



The impact using GS1 standards: The Greek Army Medical Supplies Centre and the Army's healthcare supply chain

Thursday November 10 2016



Welcome and thank you for attending!



- Welcome to our November 2016 webinar. Thank you to our guest speaker – **Sotiris Tsiafos-Tsiaras**, Pharmacist, Logistics Manager, Greek Army Medical Supplies Centre
- Some housekeeping for today:
 - All attendees will be on mute
 - If you have questions during the presentation, please type them into the questions area and these will be monitored then answered at the end of the call
- After the webinar:
 - Within a week, the recording will be posted to: http://www.gs1.org/healthcare/hpac_webinars
 - All previous webinars are also posted to this location, so please feel free to use this resource and share the link

The GS1 Healthcare Provider Advisory Council (HPAC)



Thought leaders and early adopters of GS1 Healthcare Standards from the global clinical provider environment. Their final goal is to improve patient safety, cost efficiency and staff productivity through implementation of GS1 standards.

A forum for sharing and discussion

Identification of projects and case studies

A source of expertise and advice

- About the practical realities of implementation of GS1 Standards in the care giving environment in regards to the impact on clinical care and patient interaction
- That support the adoption of GS1 Standards in healthcare providers and retail pharmacies
- For publication, presentation and sharing
- To those involved in GS1 standards development, the wider Healthcare stakeholder community and senior executives/decision-makers to gain their buy-in and support for implementation of GS1 Standards



HPAC Activities



Webinars

- Monthly webinars open to all stakeholders interested in learning about GS1 standards implementation in the care giving environment.
- http://www.gs1.org/healthcare/hpac_webinars

Awards

- Twice per annum
- Provider Best Case Study Award
- Provider Recognition Award
- The prize is travel / accommodation to attend the next GS1 Healthcare conference
- <http://www.gs1.org/healthcare/hpac>

GS1 Healthcare also holds two global conferences per annum. Next conference will be in Berlin from April 4-6 2017. There will be significant Healthcare Provider participation on the agenda.

Agenda



- **Who we are, what we do.**
 - A few words -and data- about Greek Army's Medical Supplies Centre.
- **Former situation.**
 - The challenges and issues we had to solve
- **The solution.**
 - What we did and how we did it
- **Outcomes.**
 - Are we any better now ?
- **Next steps.**
 - And now what ?
- **Learnings and recommendations**

About Greek Army's Medical Supplies Centre



- Starting point of Greek Army's healthcare supply chain
- Distributes pharmaceuticals, medical devices, minor equipment, medical instruments
- Production of 35 different pharmaceuticals of general use in various forms (tablets, capsules, liquids, ointments)
- Supports all army units, both medical and non-medical and also personnel deployed abroad
- Readiness for distributing humanitarian aid if needed



