Distribution of standardized absolute differences before and after the matching.

CP-144

FIRSTLINE TRIPLET OR DOUBLET CHEMOTHERAPY FOR HER2 NEGATIVE ADVANCED OESOPHAGOGASTRIC CANCER: AN ANALYSIS FROM A COMMUNITY PRACTICE REGISTRY

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Objective

To evaluate the efficacy and tolerance of triplets versus doublets by analysing a national gastric cancer registry.

Materials and methods

Patients with Advanced Gastric Cancer (AGC) treated with polychemotherapy, excluding trastuzumab, were included from 2008 to 2016. The effect of triplets versus doublets was compared using three methods: Cox proportional hazards regression, propensity score matching (PSM) and coarsened exact matching (CEM).

Results and Discussion

970 PATIENTS

569 DOUBLETS

401 TRIPLETS

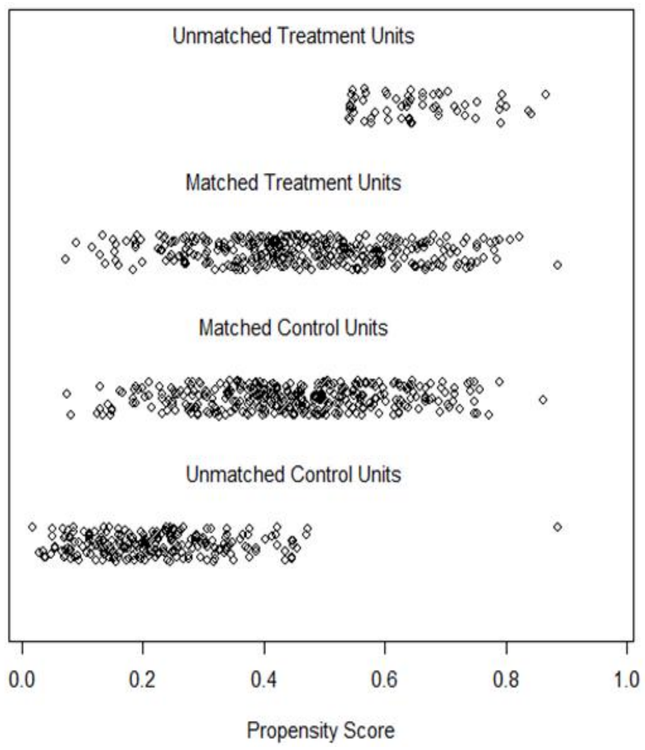
In the Cox model, the use of triplets was associated with better overall survival (OS), hazard ratio (HR) 0.84 (95% CI 0.72–0.98), p=0.035, after adjusting for confounding factors.

After PSM, the sample contained 340 pairs. A significant increase in OS [11.14 months (95% CI 9.60–12.68) versus 9.60 months (95% CI 8.44–10.75)] was seen in favour of triplets.
HR 0.77 (95% CI 0.65–0.92), stratified log rank test, adjusted for percentile groups of the PSM, p=0.004.

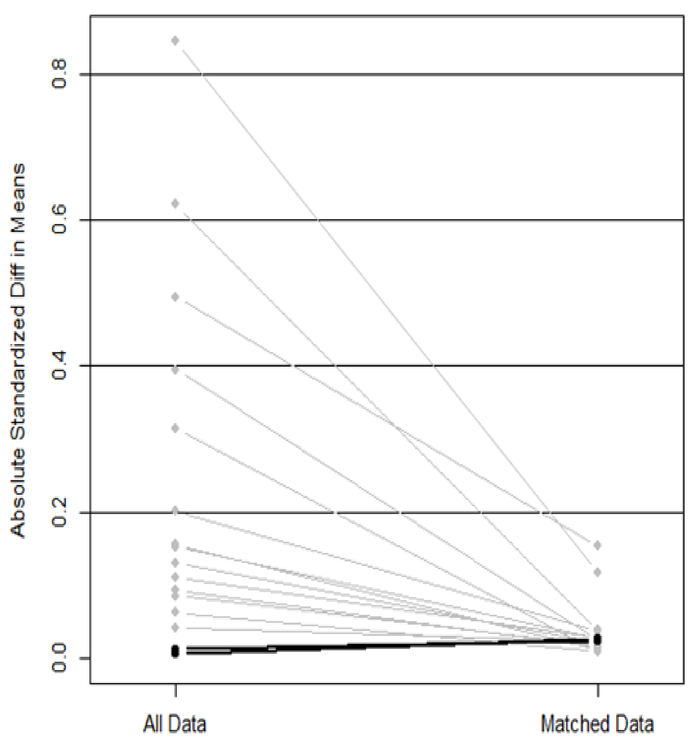
The effect appeared to be comparable for anthracycline based triplets (HR 0.78 (95% CI 0.64–0.94)) or docetaxel based triplets (HR 0.78 (95% CI 0.60–1.009)). The trend was similar after applying the CEM algorithm, with a HR of 0.78 (95% CI 0.63–0.97), p=0.03.

