |
| F | 122013 | 20131200 | 131200 | DEC 2013 | DEC 2013 |
| G | 201312 | 20131200 | 131200 | DEC 2013 | DEC 2013 |
| H | 12/13 | 20131200 | 131200 | DEC 2013 | DEC 2013 |

# Problem on Expiration date format (1)




Expiration date on Zuellig printed label is DDMMYY which does not match ERP expiration date format "YYMMDD"

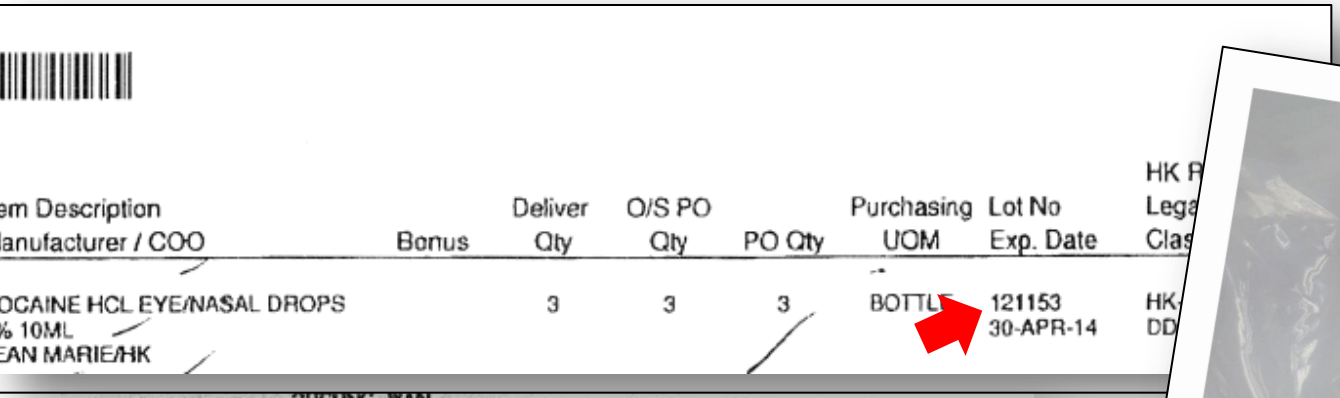
# Problem on Expiration date format (2)



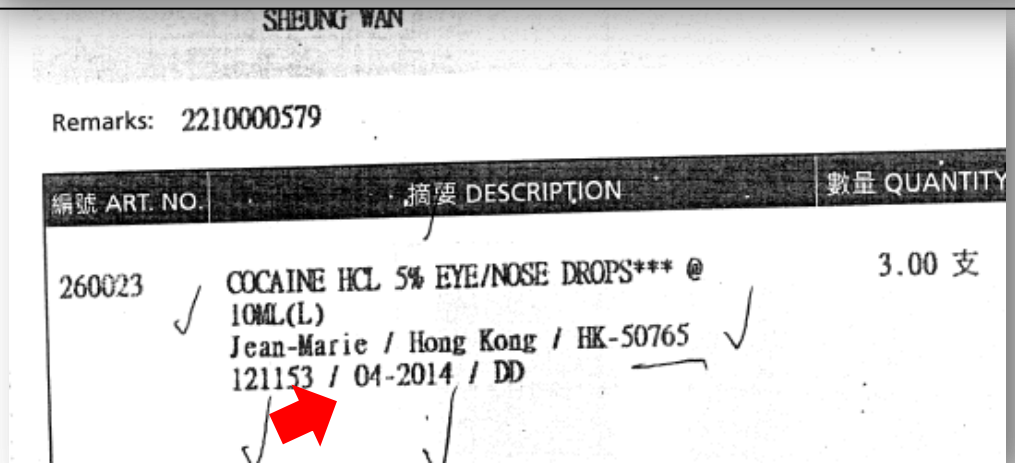

Date format is YYMMDD, in ERP date “00” is not accepted, users need to manually input - whether input 0108 or 3108 ??