About Greek Army's Medical Supplies Centre

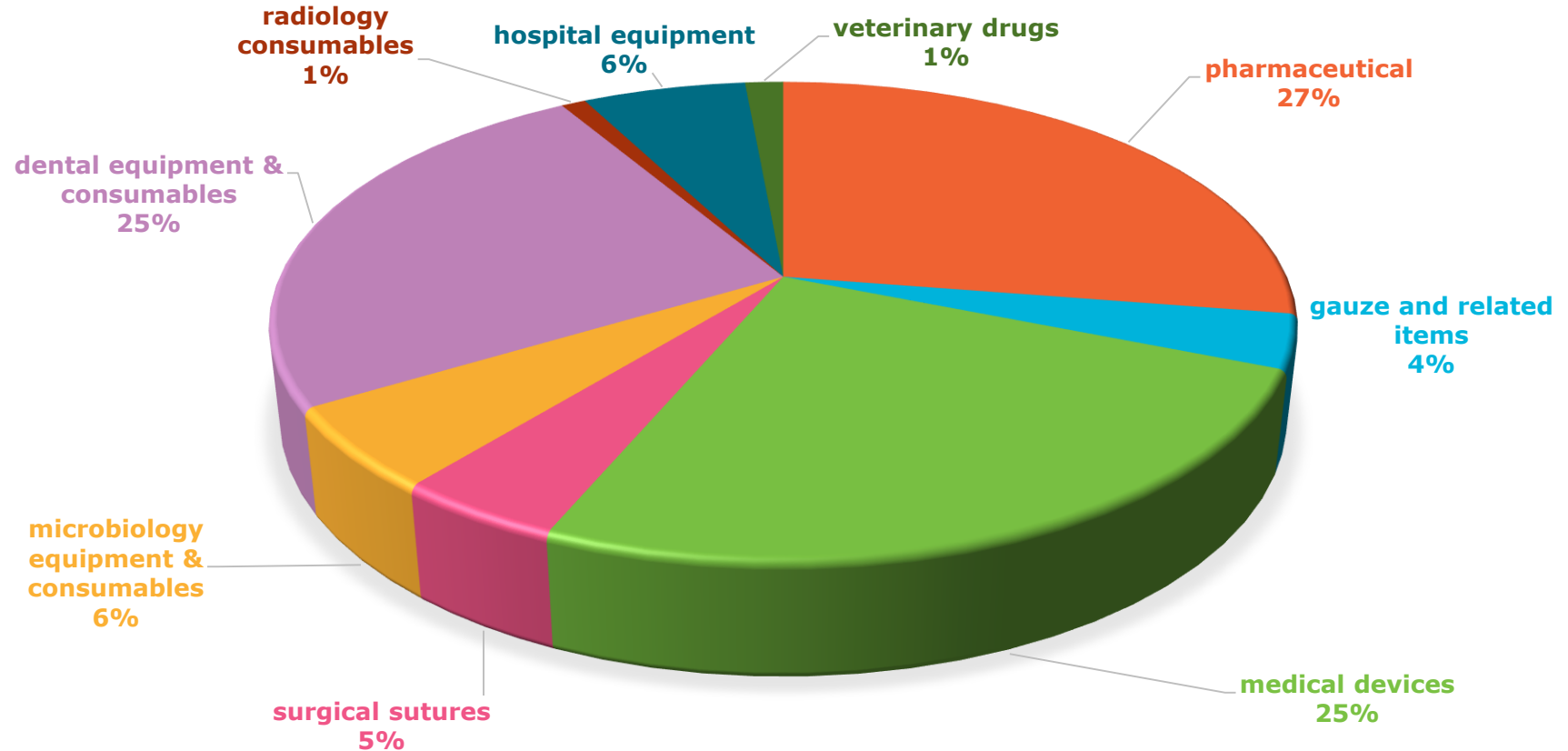


- During 2015:
 - More than 2.000.000 items and
 - more than 1.500 unique SKUs where distributed
 - Over 2.5 million euro mean stock value
 - Nearly 80 different suppliers
- A nation-wide network of 11 regional warehouses and 3 major military hospitals
- 35-40 non-medical units as direct “clients”

About Greek Army's Medical Supplies Centre



Items distributed during 2015





Former Situation

- Own proprietary, closed codification scheme (Greek Army's National Stock Number)
- Non-standard description of items
- No relation between our own Stock Numbers and supplier's codes (GTIN or other)
- Almost impossible to clearly identify specialized items (e.g surgical instruments) without a National Stock Number
- Often the same Stock Number for different items !



Former Situation

- Operations supported by a custom-built ERP system but with no warehouse automation support.
- LOT numbers and expiry dates are manually registered in the ERP
- All movements are tracked at the LOT level, but manually
- Manual processes (goods receipt, stock movement, orders fulfillment) based on printed lists that had to be checked twice.
- The exact location of an item/LOT not recorded in the ERP



Former Situation

- Difficulty to locate certain items, especially the slow-movers
- Lengthy order fulfillment times.
- “Bad” data in the ERP due to errors in the manual registration of LOTs and expiry/production dates
- Errors in the preparation of orders
- Product obsolescence and consequently capital loss
- Inability to know for sure where a certain item/LOT has been delivered

Challenges



- Clearly and unambiguously identify each stock item using a global codification system
- Ability to collect item data using automated methods
- Less –or even zero- errors in orders fulfilment
- Quicker and more efficient warehouse operations
- Know exactly where each item/LOT is inside the warehouse
- Know exactly where each item/LOT has been delivered
- Better collaboration with our suppliers/clients in recalls (fast and accurate)