Triplet therapy was viable and relative dose intensities exceeded 85%, except for cisplatin in DCX.
Triplets had more severe toxicity overall, especially haematological, hepatic and mucosal adverse events.

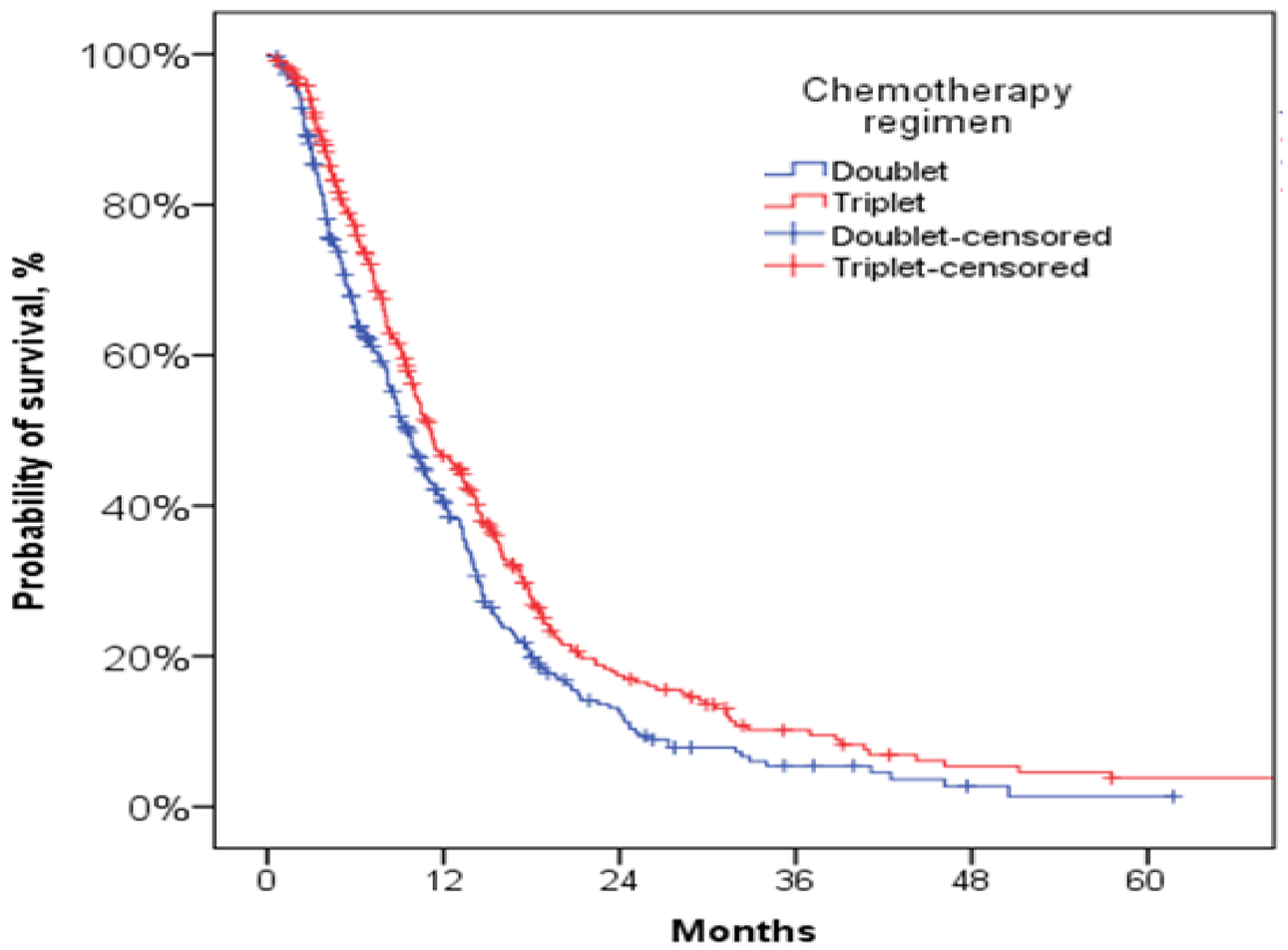
Propensity score distribution before and after matching.