# ASN information mismatch on Expiry date

- **Expiry date printed on goods did not match ASN message -> When no date is specified, HA takes 1st day of month as the 'used by' date.**



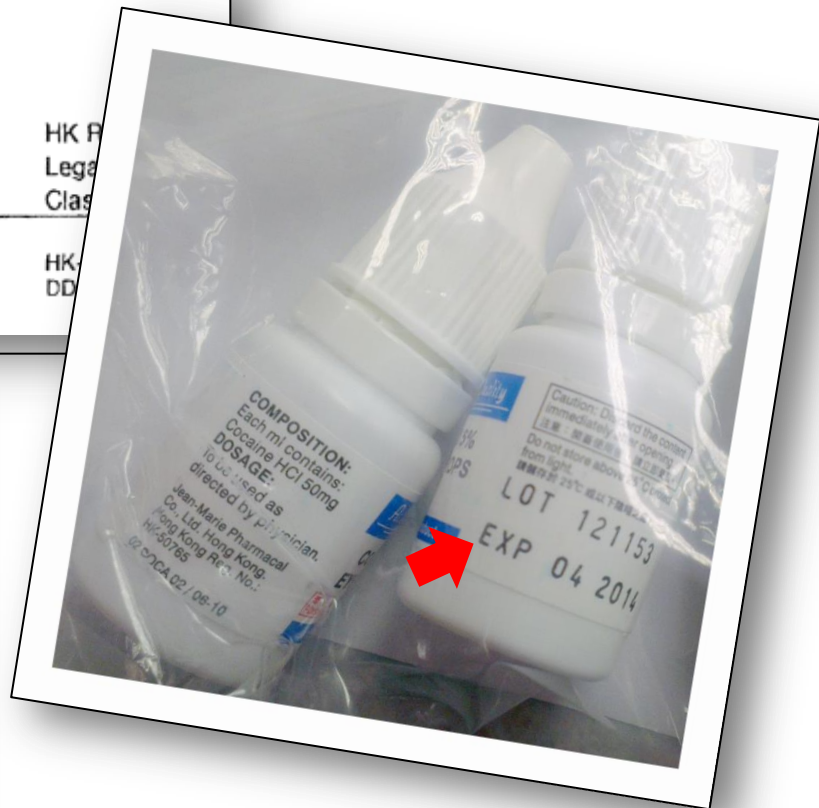
| em Description / anufacturer / COO | Bonus | Deliver Qty | O/S PO Qty | PO Qty | Purchasing UOM | Lot No Exp. Date | HK P Lega Clas |
|---|---|---|---|---|---|---|---|
| OCAINE HCL EYE/NASAL DROPS % 10ML EAN MARIE/HK | | 3 | 3 | 3 | BOTTL | 121153 30-APR-14 | HK- DD |