The GS1 system of standards is the system of choice:

- Global Trade Item Number (GTIN) allows us to unambiguously identify items.
- Ability to issue own GTINs for our pharmaceutical products and items not already codified by the suppliers/producers
- Crucial product information (LOT, exp date) can be incorporated in a barcode following each item as it moves through our warehouse
- An open system of standards, no –huge- costs to adopt, no need to maintain our own codification system
- A robust framework for standardizing our business, covering 100% of our needs

Solution



First steps:

- Decide which GS1 standards should be used
- Define the range of the initial implementation (maybe a pilot first? which items?)
- Contact with GS1 Association Greece to know more technical details about the GS1 system of standards
- Engage a software vendor to implement a Warehouse Management System (WMS) that would operate along with our ERP
- Review our workflows and procedures according to the new rules

Solution



What codes did we use ?

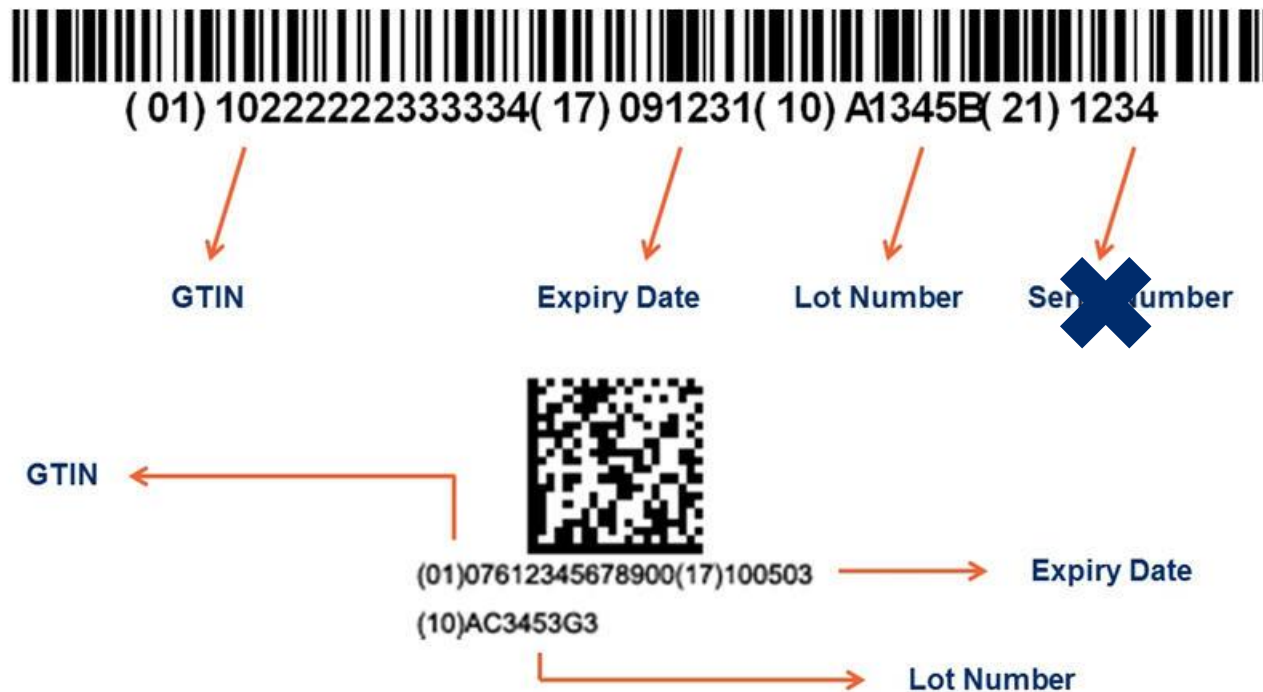
- Pharmaceuticals: National Stock Number (NTIN) already on the box (safety label)– barcoded. Also GTIN, if exists.
- Own production pharmaceuticals: GTIN for use inside the Greek Army supply chain.
- Medical devices: GTIN of item if exists. Own GTIN for non-codified items (as with pharmaceuticals).
- **We had to relate our existing codes with the GTINs because our clients still use the army's codification system.**