Distribution of standardized absolute differences before and after the matching.



Kaplan-Meier curves of OS after Propensity score matching



Conclusions

Triplet therapies are feasible in daily practice and are associated with a discreet benefit in efficacy at the expense of a moderate increase in toxicity.

Aknowledgments and/or References

The authors wish to thank all Investigators of the Agamenon Study.

22nd Congress of the EAHP Cannes 2017 March 22-24

CP-155

PREVALENCE AND EFFECTIVINESS OF ANTIRETROVIRAL TREATMENT COMBINATIONS USED IN HIV PATIENTS NOT COLLECTED IN GUIDELINES

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BACKGROUND

Most studies in HIV-infected patients focus on effectiveness of antiretroviral therapies (ART) combinations included in clinical Guidelines. However few studies analyze the combinations not listed in these Guidelines

OBJECTIVES

To analyze the prevalence and effectiveness of ART combinations not included in HIV Guidelines

METHODS

A retrospective observational study was carried out between January 2014 and December 2015. All patients with ART followed for at least 1 year by the Outpatient Pharmacy were included.

ART were classified in two groups:

- ✓ All combinations listed in the Spanish National AIDS Plan Recommended Guidelines (GESIDA) for initial antiretroviral therapy 2014-2015.
- ✓ Combinations not listed in GESIDA Guidelines.

To determine the effectiveness of the treatment, plasma viral load (VL) and CD4 + lymphocytes were reviewed. Two analyses according to different criteria were conducted:

- ✓ Criteria reflected in Spanish GESIDA Guidelines: VL<50 copies/ml (undetectable) and CD4 repeatedly greater than 300 cells/µL, at least twice consecutive.
- ✓ Criteria reflected in American DHHS Guidelines: VL<200 copies/ml (to prevent errors by blip) and CD4 repeatedly greater than 300 cells/µL, at least twice consecutive.

Data were analysed with SPSS 20.0 software.

RESULTS

245 patients were analyzed. 68,6% (168) were male. The median age was 48,5 years (IIC: 43,5 to 53).

Patients	ART combinations included in guidelines	ART combinations not included in guidelines	
Total (n,%)	224 (91,4%)	21 (8,6%)	
VL <50 copies/ml and CD4>300 cells/µL	110 (49,1%)	9 (42,9%)	OR = 1.287; 95% CI OR: 0521-3174; p = 0.584
VL<200 copies/ml and CD4>300 cells / µL	174 (77,7%)	14 (66,7%)	OR = 1.740; 95% CI OR: 0.666- 4.545 p = 0.253

ETR + DRV/r
DRV/r + DOL ó RAL
DRV/r + RAL ó DOL + MVC
TDF ó ABC +DRV/r + RAL
3TC + ETR + DRV/r + RAL
FTC/TDF + DRV/r + RAL ó DOL
ABC/3TC + TDF + RAL

CONCLUSION

- ✓ This study shows that few patients receive ART combinations not collected in clinical practice Guidelines.
- ✓ The high power of current ART could explain the similar effectiveness between listed and not listed therapies in the Guidelines.

NO CONFLICT OF INTEREST

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Use of a naloxone trigger tool and multidisciplinary causality assessment to identify and confirm opioid related adverse drug events

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Introduction

- An adverse drug event (ADE) is a potentially harmful and unintended outcome of medicines use
- Naloxone is used to reverse opioid toxicity so is a useful indicator of potential opioid related ADEs
- In the UK, ADE trigger tools have been advocated for detecting ADEs associated with high risk drugs including opioids

- We aimed to measure the sensitivity of naloxone as a 'trigger' to detect opioid related ADEs in adult inpatients in a large acute teaching hospital by applying a causality assessment tool to multidisciplinary retrospective case note review.