SHEUNG WAN

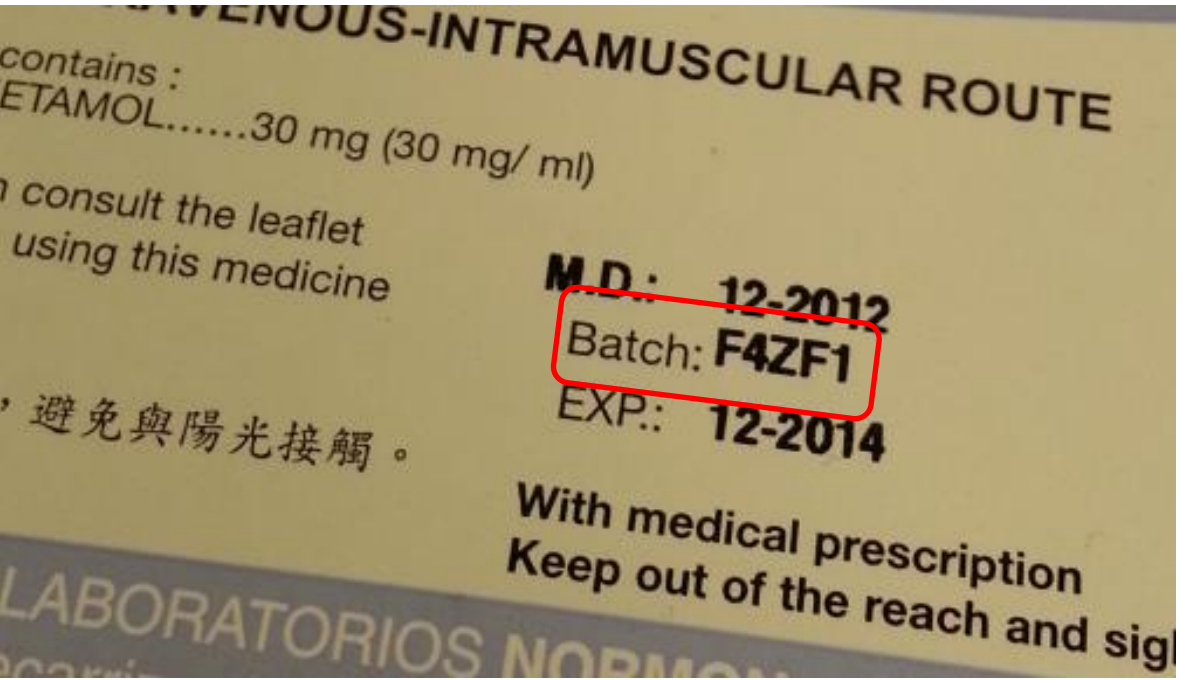
Remarks: 2210000579

| 編號 ART. NO. | 摘要 DESCRIPTION | 數量 QUANTITY |
|---|---|---|
| 260023 | COCAINE HCL 5% EYE/NOSE DROPS*** @ 10ML(L) Jean-Marie / Hong Kong / HK-50765 121153 / 04-2014 / DD | 3.00 支 |