Solution



Main types of barcodes used:

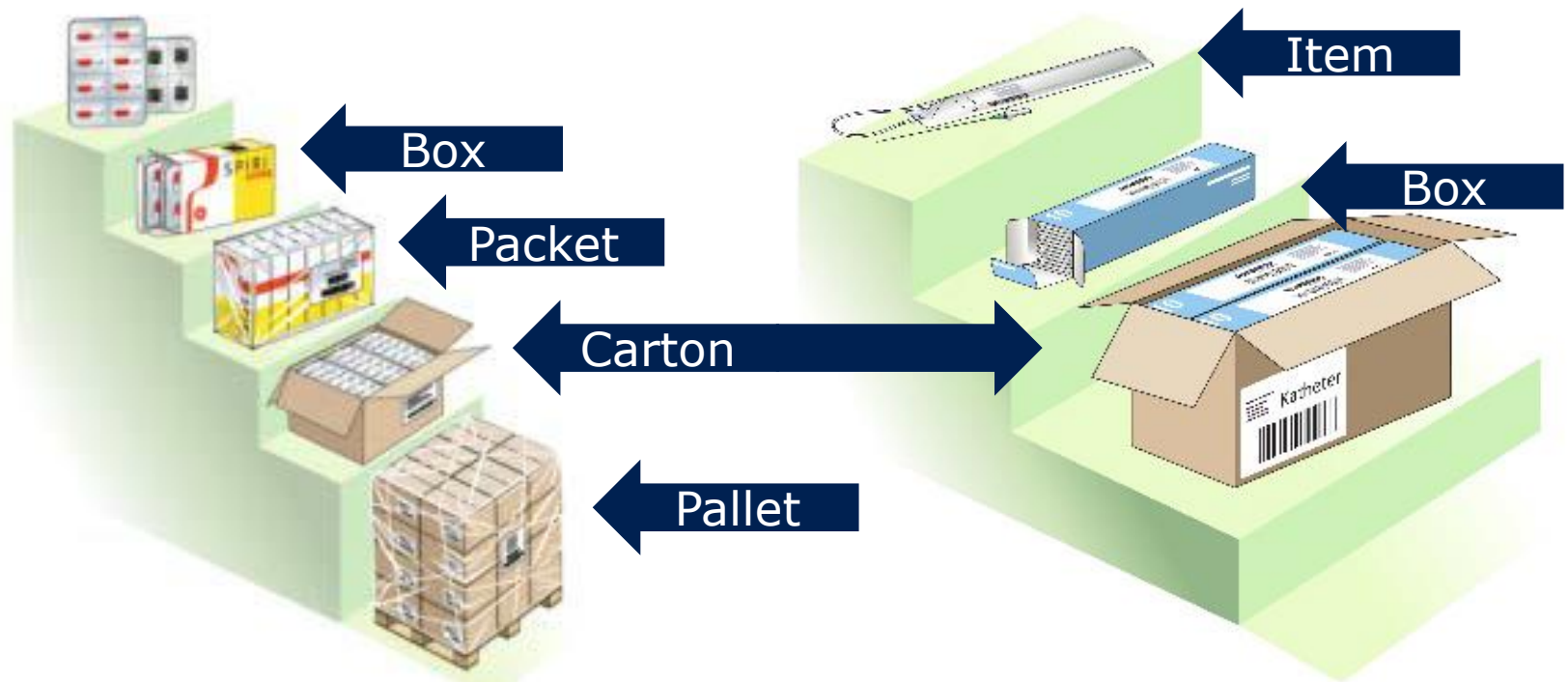
GS1-128 and GS1 Datamatrix®



Solution



Assigning a **different GTIN at each packaging level** makes our job quicker, easier and more accurate.
No need to scan each item separately.



