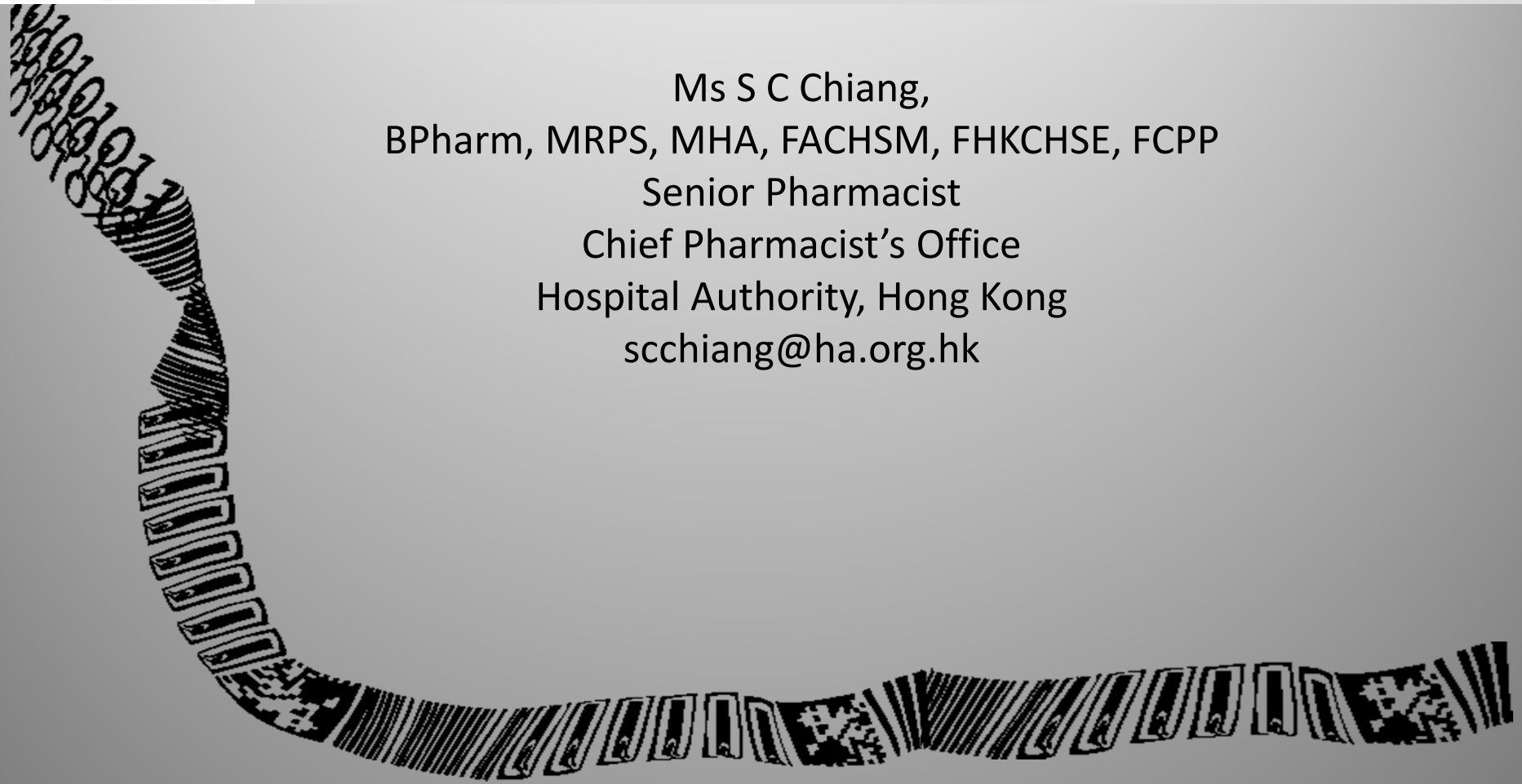




# Transforming the Healthcare Supply Chain on pharmaceutical products

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# Provide answers to some questions on the SCM project

- Why do we need to transform the Healthcare Supply Chain on pharmaceutical products ?
- What were the problems in the system?
- How did we do it ?
- What challenges did we encounter ?
- What was the outcome ?



# Health Care System in Hong Kong

## Dual-track Healthcare System

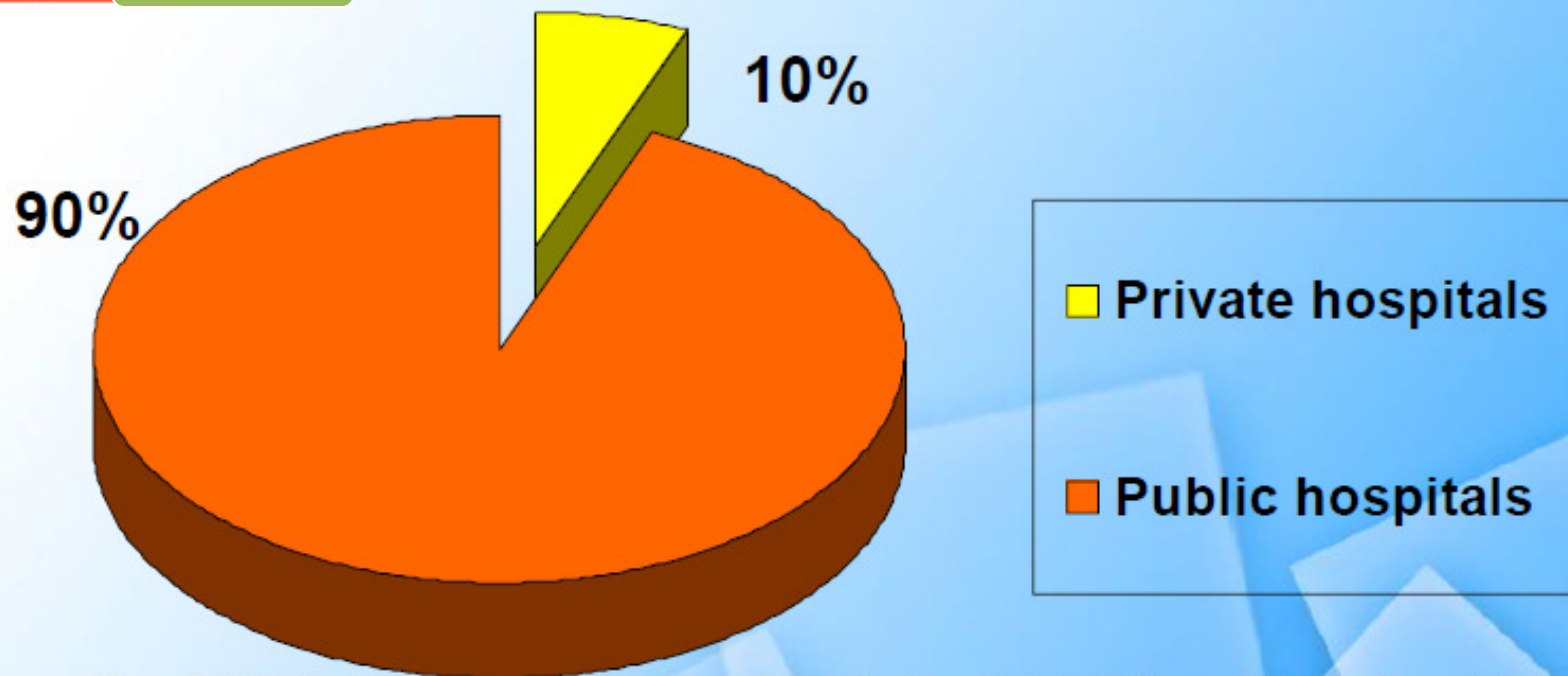


- Public sector -the cornerstone of the healthcare system
- Private sector – Personalised services for those willing and may afford higher fees



# Hospital Authority – Provider of Secondary and Tertiary Medical Services

## Public and Private Shares of Hospital Bed-days



Sources: Hospital Authority Statistical Reports and private hospital statistics from Department of Health

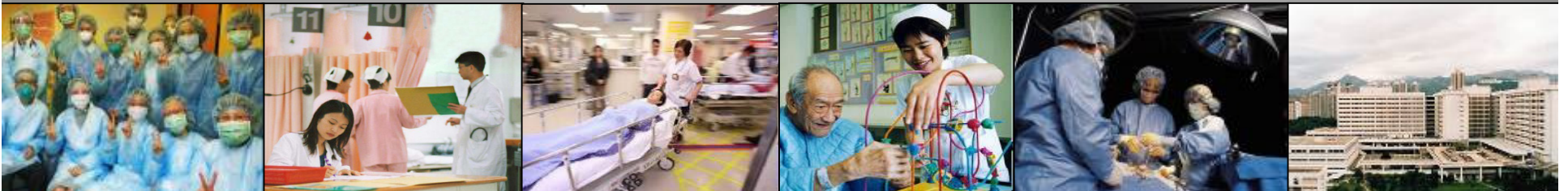


# Hospital Authority Hong Kong (HAHK)



醫院管理局  
HOSPITAL  
AUTHORITY

- A statutory body established on 1 December 1990
- Manages all public hospitals spread over 7 clusters in HK  
= 41 public hospitals ( total 27,900 hospital beds)  
with 47 specialist & 74 general clinics
- Total 63,000 staff  
with 5,475 Doctors & 20,522 Nurses & 5,834 Allied Health
- 2013/14 Government Funding: ~ USD 5.69B (HKD44.4B)



# Some of our hospitals in Hospital Authority Hong Kong (HAHK)



# Two Levels of Operational Control for Pharmaceutical Services

- **At Head Office level :**
  - Chief Pharmacist's Office
  - Central steering functions
    - set policy & directions
    - establish professional standards
    - develop and implement & support systems
    - monitor progress on all pharmaceutical issues
- **At Hospital Cluster level :**
  - Hospital Pharmacies Cluster Chiefs
    - Control & perform decentralised operations at local pharmacies including purchasing, clinical activities



# Out - Patients waiting to be served at different pharmacies at our hospitals



# Magnitude of our daily business transactions in all HA pharmacies in 2013

| Transaction types                                      | Units   |
|--|---------|
| No. of Dispensed <u>Items</u>                          | 215,000 |
| No. of Dispensed <u>Prescriptions</u>                  | 66,000  |
| No. of <u>Patients</u> Served                          | 58,000  |
| No. of <u>Suppliers</u> dealt with                     | 60      |
| No. of <u>Purchase Orders</u> made                     | 845     |
| Dollar value of <u>Stock items</u> received in HK\$    | 36M     |
| No. of <u>stock items</u> involved in stock receipts   | 1,600   |
| No. of <u>Pharmacy Stores</u> for Stock Receipt/ issue | 80      |
| No. of <u>Stock Movements</u> in these stores          | 2,400   |





# Ever wonder what is the backend of in our pharmacy stores serving the hospitals, SOPC & GOPC ?

- Where do our drugs come from ?
- How to control and monitor the movement of drugs
- What are the logistics in stock receipts ?
- What are the processes ?
- How to track and trace the Supply Chain ?