Objectives

- To confirm opioid related ADEs identified from the administration of naloxone and calculate the positive predictive value (PPV) of the naloxone trigger
- To identify common drug/dose regimens associated with opioid related ADEs

Method

- Medication Safety pharmacists at King's College Hospital are sent a daily 'trigger report' listing adult inpatients who have been prescribed and administered trigger drugs on our electronic prescribing and medicines administration system (EPMA)
- Case note review forms are completed for each adult patient administered naloxone as listed on the 'trigger reports'
- Case note review forms completed between October 2014-September 2015 were included in the study. Naloxone doses administered in Accident & Emergency, paediatrics and critical care units were excluded
- Each form was reviewed by a multidisciplinary panel who applied the World Health Organisation Uppsala Monitoring Centre Causality Assessment System (WHO-UMC CAS)[1] to confirm opioid ADEs
- Confirmed ADEs were then assigned a severity of harm rating according to the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) Index[2]
- Positive predictive value for naloxone as a trigger event for opioid ADEs was calculated

- Ethics approval was not required for the study

Results 1

Table 1. Results of multidisciplinary case note review

Number of naloxone trigger events				**142**
Number of events excluded				**17**
Number of events categorised using the WHO-UMC scale				**125**
Number of unconfirmed ADEs				**34**
	Unlikely	Conditional	Unassessable	
	8	1	25	
Number of confirmed ADEs				**91**
	Certain	Probable	Possible	
	54	13	24	
NCCMERP Index harm rating				**91**
	Category E		Category F	
	90		1	

Results 2

- The Positive Predictive Value (PPV) for naloxone was calculated to be 72.8%
- $PPV\% = \frac{Number\ of\ true\ ADRs\ detected\ by\ naloxone}{number\ of\ true\ ADRs + number\ of\ false\ positive\ ADEs}$

Results 3

- Morphine sulphate accounted for 55/91 (60.4%) of confirmed ADEs
- Commonly associated regimens included IV morphine infusions in cardiac recovery (n=9) and post-operative patient-controlled analgesia following hepatic and orthopaedic surgery (n=25)

Discussion and conclusion

- We effectively used the WHO-UMC CAS tool and a multidisciplinary team approach to reduce subjectivity and guide discussions in confirming ADE causality
- Using the criteria listed within the tool ensured a more robust and consistent approach to confirming ADEs and determining the PPV compared to single reviewer assessment
- 90 out of 91 confirmed ADE cases (98.9%) were categorised as category E, and 1 as Category F. Category E ADEs are defined as ADES that 'may have contributed to or resulted in temporary harm to the patient and required intervention' [2]
- Incomplete documentation in the clinical notes was a limitation
- Although time-consuming our methodology is generalizable and could be utilised in other organisations as a gold standard for confirming opioid ADEs

References

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2. National Coordinating Council for medication Error reporting and Prevention. NCC MERP Index for categorising medication errors. 2001. Available at http://www.nccmerp.org/sites/default/files/indexColor2001-06-12.pdf Accessed 28th November 2016

Conflicts of Interest
None to declare

Abstract DI-024
ATC code N02 - Analgesics

WRITTEN PATIENT INFORMATION: ANALYSING ITS QUALITY

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Background

Health systems promote patient involvement in healthcare decisions. In order to achieve this, patients need information and often this is supplied in written support, so that the readability of the text becomes a quality indicator.

Purpose

To analyze the readability of patient information in hospital treatment provided by the Pharmacy Department and to ensure that information is suitable for patients, regardless of their socio-cultural level.

Material and Methods

All patient information sheets designed by the Pharmacy Service in 2015 to onco-haematological treatments (oral) were analyzed and compared against the same number of oncological information sheets designed by oncological group of Spanish Society of Hospital Pharmacy (GEDEFO). Regarding analysis of readability, two “readability indexes" validated for the Spanish language were used.

Fernández-Huerta	206,84 – [(60 x (syllables/words)) + (words/phrases))].
Flesch-Szigriszt	206,835 – [(62,3 x (syllables/words)) + (words/phrases)]

As for the interpretation of the results, values below 60 are considered as unfit for sanitary material in Fernández-Huerta index, while values below 55 are considered in Flesch-Szigriszt index

Results

A total of 11 onco-haematological treatments information sheets were included and compared with 11 sheets of GEDEFO.