Solution



Solution



- Detailed mapping of the warehouse.
- Unique ID for each shelf (location) printed on a barcode label
- Detailed review of our organization's workflows and procedures according to the new rules
- Mandatory use of handheld terminals in all warehouse operations



Solution



- Item barcode
- LOT barcode and
- Location barcode

are **always scanned at each movement** (goods receipt, movement between shelves, order preparation),
verifying:

- the right PRODUCT
- the right LOT
- from the right LOCATION

Information is captured and registered in the WMS database **quickly and accurately**

Solution



- Products can be placed anywhere; no standard shelf for each one. Location is registered in the WMS → **flexibility**
- Warehouse personnel are guided to the exact location of each item inside the warehouse → **speed** in order picking.
- The WMS software alerts the users where an expired or quarantined item/LOT is scanned → **Safety** for our clients
- All warehouse operations are now standardized and more **user-independent**

Outcomes



- No more “bad” data registered in the WMS/ERP
- Fewer errors in order fulfilment
- Faster operations (and no need for reworks)
- Accuracy and **clear view of our stock**
- Easier for the personnel -even the less experienced
- Alerts ensure that expired or recalled items will never leave the warehouse
- Accurate LOT tracking allows us to know where exactly an item was delivered

Outcomes



Picking list AFTER

441 ARYI
ΑΠΟΤΕΛΕΣΜΑΤΑ

ΜΟΝΑΔΑ : 220800540
ΕΙΔΟΣ ΧΟΡ : ΕΠΙΧΕΙΡΗΣΙΑΚΗ
ΧΡΟΝΟΛΟΓΙΑ : ΑΙΤΗΣΗ ΚΟΡΜΗΣΗΣ ΤΑΡΤΙΝ

ΑΙΤΗΣΗ : 18842
ΑΙΤΙΟΛΟΓΙΑ : ΑΙΤΗΣΗ ΚΟΡΜΗΣΗΣ ΤΑΡΤΙΝ

ΧΡΟΝΟΛΟΓΙΑ : 25/02/2016
ΕΙΔΟΣ : 1 / 4

ΑΠ. ΟΧΜ. ΕΡΕΥΡΗΜΑΤΑ

| ΑΠ. ΟΧΜ. ΕΡΕΥΡΗΜΑΤΑ | ΑΙΤ. ΠΟΣΟΤ. | ΠΡΟΤ. ΠΟΣΟΤ. | ΚΟΡΜΗΣΗ | ΥΠΟΛ. Υ/ΑΙΤΑΡ. | ΥΠΟΛ. ΒΕΒΗΛ |
|--|-------------|--------------|---------|----------------|-------------|
| 2. 3000082 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 17,0 | 0,0 | ✓ | 17,0 | ✓ |
| 3. 3000089 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 6,0 | 6,0 | ✓ | 109,0 | ✓ |
| 4. 3000121 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ 1.5m x 7cm | 5,0 | 0,0 | ✓ | 4,0 | ✓ |
| 5. 3000125 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ 2.000,0 | 2.000,0 | 0,0 | ✓ | 43.340,0 | ✓ |
| 6. 3000143 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 25,0 | 17,0 | ✓ | 2.380,0 | ✓ |
| 7. 3000149 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 17,0 | 0,0 | ✓ | 1.200,0 | ✓ |
| 8. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 450,0 | 0,0 | ✓ | 2.830,0 | ✓ |
| 9. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 2.400,0 | 2.400,0 | ✓ | 51.785,0 | ✓ |
| 10. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 1.800,0 | 0,0 | ✓ | 77.210,0 | ✓ |
| 11. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 800,0 | 0,0 | ✓ | 116.870,0 | ✓ |
| 12. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 1.800,0 | 0,0 | ✓ | 28.219,0 | ✓ |
| 13. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 1.800,0 | 0,0 | ✓ | 28.219,0 | ✓ |
| 14. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 800,0 | 0,0 | ✓ | 50.850,0 | ✓ |
| 15. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 4.000,0 | 0,0 | ✓ | 97.300,0 | ✓ |
| 16. 3000151 ΑΡΑΓΑΤΟΣ ΣΠΟΝΔΟΜΕΤΡΙΚΟΙ ΚΑΥΣΤΗΡΕΣ | 1.000,0 | 0,0 | ✓ | 50.200,0 | ✓ |