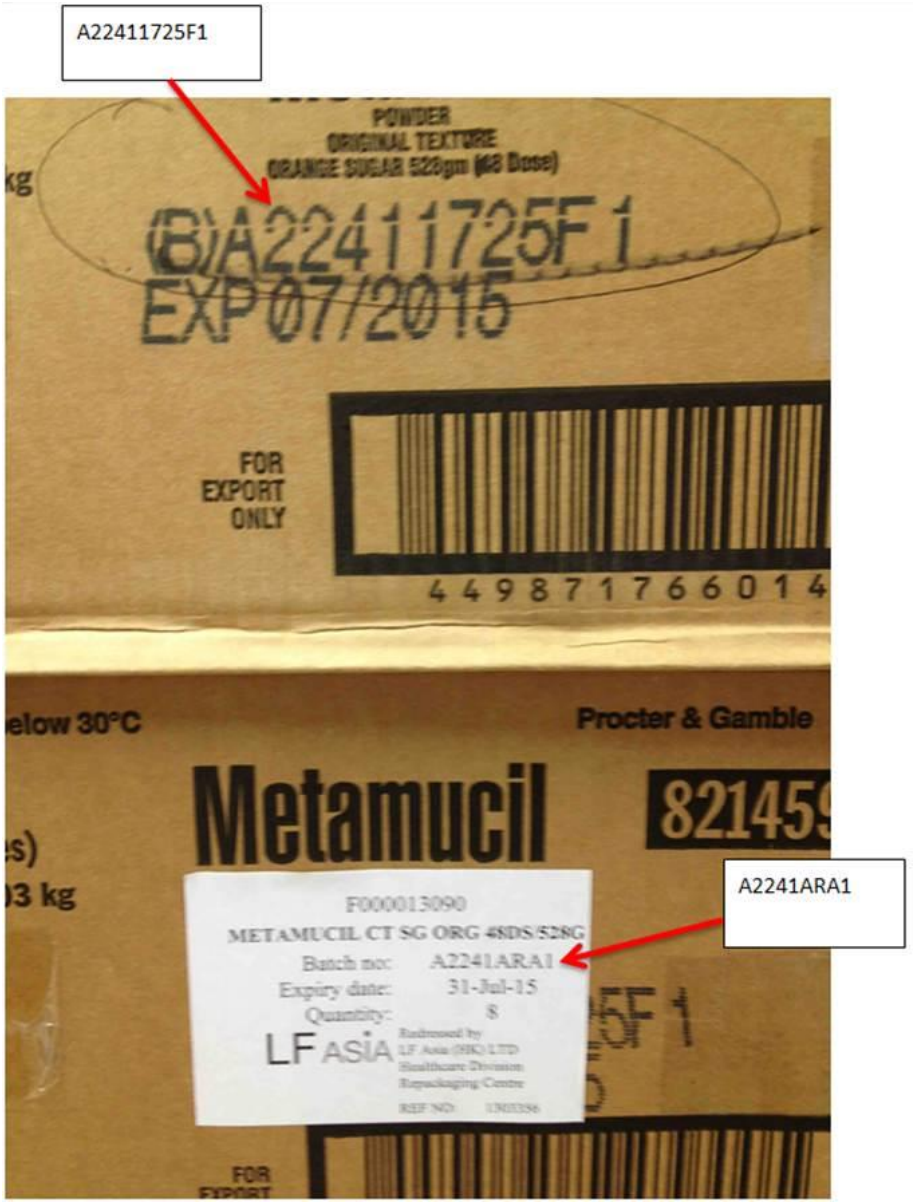


# Batch Number issues

- users reported that the lot information printed on product packing did not match with the lot number printed on product



# Batch Number Issues



# Batch number issues

- Issues were referred to the vendors
- Different batch number assigned due to the different stages of redressing involved
- Need to understand the process and provide explanation for our pharmacy store management users

# In stocking up the shelves,

- each batch should be stored in a separate locator
- apply physical separators to separate different batches
- shelf label marked with bar-coded locator information

# In reality, not enough space and manpower, mix batches are in the same locator



## Receipt Traveler

Supplier Name VICKMANS LAB LTD

Ship to Loc. QE0-FB-G-MAIN

Inventory Org QE0 - QUEEN ELIZABETH HOSPITAL FOR DRUGS
Receiver CHIK, XX J049150
Receipt Date 27/AUG/2012 15:56:30
Receipt# 306000001472

| Dest. Subinv | Dest. Locator | DD | Spec. inst. | Item Code | Item Description | Received Qty | Rec UOM/ Pur UOM | O/S PO Qty | Lot No. Exp. Date | PO# | PO Line# |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QE0-S-MAIN | MAIN.A.P12.0 | | | CLOX01 | CLOXACILLIN (SODIUM) CAPSULE 250MG | 4 | 500 CAP | 190 | EUT_QMH_01 23-NOV-17 | 3210001113 | 1 |
| | | | | | | 5 | 500 CAP | | EUT_PYN_02 29-NOV-12 | | |
| | | | | | | 1 | 500 CAP | | EUT_UCH_03 30-NOV-18 | | |

# Storage Racks

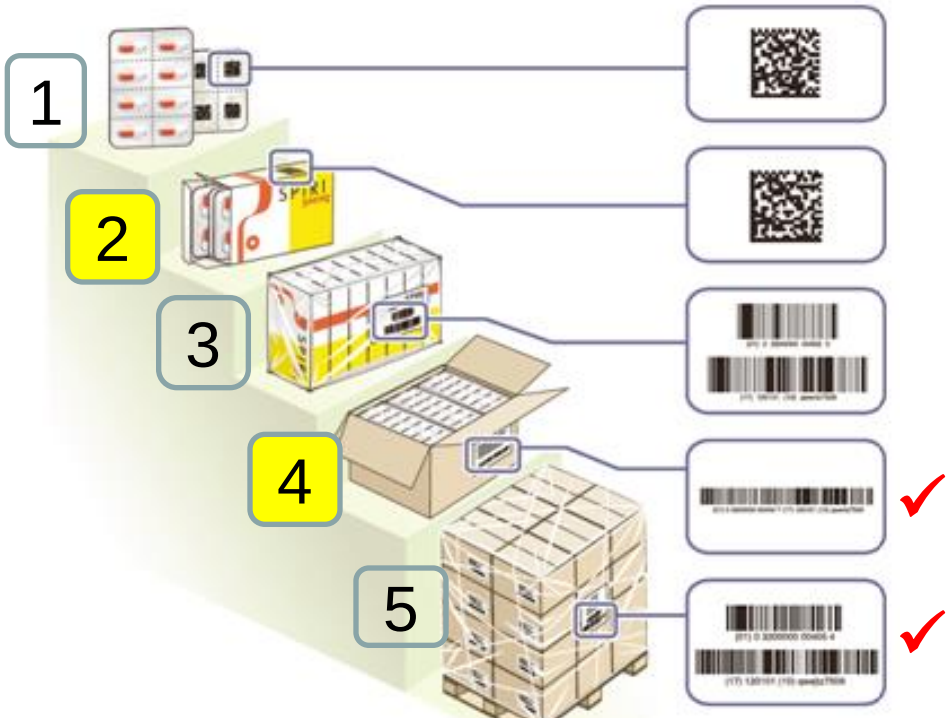
- Stores are installed with carton flow racks which facilitate users to fill the newly received goods from the back and pick the goods from the front
- In reality, newly received goods may have earlier expiration