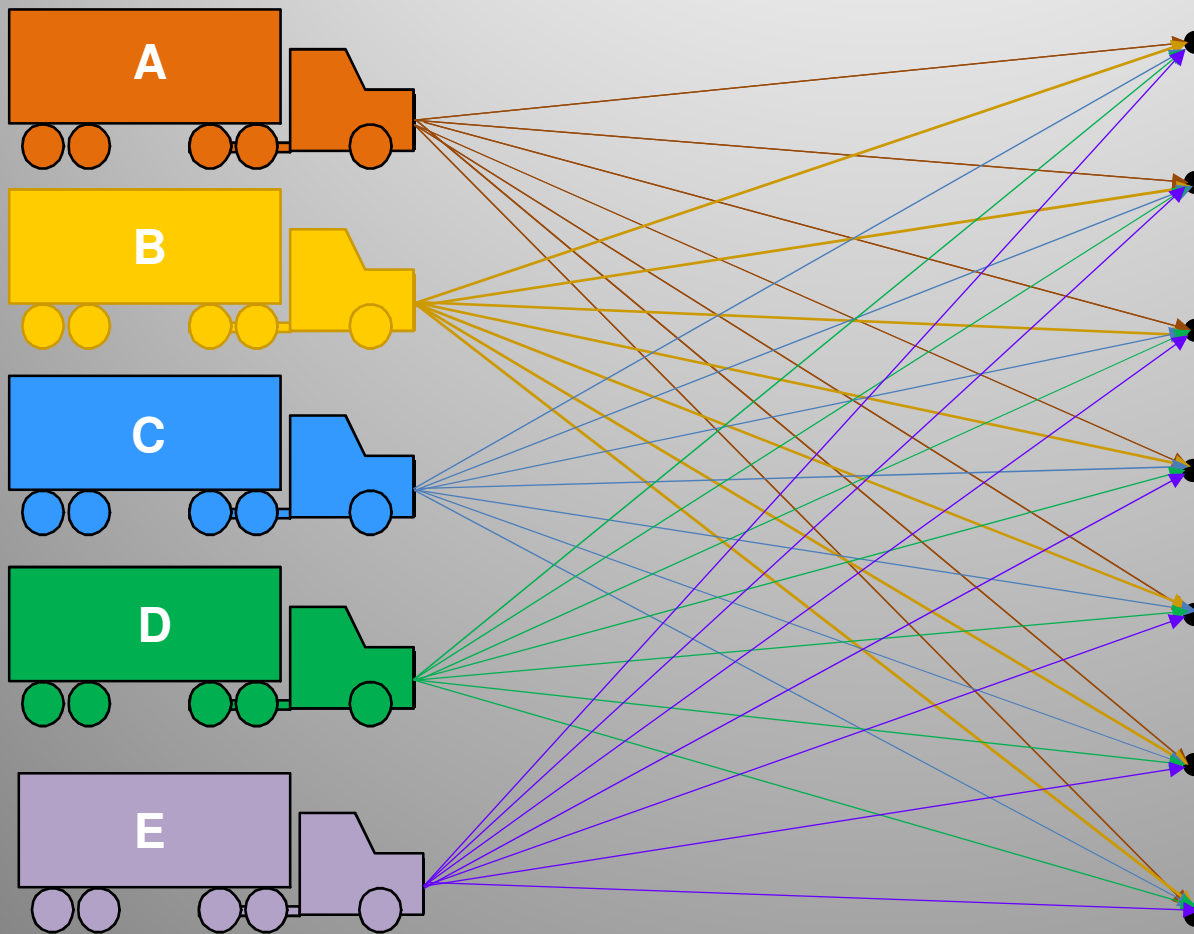




# The ordering and delivery processes in our HA pharmacies

**External :**  
From Suppliers (>200)

**Internal :**  
At Pharmacy stores (>100) in 7 clusters





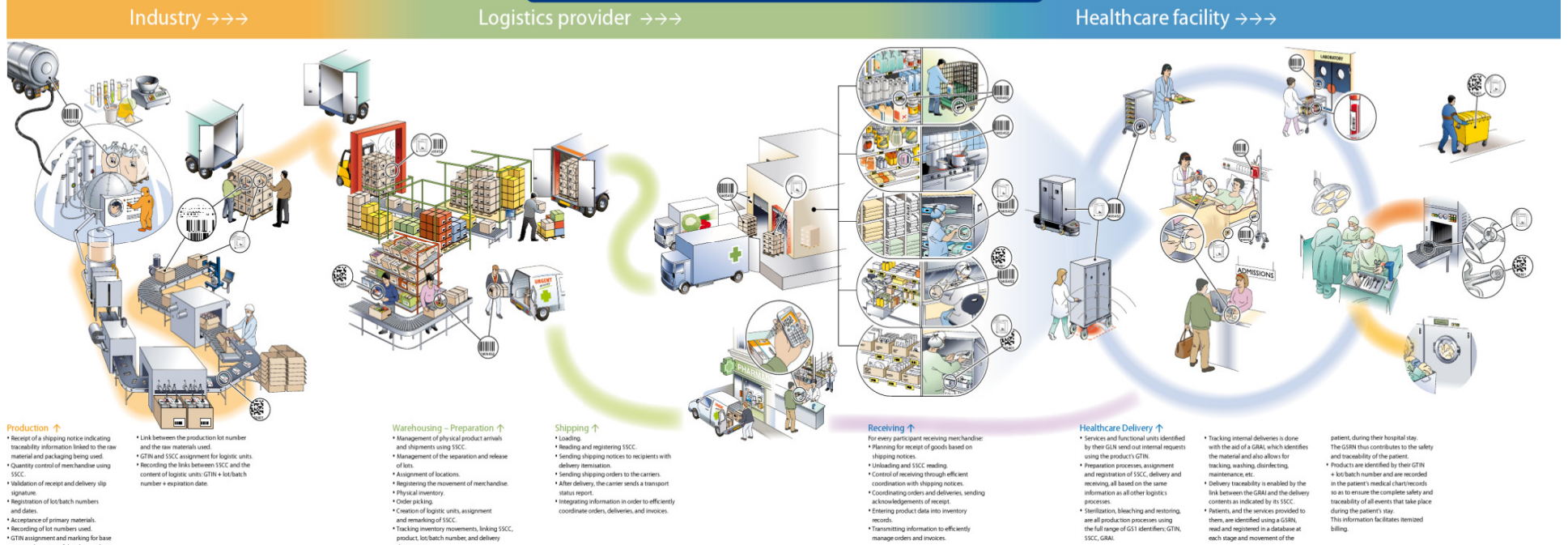


# The importance and significance of Quality, Safety and Efficiency in drug distribution/medication use



## Description of the Major Supply Chain Processes

Each of these processes might be performed by different organisations or by a single entity







“Insanity:  
Continuing to do the same  
thing and expecting different  
results.”

- Albert Einstein



# 2009 - Catalysts for change....

## 醫療失誤訴訟增五倍

醫管局12年賠償逾三億元

涉及醫管局醫療失誤  
申索賠償和訴訟費用

| 備案年份 | 賠償金額(百萬元) | 訴訟費用(百萬元) |
|------|-----------|-----------|
| 1992 | 2.5       |           |
| 1993 | 20.5      |           |
| 1994 | 9.7       |           |
| 1995 | 9.8       |           |
| 1996 | 41        |           |
| 1997 | 16.7      |           |

## 4克威院用藥出錯

## 公院藥

【記者伍詠茵報道】醫管局醫院自願呈報的藥物事故共約一千宗，真正發生的個案共五百卅宗。病人因病房藥物用完，竟不獲病人病情惡化被送入深切治療部時寫錯劑量，病人因此心跳減慢。

醫管局發表的《藥物事故報告》藥物事故計畫過去十年的情況。用作控制血糖的胰島素是自九物，二百廿八宗個案中有十四宗氯化鉀、嗎啡，常用止痛藥撲熱

### 最常犯無

十大藥物出錯範圍包括缺乏等；最常見的首三個事故出錯原因及處理人員精神不集中。

報告指呈報計畫設立以來，由九四／九五年呈報八千一百多宗，增至〇三／〇四年的一萬八千三百多宗，僅五十二宗對病人造成影響。報告指數字增加是正面發展，顯示醫院願呈報個案，從中吸取教訓。藥物事故出錯的工序，最常見於處方藥物，醫生是最常涉及的犯錯人員，佔九成二，其次是護士及藥劑部員工。

另外，威爾斯親王醫院李嘉誠專科門診上周六更新電腦系統



近日藥物風波影響不少病人早前須到公院換藥，醫管局為堵塞漏洞，推出7招改善問題。

### 藥物採購系統改善7招

- 在採購高風險藥物項目時，要求生產商引進微生物學測試作為先決條件，並在運送藥物時提供該批藥物的批號檢驗證明書
- 加強由醫管局進行的藥物樣本測試，除會涵蓋更廣泛種類的藥物，並會按風險程度，進行微生物學測試
- 要求供應商在送貨單上提供更多付運藥物的基本資料，協助醫院更準確有效驗收貨品
- 與衛生署探討更易取得藥物註冊重要資料的渠道，包括包裝規格，加強協助核實藥物是否符合註冊規管要求
- 考慮向多於一個供應來源，採購高用量和高風險藥物
- 提升醫管局的藥物資訊系統以加強監控，並逐步邁向：
  - 引進條碼系統
  - 自動核對訂購和送貨內容是否相符
  - 在不同的發放單位提供自動藥物核對及批號追蹤功能
  - 防止發放過期藥品
- 設立藥物品質保證辦事處，加強質素監管及實施各種改善措施

資料來源：醫管局

3 million imported tablets were ineffective  
Drug's expiry date was

Secretary for Health, Welfare and Food York Chow cited the figures in Legco in response to a question by medical sector lawmaker Kwok Ka-ki.

workshops held for the staff are enough to educate staff on how to communicate with patients.

matthew.lee@globalchina.com

suspended the company's licence yesterday, but an investigation was continuing.

The department said it was informed by the UK manufacturer that the expiry dates of the two batches of cosalgesic tablets - 3.6 million in total - numbered CX 3751 and CX 3754 and imported by Unipharm were May 2009 and June 2009 respectively.

"But the expiry dates printed on the two batches of drugs found in Unipharm were June 2010. The case will be referred to police for further investigation," the department said.

second falsified expiry date of two weeks.

Last week, the department revoked Marching Pharmace Limited's licence for a month for distributing pharmaceutical products with an indicated shelf-life of years when the products only two-year shelf-life.

William Chui Chun-ming, executive director of the Society of Hospital Pharmacists, called on the government to take action against

11.12.09 粵語新聞



# The Journey on Supply Chain Modernisation Project began when HA announced in March 2009 – The Key Initiatives

- 6. Enhance the HA's Pharmaceutical IT systems to improve controls by moving progressively towards :**
- introducing bar coding
  - automatically check what is received against what was ordered
  - automatically track and trace drugs to the point of issue and
  - prevent dispensing of expired items



Thur, 26 March 2009

## Key initiatives to enhance HA's pharmaceutical products procurement system

To ensure drug quality and safeguard patient safety, the HA announced today the following key initiatives to enhance our pharmaceutical products procurement system:

1. Require manufacturers to introduce microbiology testing as a prerequisite to procurement for high risk drug items and for provision of batch release reports on delivery of drug products.
2. Enhance the HA's sample testing to include a wider range of drugs and microbiology testing based on risk levels.
3. Require suppliers to provide additional standard information for drug delivery documentation to enable more effective physical checking of goods received.
4. Work with the Department of Health to improve ease of access to key additional registration details, including pack sizes to strengthen regulatory compliance.
5. Consider introducing multi-source for high volume/risk drugs.
6. Enhance the HA's Pharmaceutical IT systems to improve controls by moving progressively towards :
  - Introducing bar coding;
  - Automatically check what is received against what was ordered;
  - Automatically track and trace drugs to the point of issue; and
  - Prevent dispensing of expired items.
7. Establish a Drug Quality Assurance Office to enhance quality monitoring and implementation of improvement initiatives.



Please send your suggestions via fax: 2808 0242 or e-mail: [ehaslink@ho.ha.org.hk](mailto:ehaslink@ho.ha.org.hk)

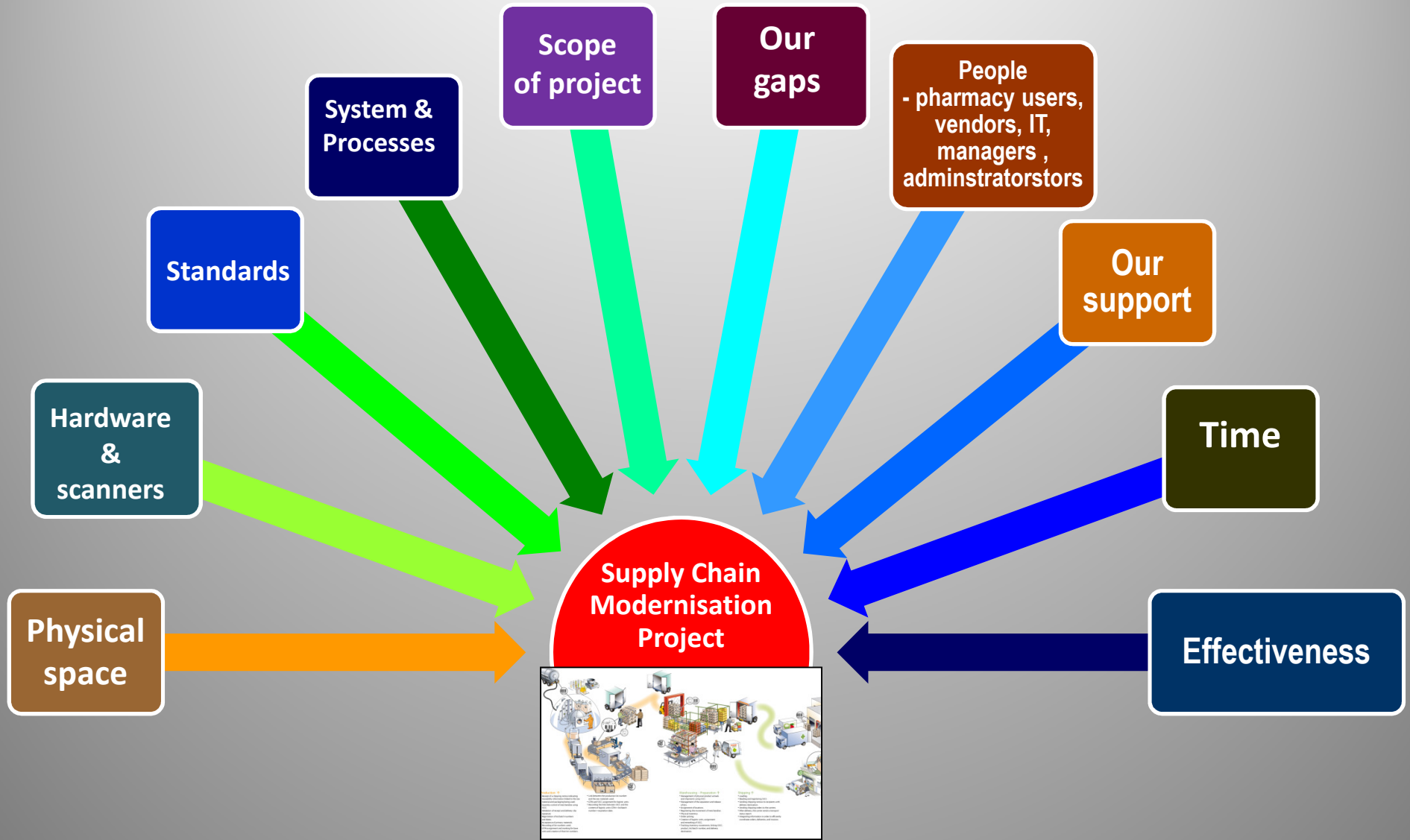


# Turning threats into opportunity

## How did we do this ?



# What are the Challenges in SCM Project: fighting the unknowns !





# Leadership & Project Governance

- **Central level**

- User Resource Group (URG)
  - Chaired by Cluster Service Director at Headoffice level
  - 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