	Fernandez-Huerta	Flesch-Szigriszt		Fernandez-Huerta	Flesch-Szigriszt
Pharmacy Service			GEDEFO		
Abiraterona	54,45	49,13	**Capecitbina**	75	70,1
Afatinib	59,5	55,15	**Etoposido**	67,87	62,72
Axitinib	60,32	57,59	**Gefitinib**	68,6	63,5
Bexaroteno	57,19	52	**Imatinib**	67,2	62,13
Crizotinib	60,21	55,04	**Lapatinib**	69,77	64,7
Dabrafenib	54,88	49,49	**Lenalidomida**	72,15	67,16
Enzalutamida	58,54	53,28	**Nilotinib**	74,07	69,17
Ibrutinib	60,58	55,38	**Sorafenib**	73,51	68,56
Pazopanib	61,28	56,13	**Sunitinib**	71,94	66,96
Regorafenib	61,45	56,36	**Temozolamida**	73,61	68,68
Vandetanib	58,08	52,88	**Vinorelbina**	70,9	65,87

55% do not provide adequate information

All provide adequate information

Conclusions

More than a half of the information sheets do not have an adequate readability index. This leads to trigger a process of improvement in the performance of patient information sheets, in order to achieve adequate readability for patient-focused medical supplies.

DI-060

DI-088

THE SWITCH FROM ORIGINATOR TO BIOSIMILAR GROWTH HORMONE: PATIENTS' EXPERIENCES

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Introduction

- In 2014 our hospital introduced the biosimilar growth hormone (BGH) to all patients due to the large difference in costs between originator and biosimilar growth hormone
- The switch was conducted in cooperation between the departments of Internal Medicine, section endocrinology, Paediatrics and Pharmacy
- Stakeholders (board of our hospital, patient council and the individual patients) were informed about the switch
- We investigated the experiences of patients that use BGH after the switch

Objective
The objective of the conducted study was to investigate the experiences of the patient before, during and after the switch to biosimilar growth hormone (Omnitrope®).

Material and Methods

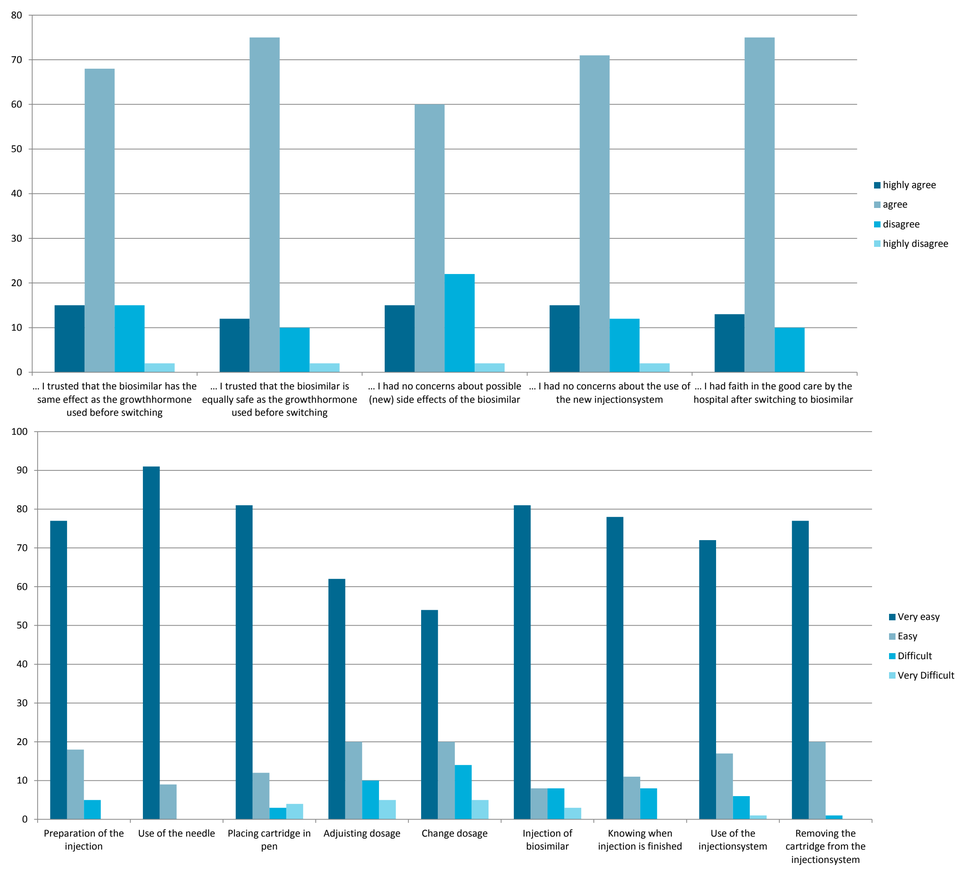
- To get more insights about the patients' experiences a quantitative evaluation was conducted.
- We have designed a questionnaire because this is the first study conducted in this field.
- The questionnaire was designed after discussion with different stakeholders (medical professionals, nurses, pharmacist)
- The questionnaire was sent in April 2016 so patients had over one year of experience in the use of biosimilar growth hormone.
- The questionnaire contained the following topics:
  - Problems before switching to biosimilar
  - Education by the Radboudumc before, during and after switching
  - Efficacy of biosimilar growth hormone
  - Possible adverse effects due to biosimilar growth hormone
  - The use of the new injection system (SurePal®)

