

SOFTWARE TOOL DEVELOPMENT FOR THE ASSISTANCE OF HOSPITAL PHARMACISTS IN MEDICINES' SHORTAGES MANAGEMENT

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• What was done?

A new software module in Hospital Information System (HIS) for monitoring medicines' shortages (MSs) was conceived by hospital pharmacists (HPs), and it was designed, developed and integrated to the ICT system. This module helps HPs easily track which medicines were totally or partially substituted due to insufficient quantities and gives additional information (such as residual quantity of a medicine on prescription date, on inspection date, pending orders, known shortage) needed for managing MSs. In this tool, MSs and relevant information, such as causes, measures to re-stock and shortage's impact, can be entered, centrally managed and regularly reported.

• Why was it done?

MSs are a frequent problem to our hospital. In a study carried out in 2018 (presented in EAHP Congress in Barcelona 2019), we investigated reported shortages during one year and found that 56% of cases of unsatisfied wards' requests were due to failure of pharmacy's procedures to restore availability. In 70% of these cases, time to re-stock was more than 4 days and strong involvement of HPs in following up and taking measures was required. The purpose of this tool is to bring together all relevant information of shortages aiming to improve hospital pharmacy's response as well as following-up MSs for further investigation or research.

• How was it done?

Implementation of the module in ICT system was made in zero cost by ICT service provider*, following technical specifications designed by HPs. Final product was multi-checked by HPs during development and all technical problems have been resolved accordingly.

* ORCO Organization & Computing SA

ΥΠΟΥΡΓΕΙΟ ΥΓΕΙΑΣ
7η ΥΠΕ ΚΡΗΤΗΣ
ΓΝ ΧΑΝΙΩΝ ΑΓ. ΓΕΩΡΓΙΟΣ

List of medicines partially or totally changed in prescriptions in distribution phase
Περίοδος: 01/02/2020 - 07/02/2020

Παραστατικό: 1170 ΓΕΝΙΚΟ ΣΥΝΤΑΓΟΛΟΓΙΟ

Date	Prescription Code	Int. Code	Medicine name	ATC	MM	Requested quantity	Υπόλ. Αποθ. 02/02/2020	Υπόλ. Αποθ. 10/02/2020	Εκκρ. Παραγγ.	Ημέρ. Τελ. Καταχ. Έλλειψης	Shortage	
02/02/2020	ΕΠΑ 4	570	ALOPERIDIN DECANOAS(OILY) INJ 150MG / 3ML BTX1AMP	N05AD01	AMP	3	0	0	0	17/10/2019	<input checked="" type="checkbox"/>	
02/02/2020	ΕΠΑ 4	2816	PULVO-47 AER.TOP (10811 UC+2.23MG/G Φ FLX148G	D06AX04	FL	6	0	0	0	150	<input type="checkbox"/>	
02/02/2020	ΕΠΑ 4	1976	STELMINA								<input checked="" type="checkbox"/>	
03/02/2020	ΟΓΚ 8	4664	SODIUM C								<input checked="" type="checkbox"/>	
03/02/2020	BNE 17	784	EPANUTIN								<input type="checkbox"/>	
03/02/2020	BNE 17	230274	ESCITALO								<input checked="" type="checkbox"/>	
03/02/2020	BNE 17	218109	XARELTO F								<input type="checkbox"/>	
03/02/2020	ΒΠ 21	202116	DIOVAN 40								<input type="checkbox"/>	
03/02/2020	ΒΠ 21	195790	LOBIVON								<input type="checkbox"/>	
03/02/2020	ΒΠ 21	12245	XEFO (RAP								<input checked="" type="checkbox"/>	
03/02/2020	ΚΑΡ 21	202116	DIOVAN 40								<input type="checkbox"/>	
03/02/2020	ΚΑΡ 21	261559	NOREZOR								<input type="checkbox"/>	
03/02/2020	ΚΑΡ 21	218109	XARELTO F								<input type="checkbox"/>	
03/02/2020	ΤΕΠ 17	676	FUCIDIN II								<input checked="" type="checkbox"/>	
03/02/2020	ΤΕΠ 17	12245	XEFO (RAP								<input checked="" type="checkbox"/>	
03/02/2020	MTN 9	9089	BACTROB								<input checked="" type="checkbox"/>	
03/02/2020	MTN 9	676	FUCIDIN II								<input checked="" type="checkbox"/>	
03/02/2020	MTN 9	39559	KAYEXALA								<input checked="" type="checkbox"/>	
03/02/2020	MTN 9	36513	MUCOTHIC								<input checked="" type="checkbox"/>	
03/02/2020	MTN 9	5691	NIPODUR								<input checked="" type="checkbox"/>	
03/02/2020	MTN 9	2816	PULVO-47 AER.TOP (10811 UC+2.23MG/G Φ FLX148G	D06AX04	FL	10	0	0	0	150	<input type="checkbox"/>	
03/02/2020	ΕΞΙ 7	676	FUCIDIN IMP.GAUZE 30MG FAZEΣ 10X(10CMX10CM)	D09AA02	SACH	100	0	0	0	120	27/01/2020	<input checked="" type="checkbox"/>
03/02/2020	ΕΞΙ 7	12245	XEFO (RAPID) F.C.TAB 8MG/TAB Φ BTX30(BLIST3X10)	M01AC05	BT	8	0	0	20	0	10/01/2020	<input checked="" type="checkbox"/>