4103470 2400 ✓ 4008681706

Picking list BEFORE

441 ARYI
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ΜΟΝΑΔΑ : 220800540
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|--|-------------|--------------|---------|----------------|-------------|
| 1. 3000795 ΒΕΛΟΝΑ ΟΡΘΟΓΩΝΙΑΙΑΣ ΠΑΡΑΝΕΤΗΣΗΣ 180 | 400,0 | 0,0 | ✓ | 30.740,0 | ✓ |
| 2. 3000798 ΒΕΛΟΝΑ ΟΡΘΟΓΩΝΙΑΙΑΣ ΠΑΡΑΝΕΤΗΣΗΣ 200 | 400,0 | 0,0 | ✓ | 30.200,0 | ✓ |
| 3. 3000799 ΒΕΛΟΝΑ ΟΡΘΟΓΩΝΙΑΙΑΣ ΠΑΡΑΝΕΤΗΣΗΣ 210 | 300,0 | 0,0 | ✓ | 27.235,0 | ✓ |
| 4. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 2.000,0 | 2.000,0 | ✓ | 26.847,0 | ✓ |
| 5. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 2.000,0 | 2.000,0 | ✓ | 1.414.400,0 | ✓ |
| 6. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 500,0 | 0,0 | ✓ | 28.847,0 | ✓ |
| 7. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 4.000,0 | 0,0 | ✓ | 97.300,0 | ✓ |
| 8. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 1.000,0 | 0,0 | ✓ | 50.200,0 | ✓ |
| 9. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 1.000,0 | 0,0 | ✓ | 50.200,0 | ✓ |
| 10. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 3.000,0 | 0,0 | ✓ | 97.300,0 | ✓ |
| 11. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 100,0 | 0,0 | ✓ | 7.445,0 | ✓ |
| 12. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 300,0 | 292,0 | ✓ | 2.474,0 | ✓ |
| 13. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 100,0 | 0,0 | ✓ | 1.400,0 | ✓ |
| 14. 3000158 ΠΑΝΤΙΑ ΑΝΤΙΣΤΗΝΤΕΣ ΚΑΥΣΤΗΡΕΣ | 2.000,0 | 0,0 | ✓ | 15.000,0 | ✓ |

Improvements



During the first year of operation:

- Stock accuracy raised to **96%** for fast-moving items, more than 10% increase
- Reduction in error rate from **10** to **3%**
- Reduction in order fulfilment time approximately **25** to **30%**
- Productivity: more than **20h** gained each month
- Faster recall response
- Full traceability of items/LOTs inside the warehouse



Next Steps

- Same system already implemented at two major regional warehouses (since May 2016). More to follow.
- EDI implementation for:
 - Master item data exchange
 - Automated order processing
 - Invoicing & despatch advices
- Pilot implementation in a regional military hospital pharmacy is on the way
- Issue of a technical instruction for medical devices according to the GS1 standards
- Implementation of GS1 standards in our pharmaceuticals production line



Learnings & Recommendations

- The implementation of standards is not a turn-key solution. Is a very live process that evolves day by day.
- There will be resistance by the people to change their way of work.
- Users should be engaged at an early stage in order to overcome their “fear of the unknown”. Their training and support are of paramount importance.
- Engagement of the IT department is crucial, but don’t let them have the last word. The real users of the system should be on the front line: Pharmacists, nurses, physicians, etc.
- Large multi-national companies fully comply with GS1 standards. Smaller, local vendors/suppliers need guidance.



Learnings & Recommendations

- Identify the challenges and describe in detail the operations where standards need to be implemented.
- Build a strong, well-documented case.
- Gain the trust and support of your higher management. At the end, they will approve the funding (and money is always the question).
- Fully –and truly- support the engaged personnel to overcome their fears.
- Measure outcomes/performance (KPIs !)
- Engage your suppliers, especially the smaller ones
- Build – try – correct - repeat



Don't hesitate, just do it !





Thank you !

Contact Information



Sotiris Tsiafos - Tsiaras

Lt Col. (Pharm)

Logistics Manager

Greek Army Medical supplies Centre

174 Pireos str.

177 78 Tavros

Athens, Greece

T +30 210 3461494

M +30 693 2913526

E s.v.tsiafos-tsiaras@army.gr || s.tsiaras@gmail.com