# Understand the need to transform/ modernise the Supply Chain process on Pharmaceutical Products

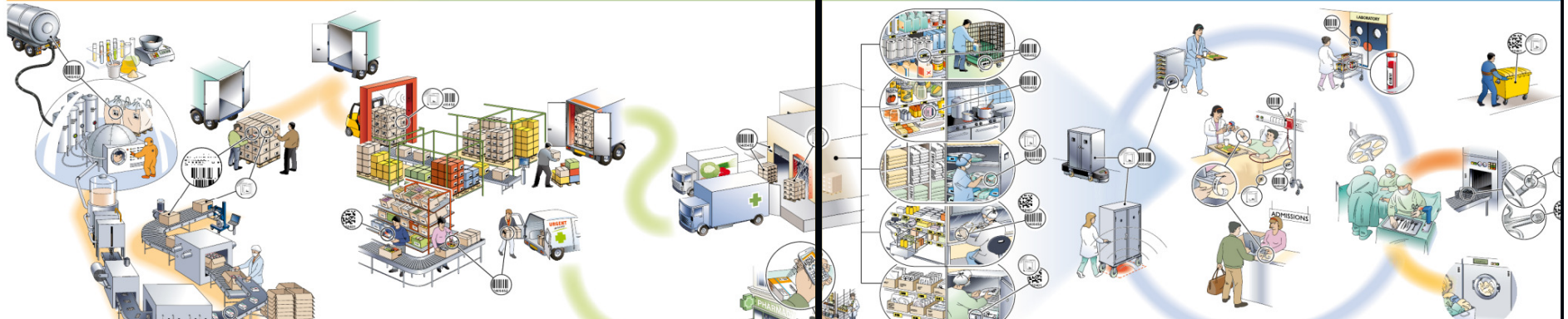
## Description of the Major Supply Chain Processes

Each of these processes might be performed by different organisations or by a single entity

Industry →→→

Logistics provider →→→

Healthcare facility →→→



**From manufacturers**

**→ into pharmacy stores**

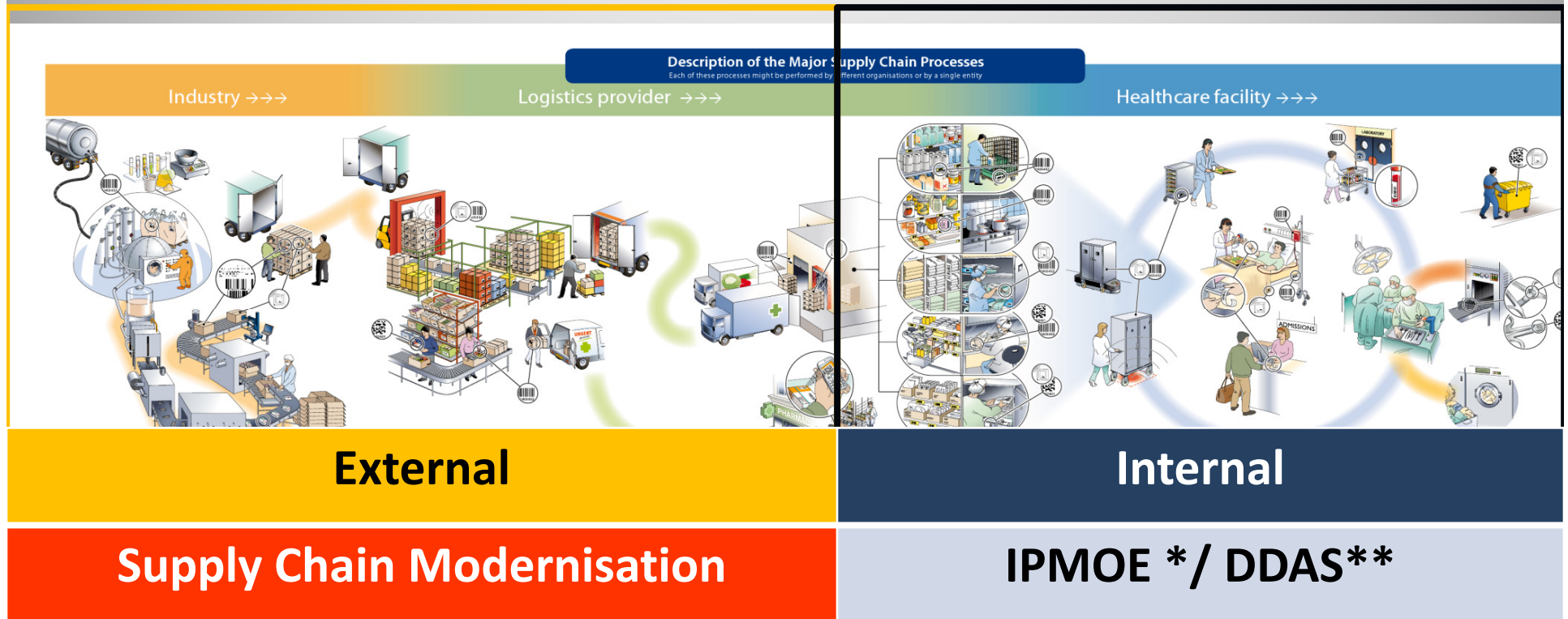
**→ into Dispensing area**

**out from pharmacy stores  
→**

**→ to point of care  
(patients)**



# Identify the scope to be covered in the Supply Chain Modernisation project on Pharmaceutical Products

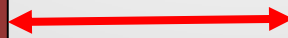


\*IPMOE = In-patient Medication Order Entry  
 \*\*DDAS= Drug Distribution and Administration System

# Defining what we want to do in SCM ?

**External :**  
**From Suppliers**

**Internal :**  
**At Pharmacy stores**



**Order &  
Product  
Information  
(ASN)**

**Drug delivery**



**Drug Receiving**



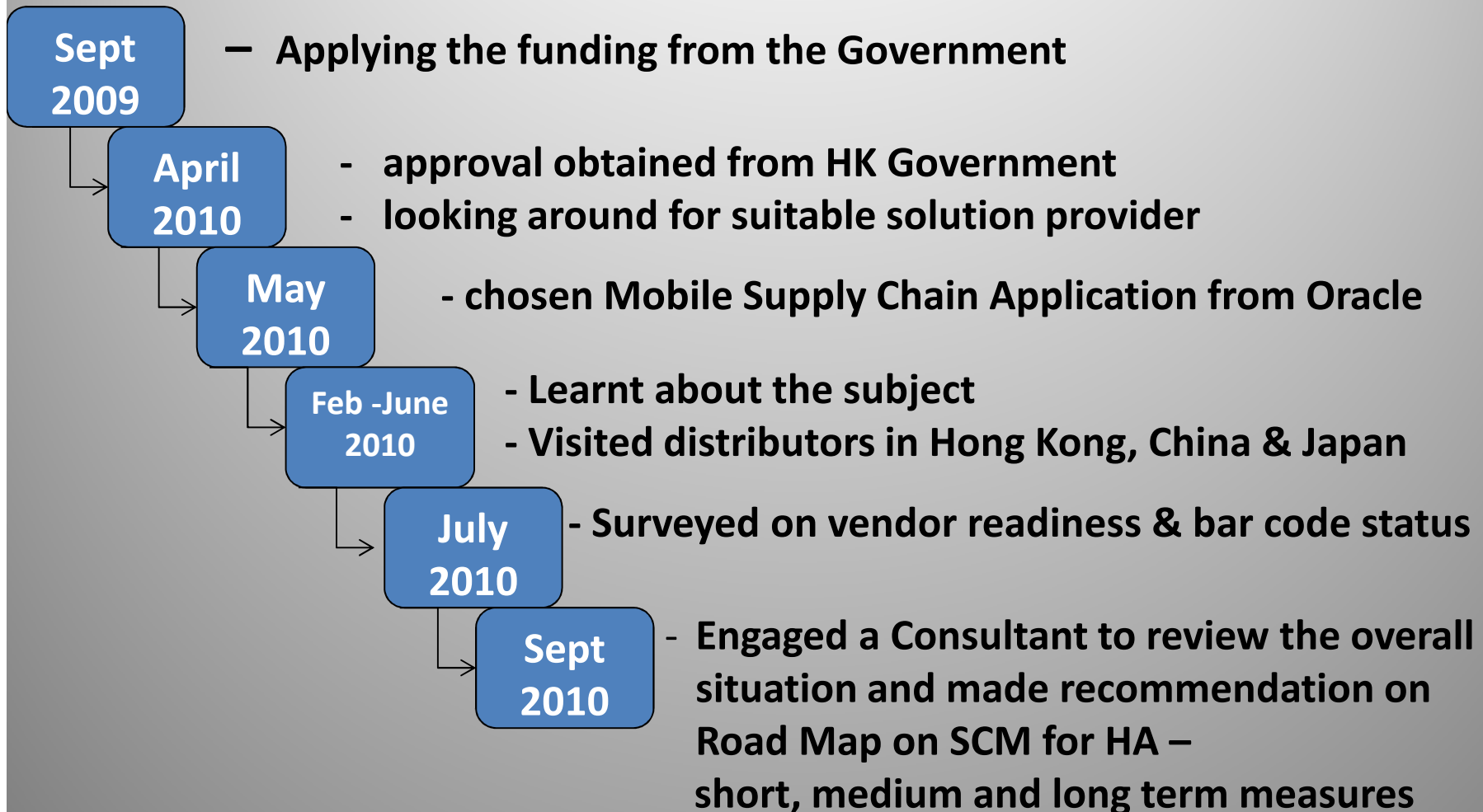
**Scanning of bar coded  
information on outer  
pack for checking,  
verification & tracking**

**Enable track and trace of product movement from suppliers to pharmacy stores through MSCA with provision of :**

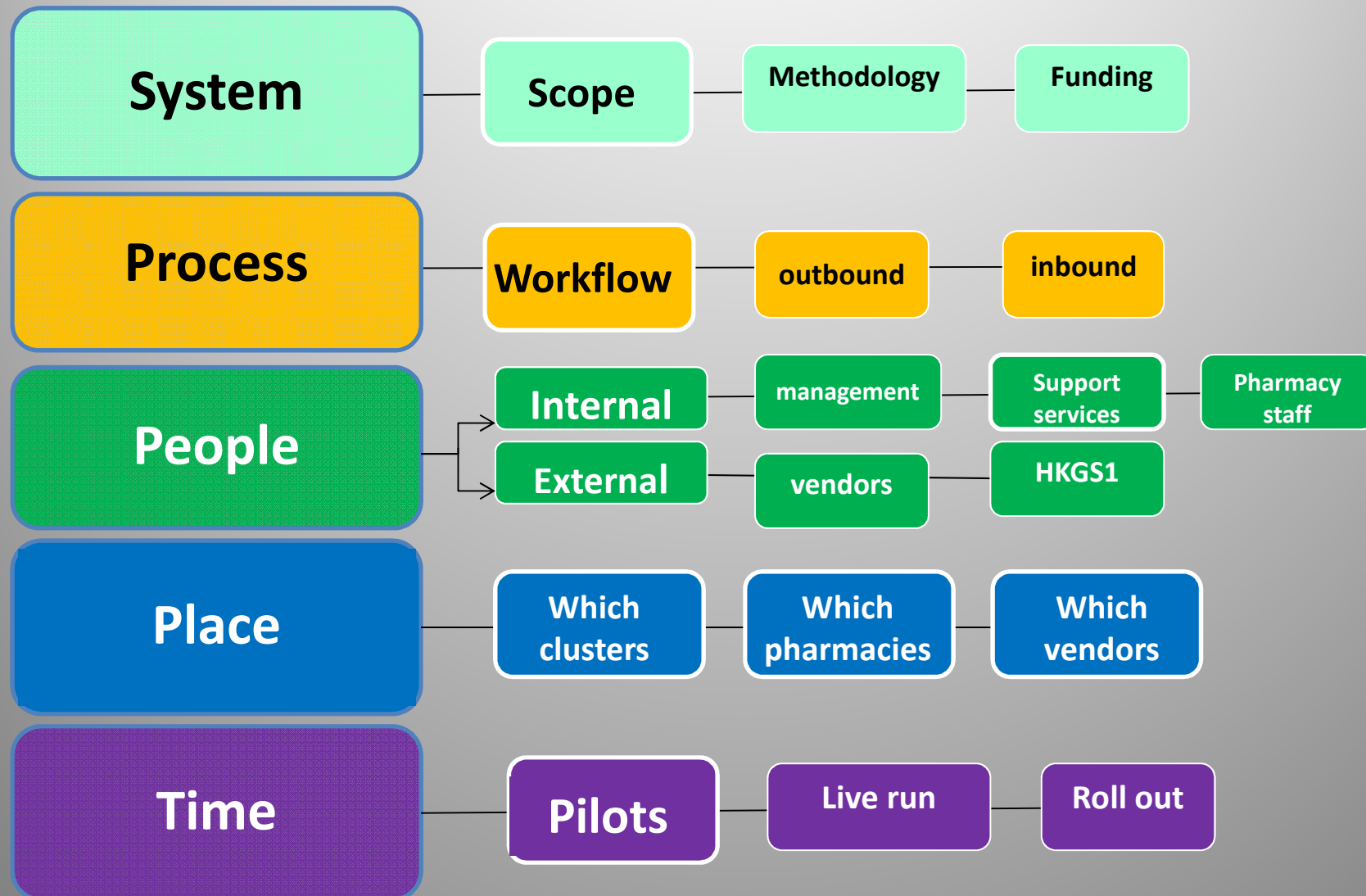
- **Advance Shipping Notice (ASN) from suppliers to pharmacy ERP to verify PO**
- **Bar coded information on individual product and outer delivery pack from suppliers to verify required information, manufacturer, lot no., expiry dates etc**