Κατάσταση Παραγγελιών

Order number	Ημέρ. Παραγγ.	Open	MAH Code	Επωνυμία	Remarks
332	01/02/2020		6217	BGR ΦΑΡΜΑΚΕΥΤΙΚΑ ΠΡΟΪΓΜΑΤΑ	ΠΡΟΜΗΘΕΙΑ ΦΑΡΜΑΚΩΝ

• What has been achieved?

- ✓ Quick intervention of HPs to restore medicines availability is feasible
- ✓ We can now have precise and ease follow up, with less human resources required
- ✓ MSs are collected, registered and easily utilized to draw conclusions
- ✓ HPs' interventions to deal with MSs are easier to evaluate

Κεντρική Διαχείριση Ελλείψεων Φαρμάκων

Retrieve New entry Delete Save

Medicine: 39559 KAYEXALATE PD.ORA.SUS. BT X 454G

Reason of Shortage: Αδυναμία του Προμηθευτή

Taken measures: Δράσεις για Αποκατάσταση

Impact Assessment: Μεσαία

Generic:

Date Shortage reported: 00/00/0000

Remarks:

Little, Medium, Big

- Medicine's Withdrawal
- Manufacturing/Importing problems
- Delayed HP's response to stock replacement
- None
- Measures to stock replacement
- Seeking alternative treatment

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List of medicines in confirmed shortage
Περίοδος: 01/02/2020 - 10/02/2020