# Some pharmacy stores are still temporary stores

# Vendor & Product readiness

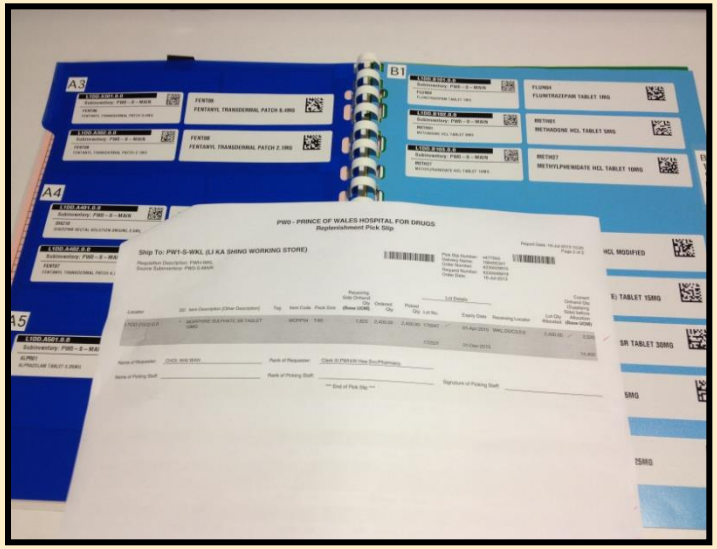
**For SCM EDI vendors :**

- **Bar codes are required on outer cartons , pellets with GTIN, Batch No, Expiry date**
- **These information are lost when the goods are removed from cartons and pellets**



# Not all store rooms are properly setup

✗



?

# Daily movement from PWH main store to LKS working store

# Storage space & facilities

Conclusion : Plenty of room for improvement in our stores

# Users engagement & communication

- Training
- Communication
- On site support & on going support
- Additional resources

# SCM Project implementation summary : by batch & phase approach

| Batch I | Batch II |
| --- | --- |
| ➢ Batch I EDI suppliers<br>➢ 13+1 vendors<br>➢ 136,667 PO lines (Jan to July 13)<br>➢ = about 70% of order lines<br>➢ About 38% of item sources<br>➢ To all clusters<br>➢ Live run with ERP | ➢ Batch II EDI suppliers<br>➢ + 14 or 5 vendors<br>➢ 21,434 order lines<br>➢ = about 16% more order lines<br>➢ About 13 % item sources<br>➢ to meet vendors on 13th August<br>➢ To live run in March 2014<br>➢ To all clusters |
| **Phase I** | **Phase II** |
| ➢ Track into the main stores<br>➢ Applicable to all pharmacy stores | ➢ Track out to the dispensing stores on Dangerous Drugs<br>➢ Pilot in PWH and QEH |

**where we are now**

**Patient & Medication Safety**

**Visibility**

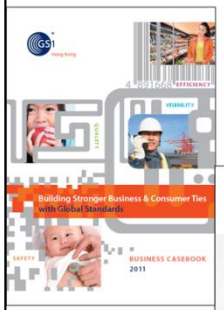
**Traceability**

**where we want to go via the SCM Project**

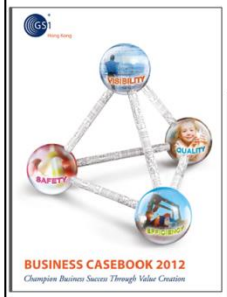
# The GS1HK Business Casebooks 2010, 2011,2012,

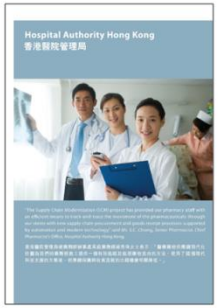
## HA SCM project included in the GS1HK Business Casebook 2010