# Finding out the means and how's to do the project

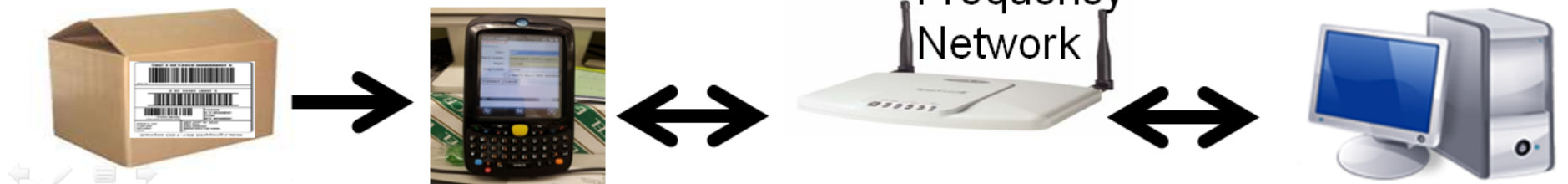


# Supply Chain Modernisation on pharmaceutical products – areas of concerns



# The IT system : 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





# Understand the Industry Standards provided by GS1



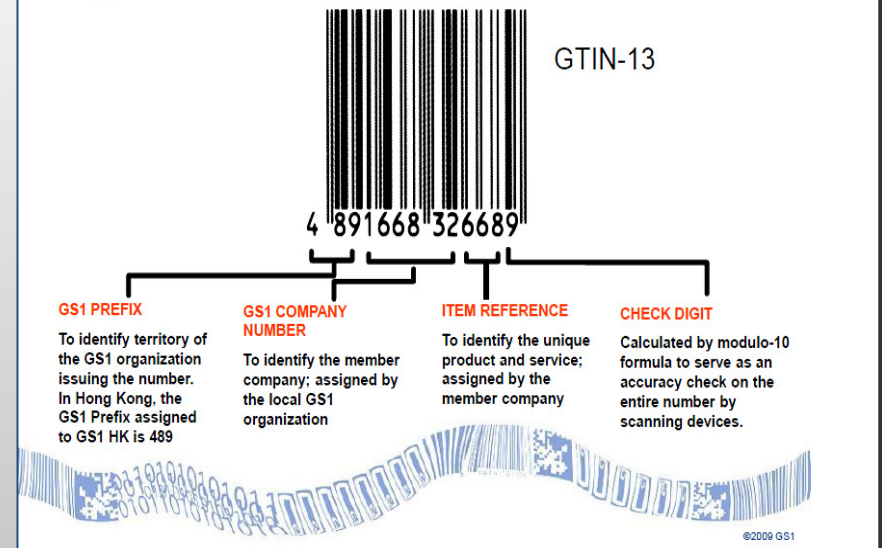
## GS1 Identifiers in Healthcare

| GS1 Key   | Represented Information                   |
|---|---|
| GTIN<br><i>(Global Trade Item Number)</i>       | Identification of Healthcare Product      |
| GLN<br><i>(Global Location Number)</i>          | Identification of Location & Legal Entity |
| GSRN<br><i>(Global Service Relation Number)</i> | Identification of Patient & Care Giver    |
| Application Identifier                          | Represented Information                   |
| AI(01)  | Global Trade Item Number                  |
| AI(10)  | Batch Number                              |
| AI(17)  | Expiration Date                           |
| AI(21)  | Serial Number                             |

\* GS1 keys & Application Identifiers are recognised by ISO.

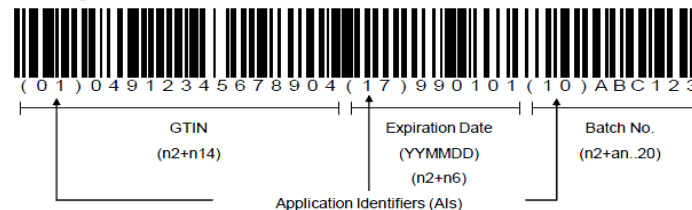


## Data Structure of a GTIN



## Batch Level Identification & Expiration Control

- For batch control or expiry date control, which are common to healthcare items, people may prefer encoding batch number and expiration date in barcode.
- GS1 System provides data structure standard for them as well:
  - Batch number – Alphanumeric data format with variable length up to 20 characters
  - Expiration date – Numeric data format (YYMMDD) with fixed length of 6 digits



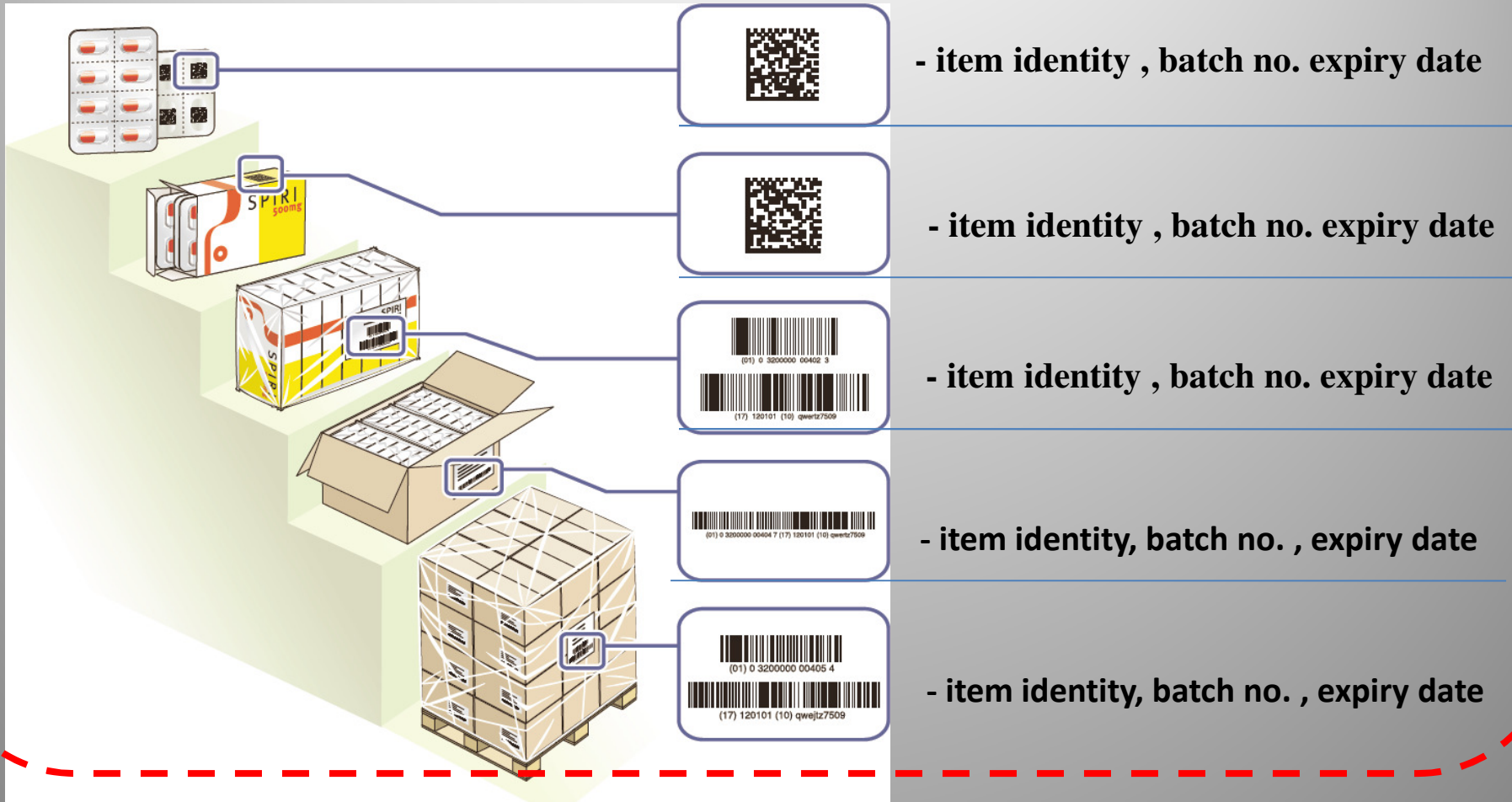
Expiration date & batch no. must be used with GTIN and application identifier (AI) in a barcode.

# 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



# Is it feasible to have Bar-code track-and-trace all the way ?



Target areas for direct-from-supplier bar-coding



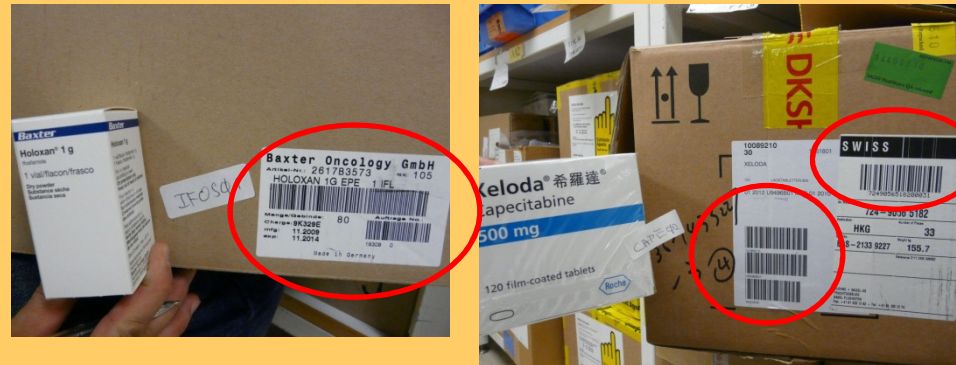
# Legislation in Hong Kong on pharmaceutical products

- Pharmaceutical Product registration requirement by HKSAR
  - no legislative requirement on bar code on drug package
- Pharmaceutical industry not mandate to have the bar code printed
- Generally, the sales and marketing people are not concerned with this need



# Examples of problems encountered on bar codes

Difficulties to identify the correct bar code to scan



Some bar codes are not in black and white



Not a GTIN bar code, only a supplier Item bar code



AI (241) which is a customer Part Number and cannot be used as an item identifier



# What is the Gap and how big is it ?

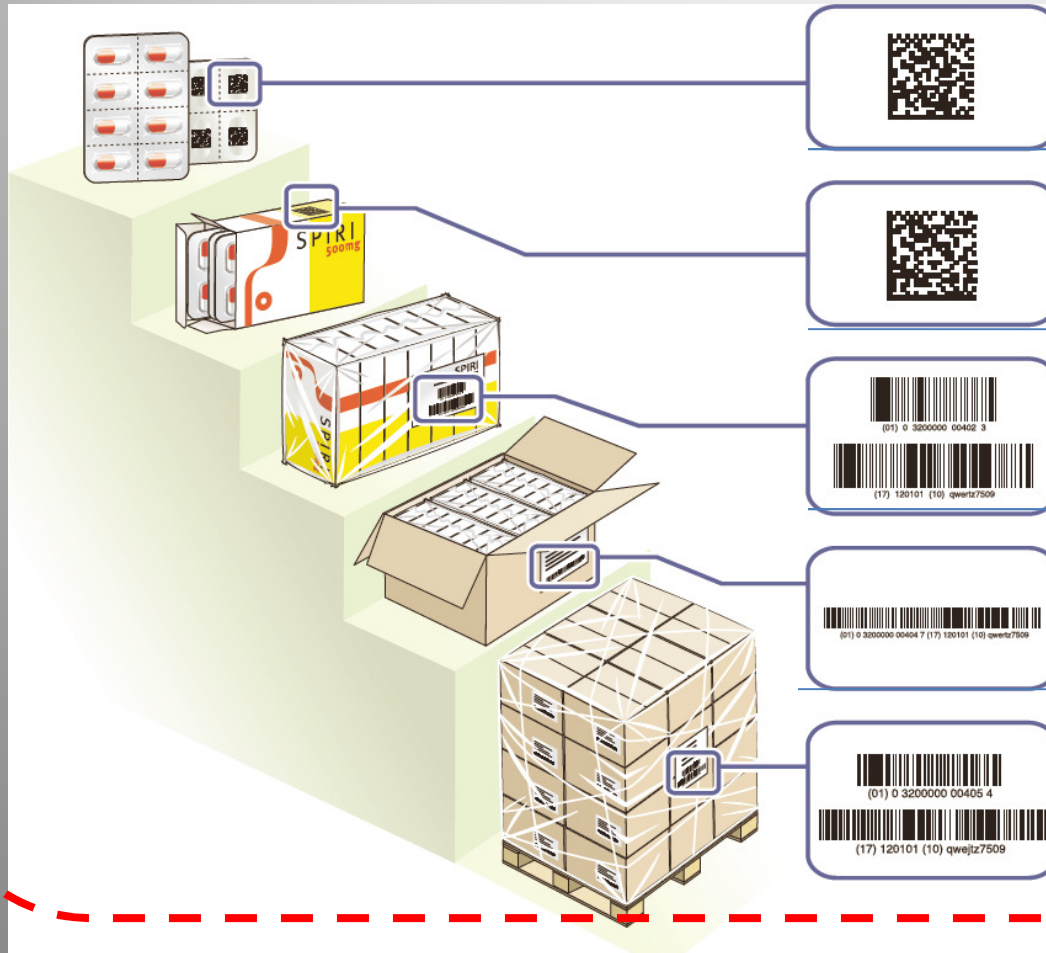
## Findings :

- 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





# Is it feasible to have Bar-code track-and-trace all the way ?



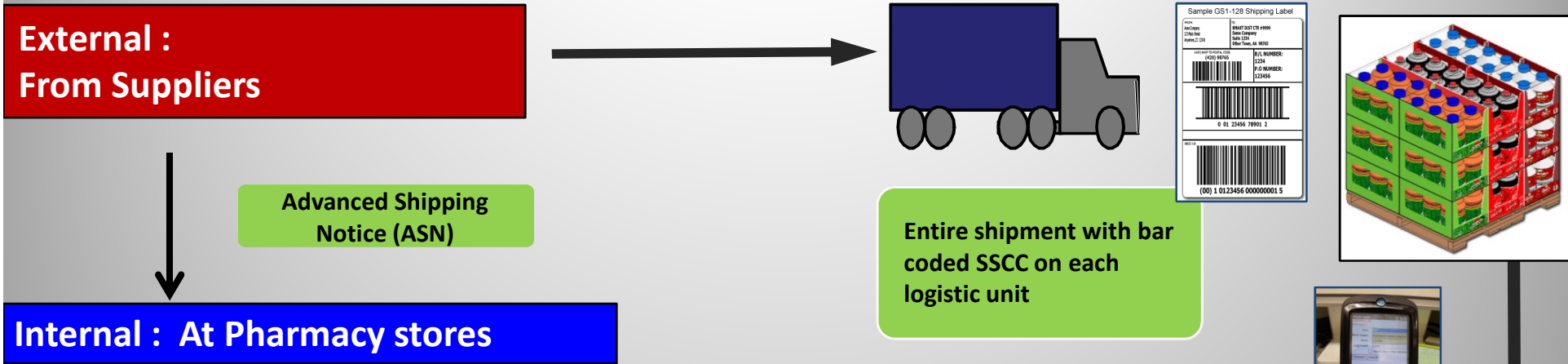
**stop at the  
logistic  
units!**

- item identity, batch no. , expiry date

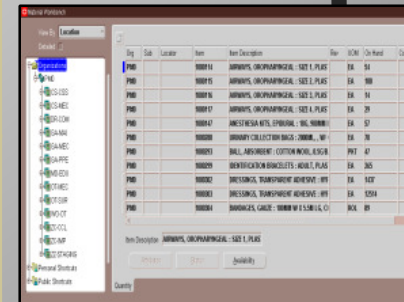
- item identity, batch no. , expiry date