Int.Code	Medicine name	ATC	Date of delete/restore	Date of re-availability	Reason of Shortage	Taken measures	Impact Assessment
7300	ADDAMEL N INJ SO INF Φ BTX20AMPX10ML	B05XA31	07/02/2020 12:01:36 (Διαγρ.)	10/02/2020	Αδυναμία Διαδικασιών	Καμία	Μεσαία
202116	DIOVAN 40MG FC.TAB BTX14TAB	C09CA03	03/02/2020 12:41:27 (Διαγρ.)	06/02/2020	Αδυναμία Διαδικασιών	Καμία	Μικρή
261226	DULOXETINE MYLAN GR CAP 30MG/CAP BTX28 ΚΑΨΑΚΙΑ ΞΕ BLISTER	N06AX21	06/02/2020 10:58:32 (Διαγρ.)		Αδυναμία Διαδικασιών	Καμία	Μικρή
238199	EPLERIUUM F.C.TAB 50MG/TAB BTX30 (ΞΕ BLISTERS PVC/AL) (ΞΕ BLISTERS PVC/AL)	C03DA04	04/02/2020 12:50:42 (Διαγρ.)		Αδυναμία Διαδικασιών	Καμία	Μικρή
230274	ESCITALOPRAM/ACTAVIS F.C.TAB 10MG/TAB BT X 28	N06AB10	03/02/2020 11:07:38 (Διαγρ.)		Αδυναμία Διαδικασιών	Καμία	Μικρή
39559	KAYEXALATE PD.ORA.SUS BT X 454G	V03AE01	03/02/2020 11:15:47 (Διαγρ.)		Αδυναμία του Προμηθευτή	Δράσεις για Αποκατάσταση	Μεσαία
187	OTRIVIN NAS SOL 0.1% Φ FLX10ML	R01AA07	06/02/2020 11:35:10 (Διαγρ.)	07/02/2020	Αδυναμία Διαδικασιών	Καμία	Μικρή
14986	PROPOFOL LIPURO 1% 100ML INJ EM.IN BOTTLEX100ML	N01AX10	07/02/2020 07:58:03 (Διαγρ.)	07/02/2020	Αδυναμία του Προμηθευτή	Δράσεις για Αποκατάσταση	Μικρή
3921	RADACEF DR.PD.INJ 1G/VIAL Φ BTX1VIAL+1AMPX3ML SOL (IM/IV)	J01DC11	05/02/2020 07:16:54 (Διαγρ.)	06/02/2020	Αδυναμία Διαδικασιών	Καμία	Μικρή
246042	SOMOFKABIVEN PERIPHERAL INJ EM INF 4BAGSX1448 ML	B05BA10	06/02/2020 07:57:04 (Αποκατ/σ)	10/02/2020	Αδυναμία Διαδικασιών	Καμία	Μικρή
1024	SOLU-CORTEF PS INJ SOL. 500MG/VIAL BTX1ACT-O-VIAL(4ML)	H02AB09	03/02/2020 13:21:08 (Αποκατ/σ)	04/02/2020	Αδυναμία του Προμηθευτή	Δράσεις για Αποκατάσταση	Μικρή
218109	XARELTO F.C.TAB 15 MG / TAB BTX28 TAB ΞΕ BLISTERS (PP/ALU)	B01AF01	03/02/2020 11:07:38 (Διαγρ.)	06/02/2020	Αδυναμία Διαδικασιών	Καμία	Μικρή
267494	KYLALANAL GEL EXT US 5% W/W BT X 1 TUB X 30 G	D06AX12	06/02/2020 11:35:10 (Αποκατ/σ)	07/02/2020	Αδυναμία Διαδικασιών	Καμία	Μικρή
267494	KYLALANAL GEL EXT US 5% W/W BT X 1 TUB X 30 G	D06AX12	06/02/2020 11:36:11 (Αποκατ/σ)	07/02/2020	Αδυναμία Διαδικασιών	Καμία	Μικρή
267494	KYLALANAL GEL EXT US 5% W/W BT X 1 TUB X 30 G	D06AX12	06/02/2020 13:27:01 (Αποκατ/σ)	07/02/2020	Αδυναμία Διαδικασιών	Καμία	Μικρή
251020	ZAVICEFTA PD.C.S.INF (2+0.5)G/VIAL BTX10FLX20ML	J01DD52	07/02/2020 14:14:08 (Διαγρ.)	10/02/2020	Αδυναμία Διαδικασιών	Καμία	Μεσαία

• What next?

ICT tools' development is very important in facilitating hospital pharmacy's practice, especially when human resources are restricted. These software modules can be easily incorporated in every HIS. Pharmacists are competent and should have central role in designing such tools. We are planning to evaluate our new MSs management procedure; in a long run, incorporating in this tool a risk assessment algorithm will be an asset.



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