- All patients that were switched to biosimilar growth hormone were informed by a letter about this study
- Patients could decide whether or not to participate in the study
- Patients could fill in the questionnaire on paper or online
- Anonymity was guaranteed during the study

Results

- 207 adult patients received the letter to participate in this study and 79 patients (38.1%) completed the questionnaire.
- Responders and non – responders did not differ in age, gender, co-medication, duration of use of growth hormone

- 93% of the patients were satisfied by the counseling that was provided by the medical professionals and nurses
- 95% of the patients indicated that individual training on the new injection system had been conducted
- 98% of the patients was confident in using the new injection system



Discussion and Conclusion

- Patients were satisfied with the switch to biosimilar growth hormone.
- Patients scored the switch with 8 / 10
- Questionnaire was sent > 1 year after switch with possible introduction of bias by remembering
- Good stakeholder management is quintessential
- Financial benefit for our hospital was considerable

Conclusion
Patients were satisfied with the switch to biosimilar growth hormone. There were few side effects and the minor problems that were encountered could be solved. Extensive counseling before switching patents to biosimilar is of great help!

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DI-088
H01 - Pituitary and hypothalamic hormones

Institute for Health Sciences
Radboudumc

Performance Indicators in Hospital Pharmacy: Experience of a Teaching Hospital With a Documentation Tool

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CHU Sainte-Justine
Le centre hospitalier universitaire mère-enfant
Pour l'amour des enfants
Université de Montréal

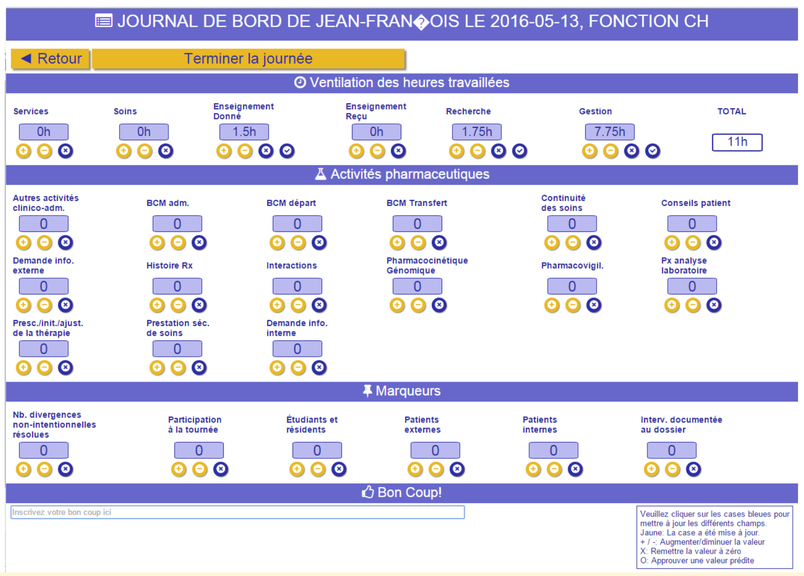
Unité de Recherche en Pratique Pharmaceutique

Background

- Most professional pharmacy associations recognize the importance of documenting pharmaceutical activities.
- Such documentation is usually a hospital-based decision and relies on a local consensus of indicators and tools.
- Pharmacy practice does include the 5 principal axis:
  - ⇒ Pharmaceutical services
  - ⇒ Pharmaceutical care
  - ⇒ Teaching
  - ⇒ Research
  - ⇒ Management

Objective

- To describe the pharmacy indicators collected and used by a teaching hospital



Methods

- This is a descriptive and retrospective study
- A documentation tool is
  - ⇒ Used by pharmacists to collect and describe their workload since 1998
  - ⇒ Available on the hospital intranet
  - ⇒ Completed by each pharmacist at the end of the day
- Data were extracted from the SQL database
  - ⇒ For all 27 indicators
  - ⇒ For 2 fiscal years from April 1st, 2014 until March 31st, 2016
- Only descriptive statistics were performed