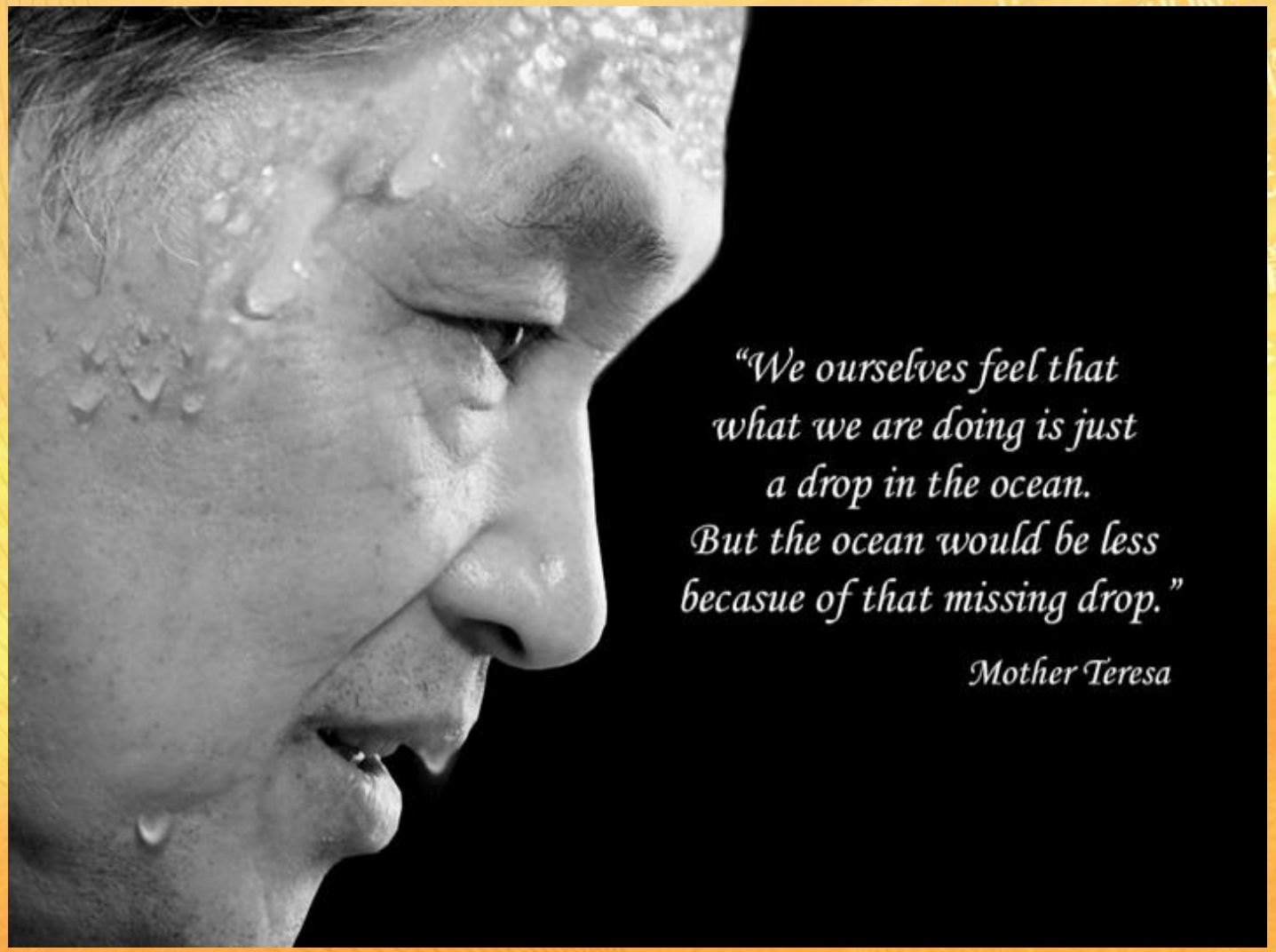
## HA SCM project included in the GS1HK Business Casebook 2011



## HA SCM project included in the GS1HK Business Casebook 2012






醫院管理局
HOSPITAL AUTHORITY

# Thank you

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