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

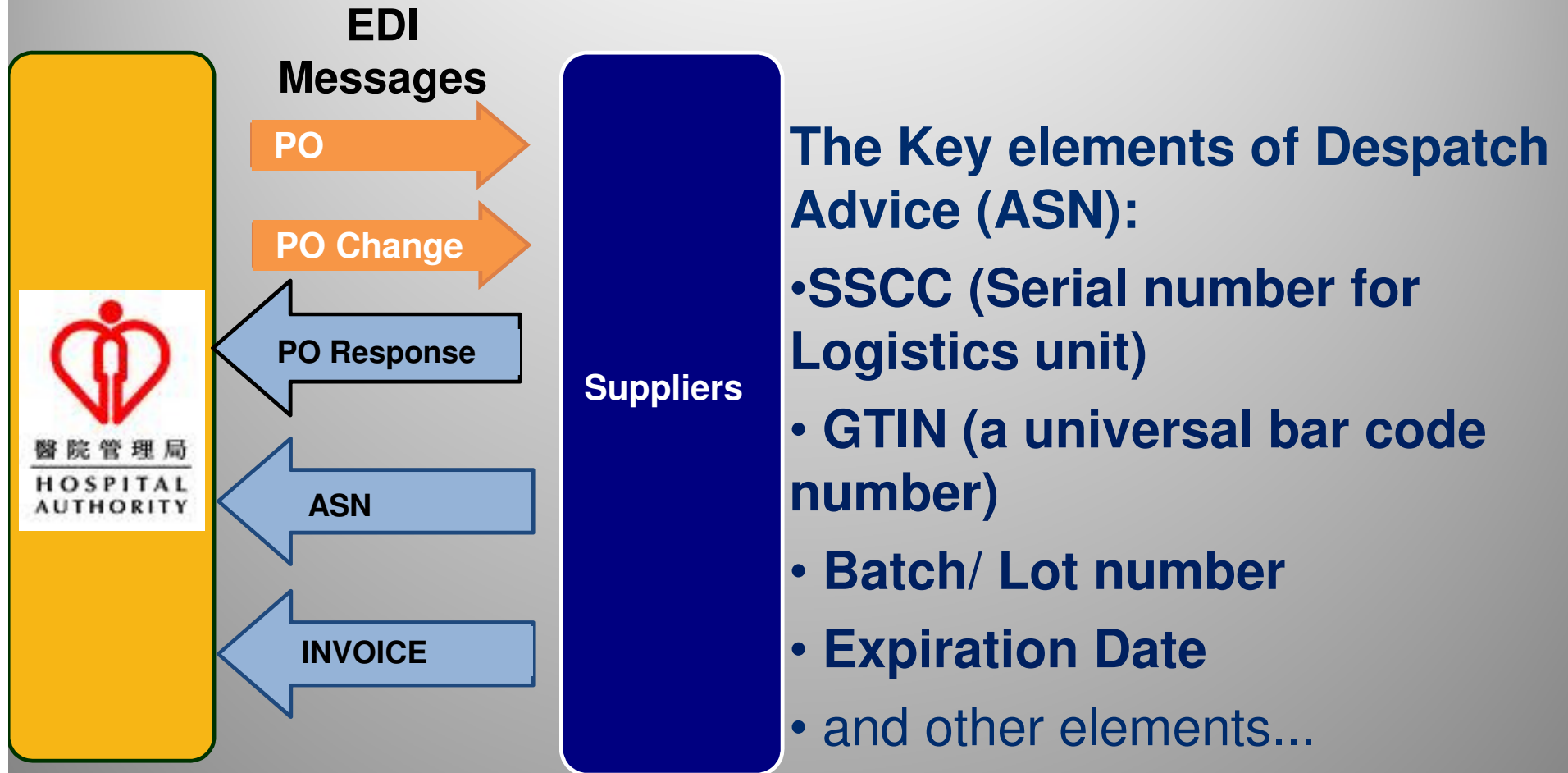
# The process flow in Mobile Supply Chain Application



|                     |   |
|---------------------|---|
| Before goods arrive | <ol style="list-style-type: none"> <li>1. Prior validation of manufacturer, country of origin, quantity, etc.</li> <li>2. Online provision of lot no, expiry date</li> </ol>  |
| When goods arrive   | <ol style="list-style-type: none"> <li>3. Scan outer pack bar code label to verify Purchase Order (PO)</li> <li>4. PO details displayed in scanner for inspection</li> <li>5. Confirm receipt &amp; instant update into system</li> </ol> |
| Stock into stores   | <ol style="list-style-type: none"> <li>6. Pack-unpack containers to separate items</li> <li>7. Scan GTIN with lot no. expiry date and confirm qty</li> <li>8. Stock to pre-defined location in stores</li> </ol>                          |
| Drug distribution   | <ol style="list-style-type: none"> <li>9. Enable lot-control with track-and-trace functionality</li> </ol>  |

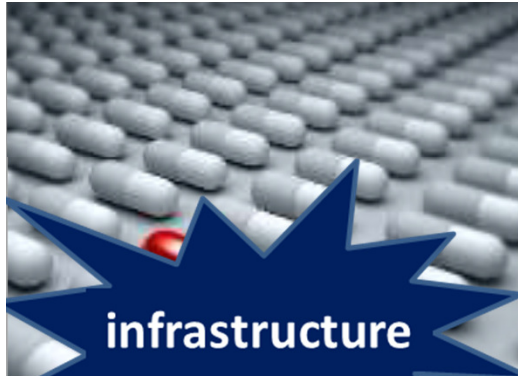


# The electronic information exchange in MSCA process



\*The Despatch Advice (ASN) should be sent 24 hours before the Physical Goods Delivery.





**infrastructure**

# Preparing for the

# Challenge

**leadership**



**technology**

**System**

Scope

Methodology

Funding

**Process**

Workflow

outbound

inbound

**People**

Internal

management

Support services

Pharmacy staff

External

vendors

HKGS1

**Place**

Which clusters

Which pharmacies

Which vendors

**Time**

Pilots

Live run

Roll out

**resources**

# Defining our action with stakeholders

## 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 :

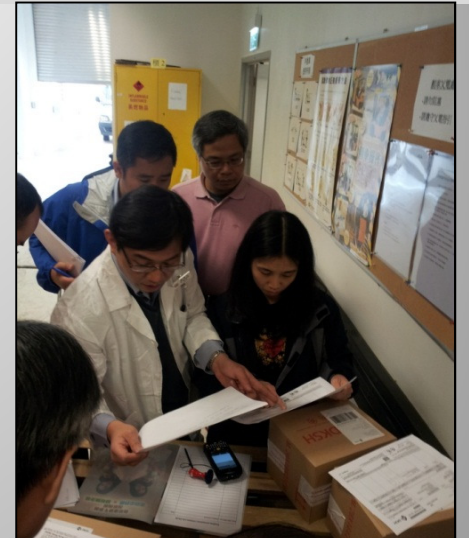
- Management buy in
- Support services
- Pharmacies

### Engagement & support :

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

# Vendor Engagement started in 2010

- No less than 6 mega vendor briefings, 25+ meetings, training workshops, testing, emails, etc...
  - Clarifications on project objectives, process, technical requirement, time frame.....
  - Frequently Ask Questions
- Mock ups on bar code labels,
- EDI messages testing
- End to End testing with mock up products
- On site testing at pilot sites
- With HKGS1 assistance and support



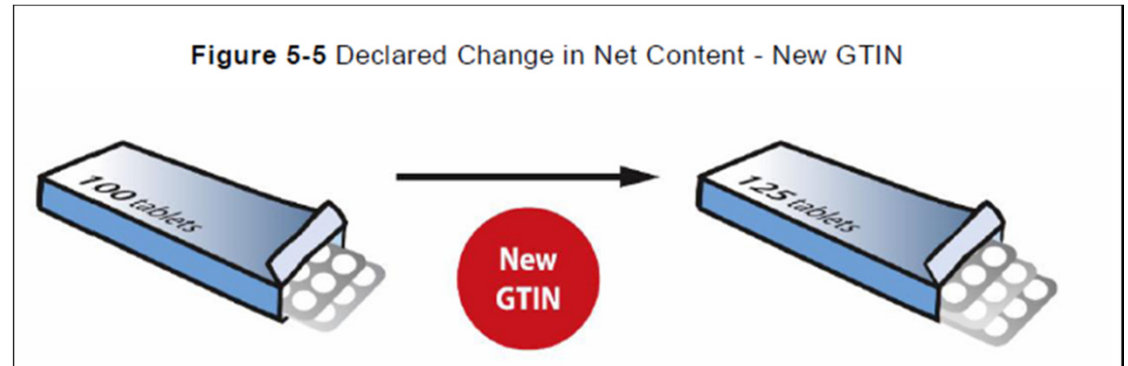
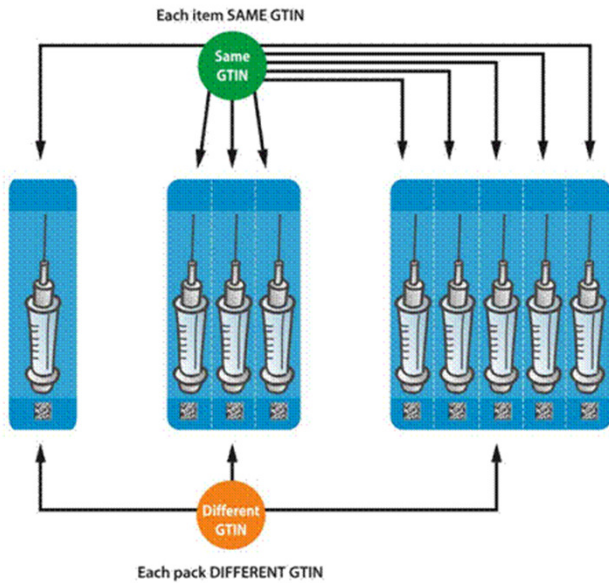


# Importance of GTIN in SCM

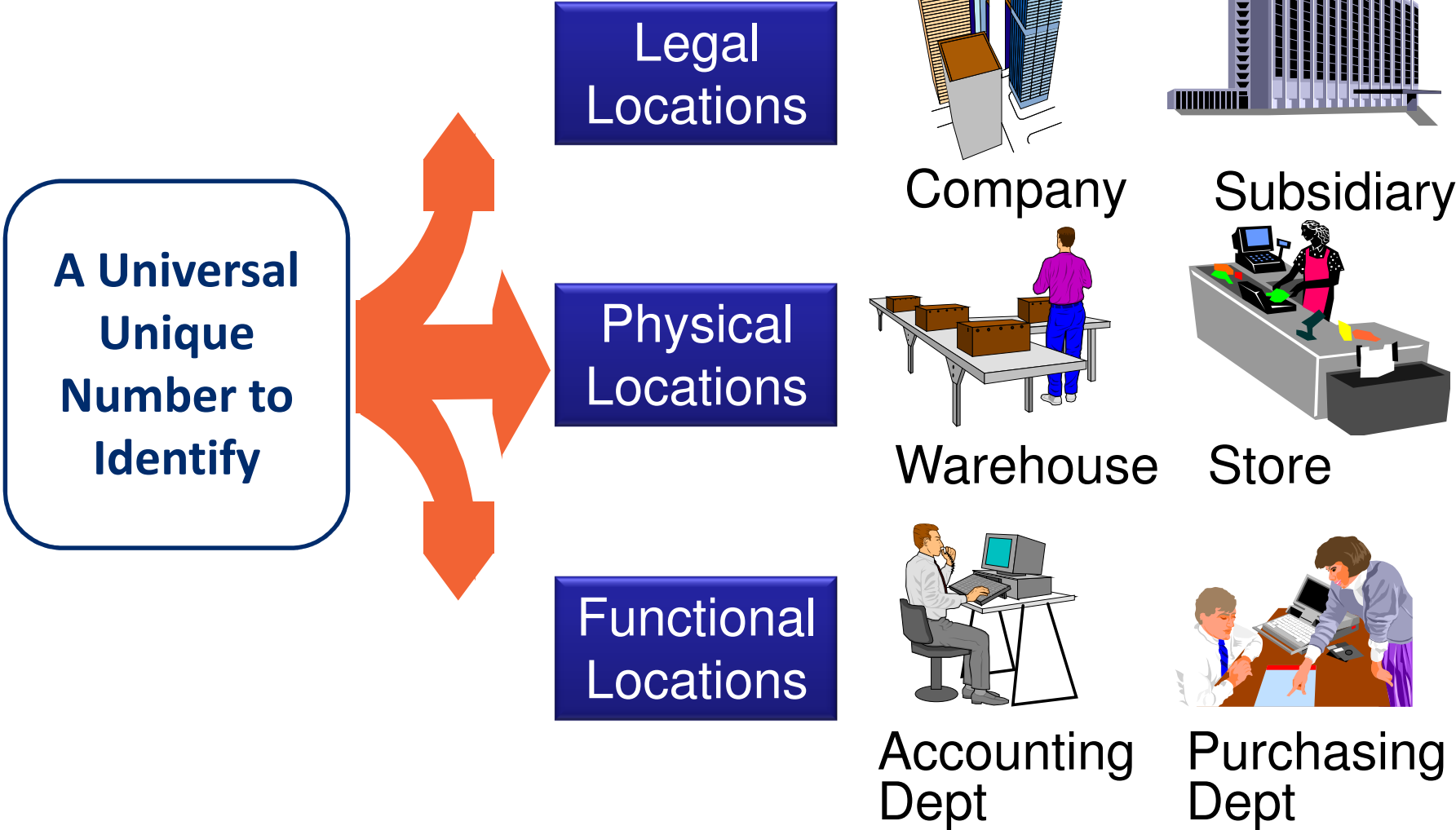
- GTIN is a compulsory requirement for EDI PO
- It is inevitably that some items would not carry a valid GTIN because
  - Free Goods, Sample Goods, Donated Goods, Clinical Trial Goods and duplicate item code created for special program...)
  - Due to System limitation, one GTIN cannot be assigned to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