Results

Data extracted represent a total of

- 125,520 worked hours
- 253,532 pharmaceutical interventions
  - 22% of interventions were written
- 136,676 patients' follow-up
- 94,865 information requests
  - 72% from other clinicians
  - 28% from external stakeholders
- 5,545 students' days

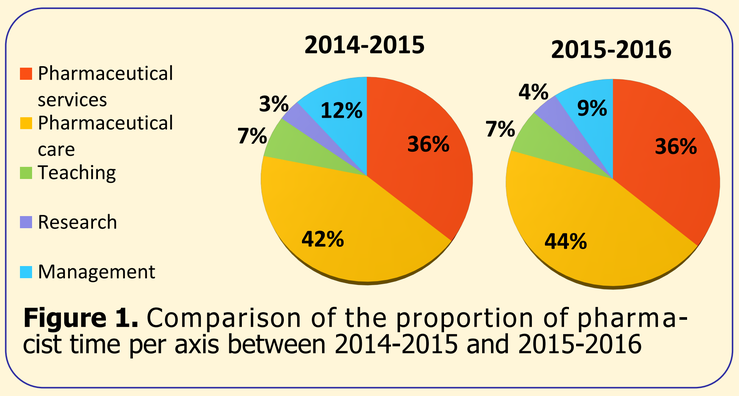


Figure 1. Comparison of the proportion of pharmacist time per axis between 2014-2015 and 2015-2016

Table 1. Comparison of the number of pharmaceutical interventions between 2014-2015 and 2015-2016

Pharmaceutical interventions	2014-2015 N (%)	2015-2016 N (%)	Changes
Drug therapy adjustment	61765 (52.6%)	75710 (55.7%)	+22.6%
Medication reconciliation at admission	7118 (10.2%)	8337 (9.9%)	+17.1%
Continuity of care	10630 (9.0%)	12868 (9.5%)	+21.1%
Patient counseling	7285 (6.2%)	6317 (4.6%)	-13.3%
Medical rounds	4729 (4.0%)	5609 (4.1%)	+18.6%
Other interventions	4795 (4.1%)	5023 (3.7%)	+4.8%
Laboratory orders	3465 (2.9%)	3786 (2.8%)	+9.3%
Medication error management	3630 (3.1%)	3373 (2.5%)	-7.1%
Pharmacovigilance	2771 (2.4%)	3796 (2.8%)	+37%
Pharmacokinetics	2522 (2.1%)	2447 (1.8%)	-3.0%
Medication reconciliation at discharge	2254 (1.9%)	1871 (1.4%)	-17.0%
Drug interactions	1287 (1.1%)	1390 (1.0%)	+8.0%
Medication reconciliation at point of transition of care	351 (0.3%)	334 (0.2%)	-4.8%
Total of interventions	**117,514 (100.0%)**	**136,018 (100.0%)**	**+15.7%**

Table 3. Profile of the average ratios depending on the pharmacists' function

Functions	Intervention/ worked hour	Information/ worked hour	Patient's follow-up/ worked hour	Students' days/1816 worked hours*
Hematology-Oncology	4,54	1,08	1,71	62,45
Information center	0,11	1,32	0,06	137,87
Management	0,62	0,32	0,12	155,51
Medication order review	0,54	0,98	0,04	8,67
Neonatology	5,41	0,97	1,53	37,78
Obstetrics-Gynecology	2,57	0,62	4,18	202,57
Others	0,15	0,16	0,03	51,19
Pediatric Intensive Care	3,90	1,24	0,86	71,16
Pediatrics	1,92	0,47	2,58	145,25
Preparations	0,41	1,46	0,06	102,83
Residents	0,28	0,06	0,41	35,91
Surgery	5,39	0,66	3,98	99,45
Teaching	0,05	0,04	0,02	58,08

* A pharmacist works 1816 hours per year

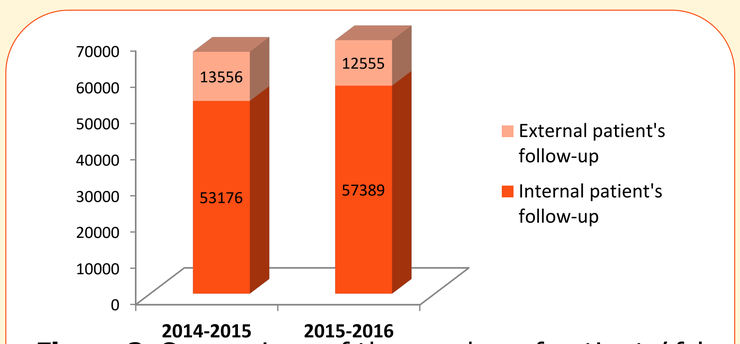


Figure 2. Comparison of the number of patients' follow-up between 2014-2015 and 2015-2016