# GTIN Allocation

## different GTIN



# Locations - Types of GLN





# Standards provided by GS1



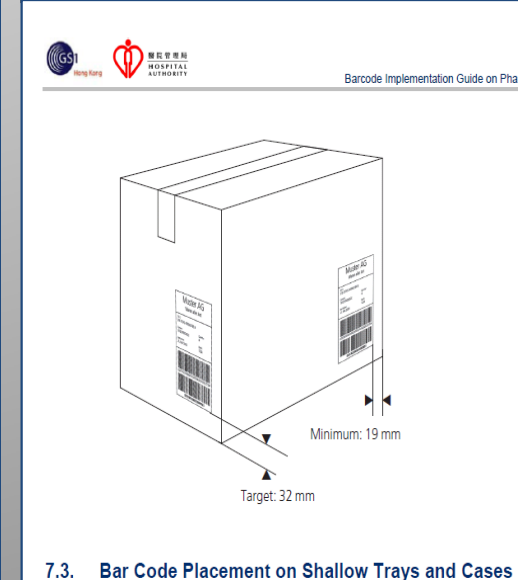
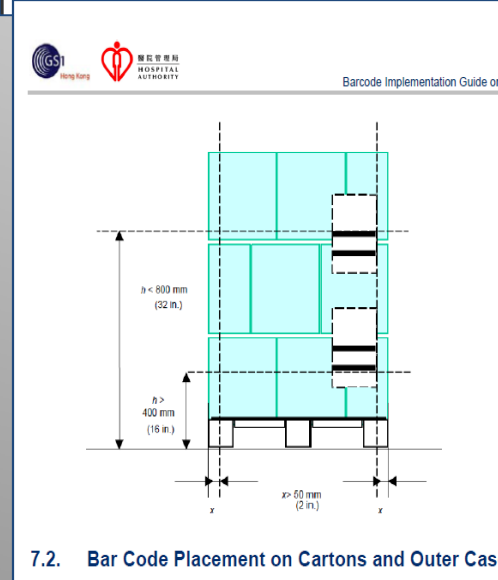
Barcode Implementation Guide on Pharmaceutical Products (Logistics Unit)

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| 5.3. Pick a Bar Code Color                                 | 14 |



The symbol including, its Quiet Zones, should be at edge to avoid damage.





## The Data String for Bar Code

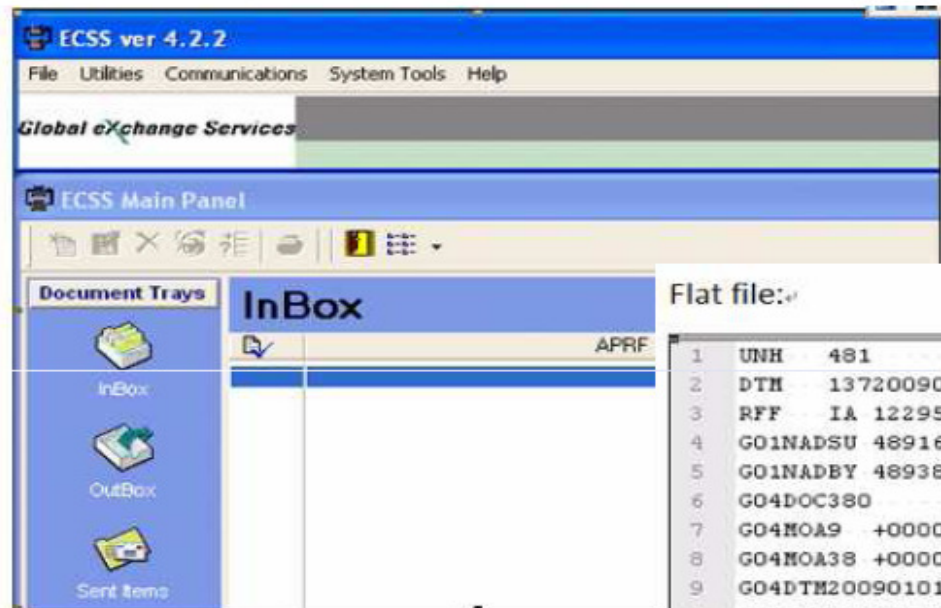
| Application Identifier | Meanings   | Example            | Remark                |
|------------------------|--|--------------------|-----------------------|
| (02)                   | The data follows (02) is the GTIN of <u>ordering base unit</u> | (02)04891668000022 | Must be 14 digit no.  |
| (17)                   | 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

# for vendors with no in house IT system ability



## Cat A – EDI Gateway (EDI PO, PO Response, PO Change, ASN, Invoice)



Programming and Integration is needed  
ERP Capable Suppliers

Flat file:

```
1 UNH 481 RA00002
2 DTH 13720090808 102
3 RFF IA 12295
4 GO1NADSU 4891668900032 VENDOR ABC
5 GO1NADBY 4893899000000 MANNINGS
6 GO4DOC380 INV0000
7 GO4MOA9 +0000000000180000.00
8 GO4MOA38 +0000000000001000.00
9 GO4DTM20090101 102
10 GO4RFFZZZ20090102
11 GO4RFFON P000000
12 GO4DOC380 INV0001
13 GO4MOA9 +0000000000010000.00
14 GO4MOA38 +0000000000011000.00
15 GO4DTM20090201 102
16 GO4RFFZZZ20090111
17 GO4RFFON P000001
18 GO6AJT4
19 GO6MOA+0000000000001000.00
20 G08DLI1 +000001
21 G08MOA146+0000000000000011.00
22 G08PIA4890000000011 EN
```



# Tendering of Hardware & printers & labels

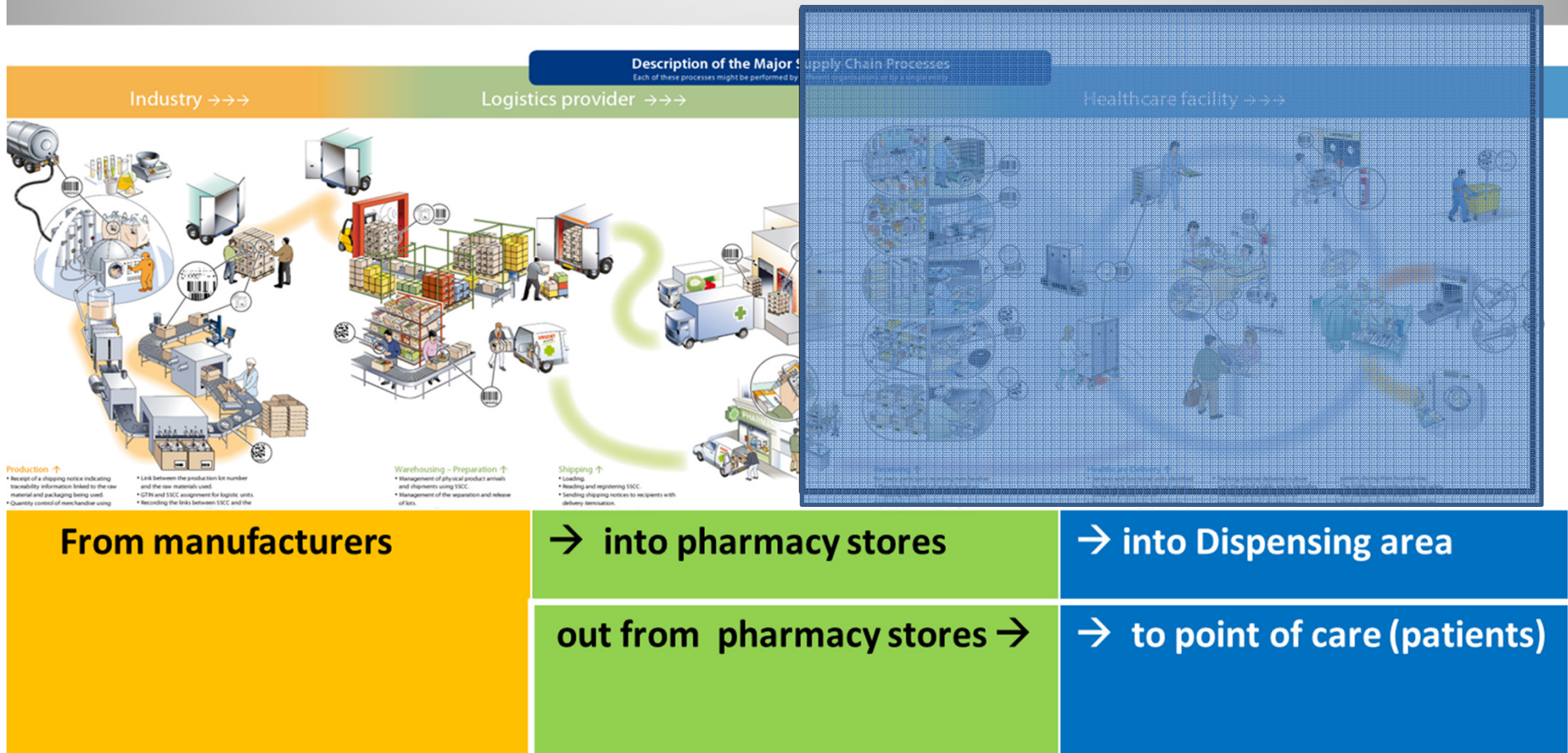


# Hospitals side – engagement with local management & pharmacy

- ERP System
  - Early engagement
  - Data preparation
  - Data cleansing
  - Data conversion
- MSCA / SCM
  - Hospitals Stores Facilities
- Manpower
- Training

# How did we do it ?

## Defining the scope of the Supply Chain Modernisation Project





# How did we do it ?

## Defining time frame for SCM implementation

by phase & batch approach :

### Phase I

- Track from distributors into the main stores
- Applicable to all pharmacy stores in all hospitals
- Involve 2 batches of vendors on all their products

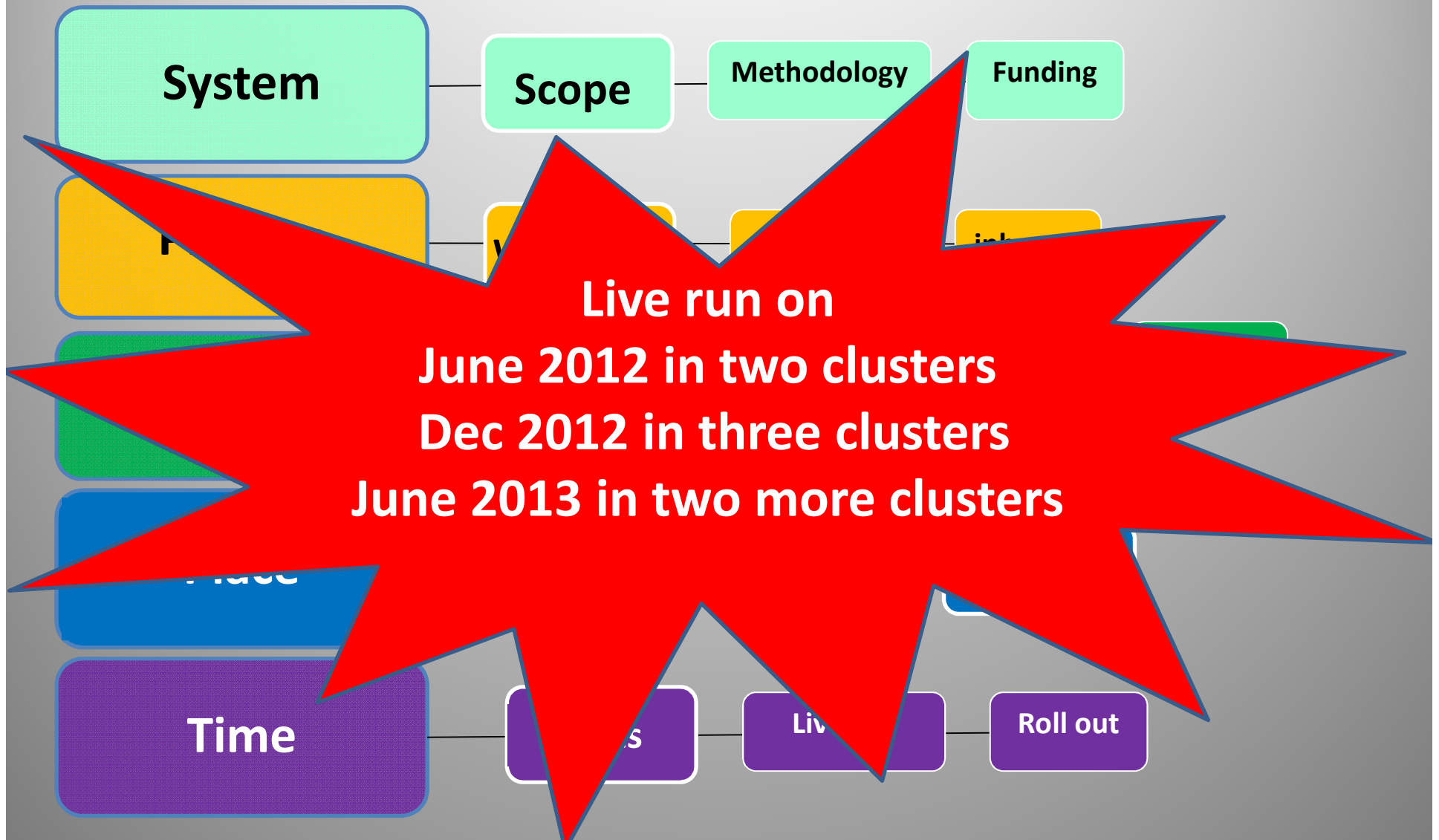
### Phase II

- Track from pharmacy stores to the dispensing stores
- Pilot in two hospitals PWH and QEH on Dangerous Drugs

# SCM Project implementation: by batch & phase approach

| Batch I<br>(live run in June 2013)   | Batch II<br>(live run in April 2014)   |
|--|--|
| <ul style="list-style-type: none"> <li>➤ <b>13+1 vendors</b></li> <li>➤ <b>= about 70% of order lines</b></li> <li>➤ <b>About 38% of item sources</b></li> </ul> | <ul style="list-style-type: none"> <li>➤ <b>+ 13 vendors</b></li> <li>➤ <b>= about 16% more order lines</b></li> <li>➤ <b>About 13 % item sources</b></li> </ul> |
| BAXTER HEALTHCARD LTD  | EUROPHARM LABORATOIRES CO. LTD.  |
| DKSH H.K. LTD  | HK MEDICAL SUPPLIES LTD  |
| FERRING PHARMACEUTICALS LTD  | JOHNSON & JOHNSON (HK) LTD   |
| FRESENIUS MEDICAL CARE HK LTD  | MEDIPHARMA LTD   |
| GAMBRO HK LTD  | MEKIM LTD  |
| HIND WING CO LTD   | PRIMAL CHEMICAL CO LTD   |
| JACOBSON MEDICAL HK LTD  | STAR MEDICAL SUPPLIES LTD  |
| JEAN-MARIE PHARMACAL CO LTD  | SYNCO (HK) LTD   |
| KERRFLEX SUPPLY CHAIN SOLUTIONS LTD  | THE INTERNATIONAL MEDICAL CO. LTD.   |
| LF ASIA (HONG KONG) LIMITED- HEALTHCARE DIVIS  | TRENTON-BOMA LIMITED   |
| LF ASIA (HONG KONG) LIMITED- UNIVERSAL DIVISIO   | UNITED ITALIAN CORPORATION (HK) LTD.   |
| LUEN CHEONG HONG LTD   | VICKMANS LAB LTD   |
| U S SUMMIT CO LTD  | Y. C. WOO & CO. LTD  |
| ZUIFENG PHARMA LTD   |  |

# SMART Achievement





# The Change - Goods Receipts from batch I vendors using ASN & SSCC





# The Gains – a much improved goods receipts process assisted by technology





# The Gains - much better & improved storage facilities





# Problems encountered

# Requirement for Expiry Date Format

| e.g. | Expiry Date on Product | Expiry date format in ASN message<br>CCYYMMDD | Barcode Format on Shipper Case<br>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                          |

# Mismatch Expiry date information on ASN and products

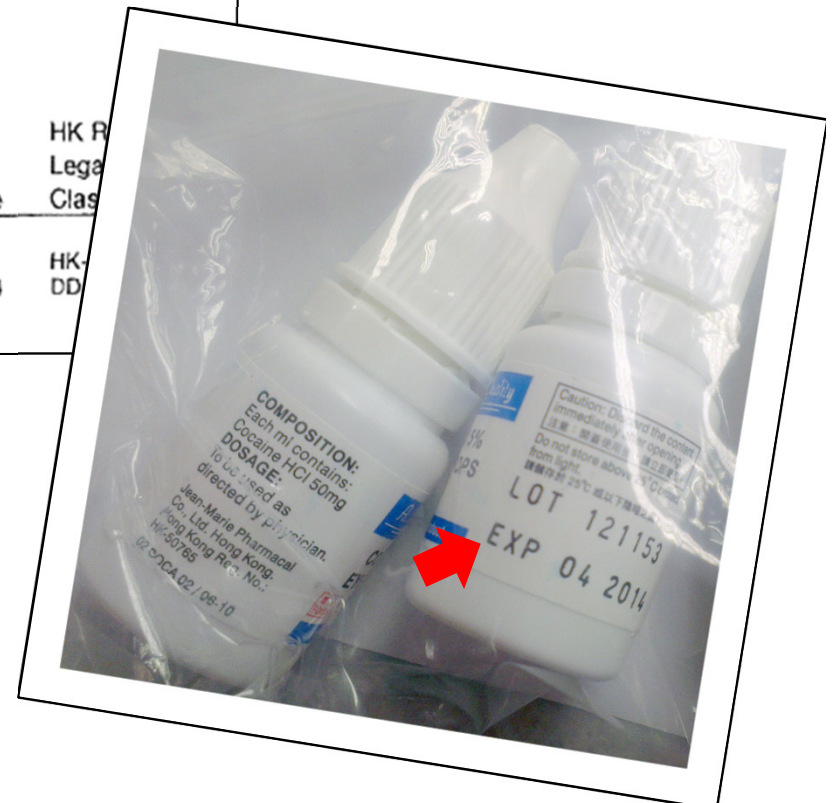
- Expiry date printed on products did not match ASN message -> When no date is specified, HA takes 1st day of month as the 'used by' date.

| Item Description                    | Manufacturer / COO | Bonus | Deliver Qty | O/S PO Qty | PO Qty | Purchasing UOM | Lot No Exp. Date | HK R Legal Class |
|-------------------------------------|--------------------|-------|-------------|------------|--------|----------------|------------------|------------------|
| COCAINE HCL EYE/NASAL DROPS 5% 10ML | JEAN MARIE/HK      |       | 3           | 3          | 3      | BOTTLE         | 121153 30-APR-14 | HK-DD            |

SHEUNG WAN

Remarks: 2210000579

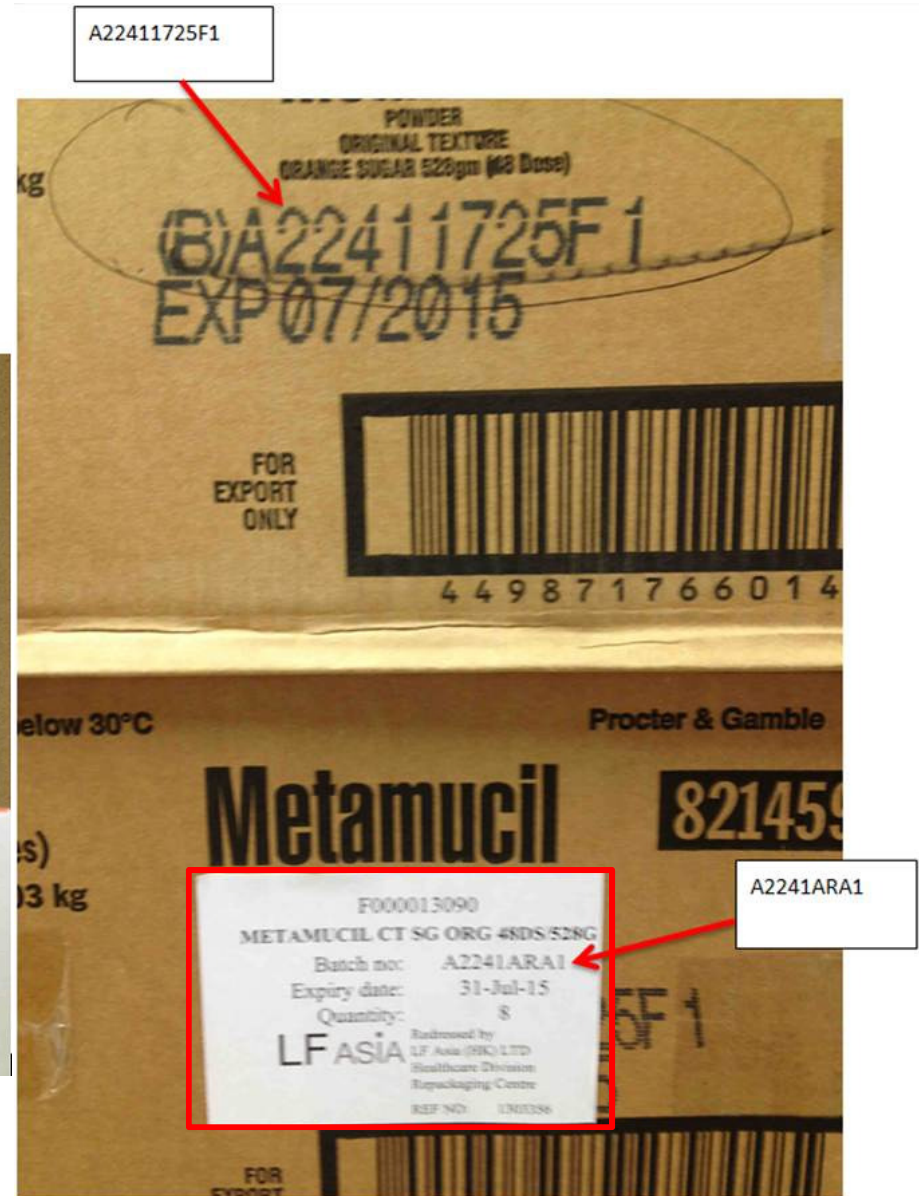
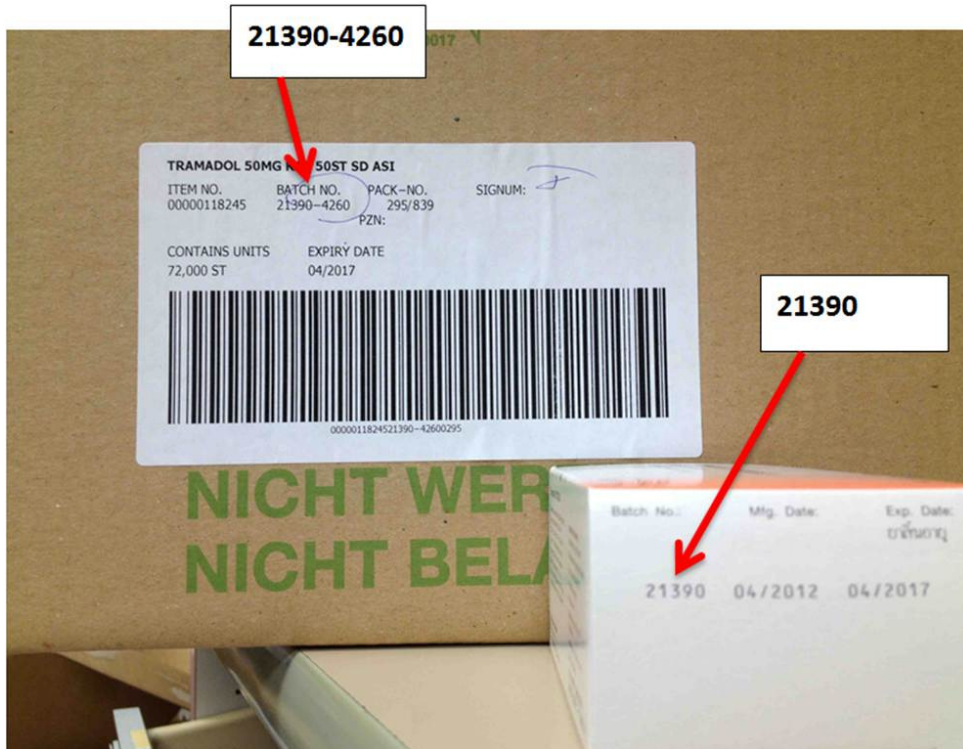
| 編號 ART. NO. | 摘要 DESCRIPTION   | 數量 QUANTITY |
|-------------|--|-------------|
| 260023      | COCAINE HCL 5% EYE/NOSE DROPS*** @ 10ML(L)<br>Jean-Marie / Hong Kong / HK-50765<br>121153 / 04-2014 / DD | 3.00 支      |





# Batch Number Issues

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

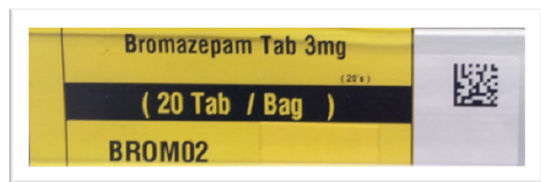
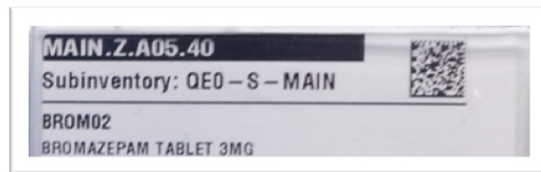


# Batch number issues

- 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

Inventory Org  
Receiver  
Receipt Date  
Receipt#

QE0 - QUEEN ELIZABETH HOSPITAL FOR DRUGS  
CHIK, XX J049150  
27/AUG/2012 15:56:30  
306000001472

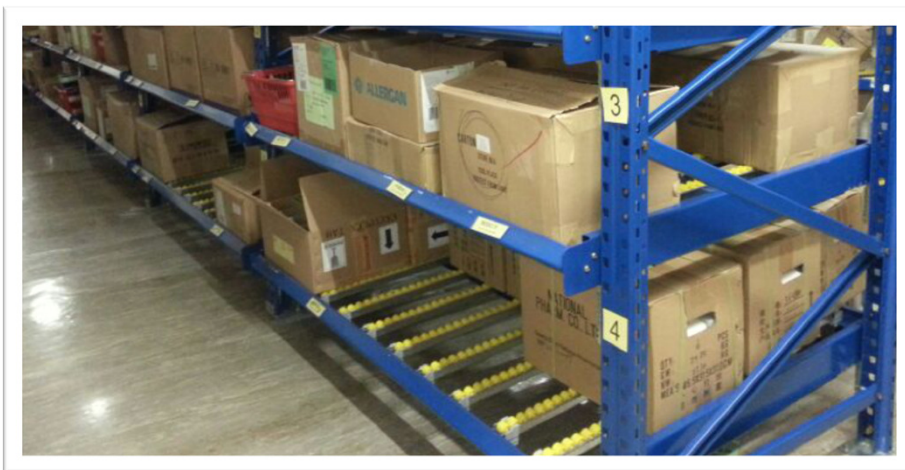
Ship to Loc. QE0-FB-G-MAIN



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



# Storage space & facilities

Conclusion : Plenty of room for improvement in our stores

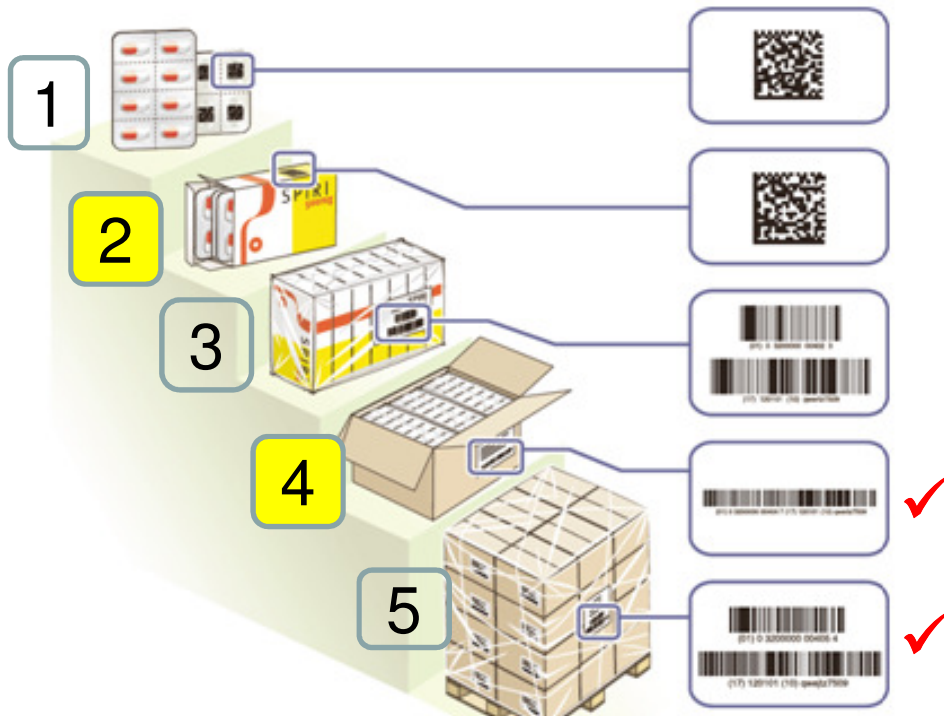




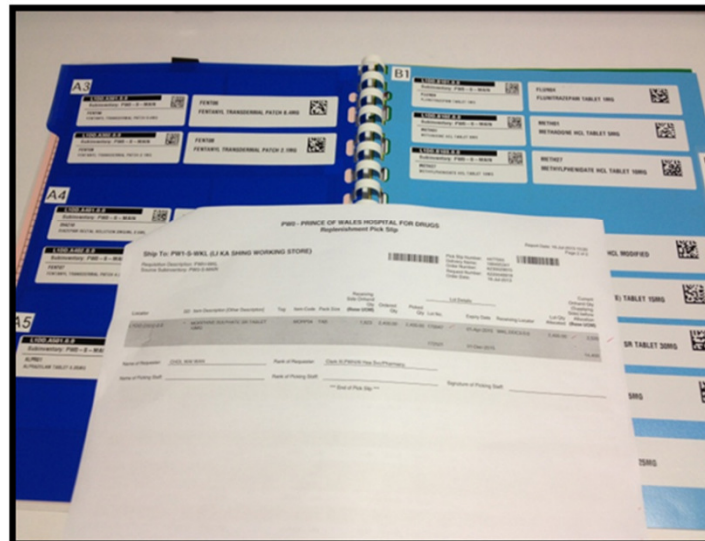
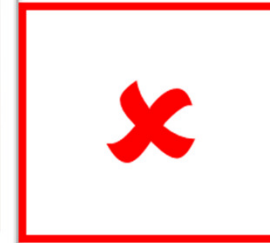
# Vendor & Product readiness

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



# Way Forward

**Patient & Medication Safety**



**Visibility**



**Traceability**



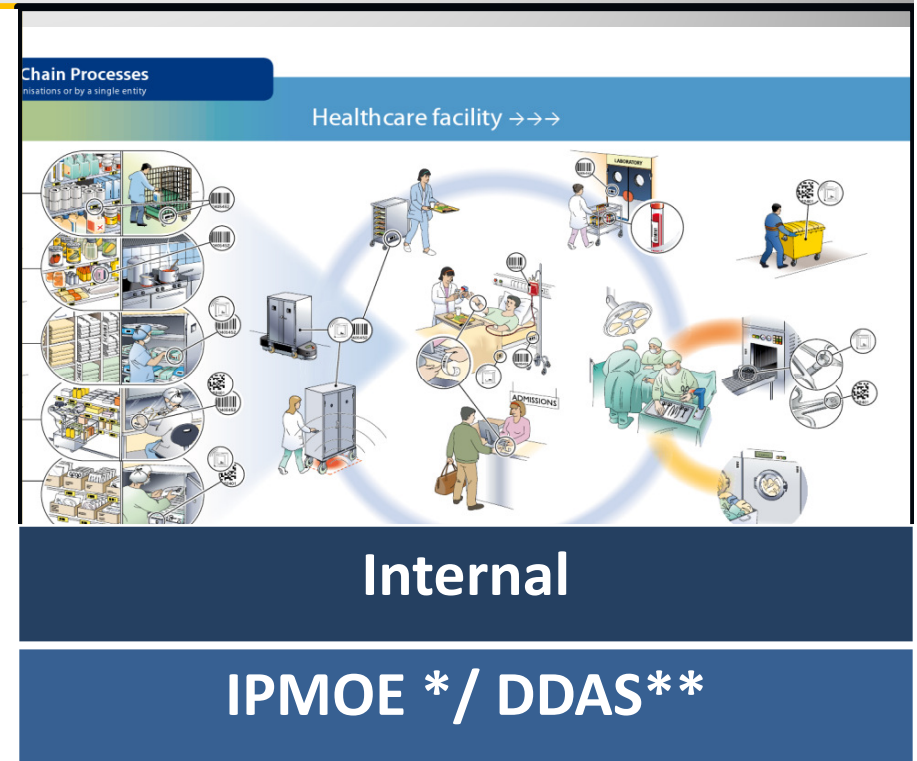
where we want to go  
via the SCM Project





# Way Forward

## The Supply Chain Modernisation on Pharmaceutical Products

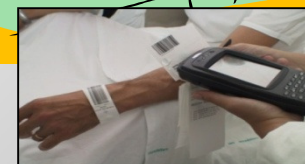
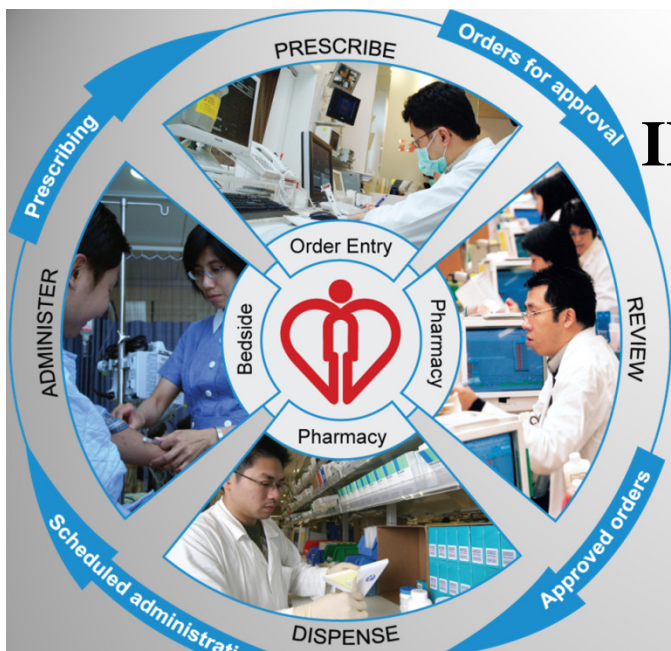


\*IPMOE = In-patient Medication Order Entry

\*\*DDAS= Drug Distribution and Administration System

# Track and Trace to the point of care

## IPMOE \*/ DDAS\*\*



Doctors

pharmacy

Nurses

PHS IPMOE Enquiry Report File Maintenance System Configuration CD04 Help

Save Profile Vet Verify Suspend Pending Urgent

陳文文 Chan, Man Man  
DOB: 18-Dec-1970 HOSP: A123456(7) MED: A2(7) HRID: 11234567 Weight: 62.3 kg Height: 160.1 cm BSA: 1.85 m2

PHS Spec: MEDA PHS Ward: A2 Patient Cat: M1 Other Doc: Pregnancy Contraindication Checking

| Drug   | Dosage      | Frequency | Duration | Total Qty Adj./ Issue Qty |
|--|-------------|-----------|----------|---------------------------|
| 1 Paracetamol - PAINADOL tablet<br>According to pain scale                     | 500 mg      | qid       |          | 8 tablet(s)               |
| W PARAO1 - Paracetamol Tablet 500mg<br>Qty 13.00                               | 1 tablet(s) | qid       |          | 8 TAB                     |
| Phenylephrine - injection<br>IV bolus  | 100 mg      | q8h       |          | 100mg                     |
| PHEN14 - Phenylephrine Injection 50mg/ml 5ml<br>Today 13.00                    | 100mg       | q8h       |          | 100mg                     |
| 3 Enoxaparin Sodium - prefilled syringe<br>SC bolus                            | 40 mg       | q24h      |          | 40mg                      |
| ENOX02 - Enoxaparin Sodium Prefilled Syringe<br>40mg/0.4ml                     | 40mg        | q24h      |          | 40mg                      |
| 4 Gentamicin - injection<br>IV intermittent infusion<br>in 100mL NS over 30min | 240 mg      | q24h      |          | 240mg                     |
| GENT02 - Gentamicin Injection 40mg/ml 2ml<br>16/6/2011 10:00                   | 240mg       | q24h      |          | 240mg                     |

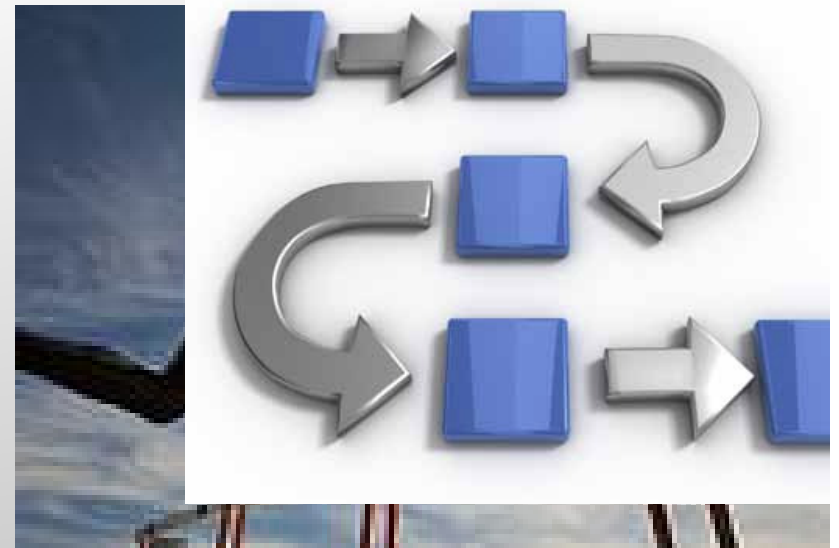
- Electronic prescribing by clinicians
- Vetting & dispensing with workflow reengineering at Pharmacies
- Drug administration by nurses using BCMA

**What do you see ?**





# The Journey is long & tough



**Insanity :**

**Continuing to believe that if we insist and persist , we  
can make the difference,  
some day ....**

**- S C Chiang**

**scchiang@ha.org.hk  
tel: 852-39121638**

# The GS1HK Business Casebooks 2010, 2011, 2012, 2013

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

The image shows the cover and two internal pages of the 2010 Business Casebook. The cover features the GS1 logo and the title 'BUSINESS CASEBOOK 2010' with a focus on 'Efficiency', 'Quality', and 'Safety'. The internal pages include a photograph of a pharmacy and a detailed text layout in both English and Chinese, with a prominent blue arrow pointing to the text 'Increase supply chain visibility'.

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

The image displays the cover and content pages of the 2012 Business Casebook. The cover features a network diagram with nodes for 'SAFETY', 'QUALITY', and 'EFFICIENCY' and the title 'BUSINESS CASEBOOK 2012' with the subtitle 'Champion Business Success Through Value Creation'. The content pages include a photograph of hospital staff and a detailed text layout in both English and Chinese, with a prominent blue arrow pointing to the text 'Increase supply chain visibility'.

## Hospital Authority Hong Kong 香港醫院管理局

Successful Implementation in Pharmaceutical Supply Chain  
Modernization Project  
成功推行醫療藥物供應鏈現代化計劃

## HA SCM project included in the GS1HK Business Casebook in 2013

The image shows the cover and content pages of the 2011 Business Casebook. The cover features the GS1 logo and the title 'BUSINESS CASEBOOK 2011' with a focus on 'Efficiency', 'Quality', and 'Safety'. The content pages include a photograph of a family and a detailed text layout in both English and Chinese, with a prominent blue arrow pointing to the text 'Increase supply chain visibility'.

The image is a graphic illustration for the 2013 casebook. It features a large red pill bottle filled with red capsules, a barcode, and various medical icons such as a heart, a stethoscope, and a pill. The background is white with colorful accents.