Table 2. Comparison of different ratios between 2014-2015 and 2015-2016

Ratios	2014-2015	2015-2016	Changes
Ratio Pharmaceutical Care/Services hours	1.19	1.21	+2.2%
Number of patients' follow-up/worked hour	1.13	1.05	-7.5%
Number of information requests/worked hour	0.75	0.76	+1.8%
Number of interventions/worked hour	2.00	2.04	+2.1%
Number of students' days/1816 worked hours	82.56	78.16	-5.3%

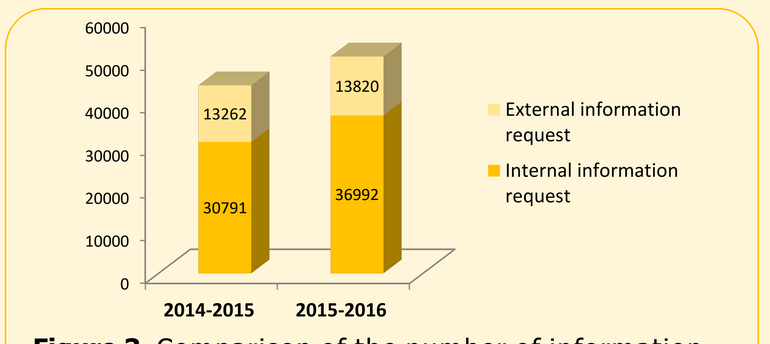


Figure 3. Comparison of the number of information requests between 2014-2015 and 2015-2016

Discussion

- The total number of worked hours increased by 13.3% between 2014-2015 and 2015-2016. Similarly, the total number of information requests increased by 15.3% and the total number of pharmaceutical interventions increased by 15.7%. These increases can be explained by the end of the pharmacist shortage in 2015 and full staffing.
- The limited number of indicators and tool used allow rapid data entry (~ 5 min./day) to provide a workable solution. The web interface allow an autonomous data entry by each pharmacist.
- Data to be collected appear to be sufficient to describe with sufficient details the five axis of pharmacy practice.
- Collected data are used to benchmark current practices between years and teams ; benchmarking with other hospitals is limited as there is no consensus on pharmacy indicators at a national level; data are not used to benchmark
  individuals. Also, data are shared with pharmacists and administrators to support the funding of pharmaceutical care year after year.
- While data entry can be affected by a memory bias if the information is not entered the same day, data collected appear to be relatively stable per individual.

Conclusion

- This study describes the activity of pharmacists within a teaching hospital
- The use of a documentation tool is feasible and useful to support the description and the benchmarking of pharmacists in the healthcare sector.
- Data collected can be used to support the funding of pharmaceutical activities.

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Conflict of interest : None - **Funding** : None
22nd EAHP Congress, Cannes, 22-24 March 2017

Evidences about the roles and the impact of pharmacists: an action plan of interventions to increase pharmacist awareness about these evidences

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Introduction

Pharmacy practice is challenged by governments and authorities considering the costs of pharmaceutical services and available public funding. There is a growing body of evidences about the roles and the impacts of pharmacists. There are a limited number of pharmacists that is aware of the evidences.

Objectives

To describe an action plan of interventions that should increase pharmacists' awareness about evidences on the roles and the impacts of pharmacists.

Methods

This is a descriptive study. A literature search was conducted on Pubmed with the following terms: interventions, professional behavior and evaluation. Only systematic reviews on the effectiveness of interventions to change healthcare professional behavior were included. Based on the literature and using a mind mapping technique, we develop a map of the characteristics of interventions that can change professional behaviors. Using the map, we discussed and identified the potential interventions that could be implemented to increase pharmacists' awareness about evidences on the roles and the impacts of pharmacists. The action plan was discussed between research team members and interventions were selected by consensus.

Results

Four key objectives identified:

- Promote the Impact Pharmacie platform and its weekly blog
- Expose stakeholders and students to scientific literature about pharmacists' roles and impacts
- Allow stakeholders to realize actions from published evidences of pharmacists' roles and impacts

Targeted audiences

- Regulatory authorities
- Universities
- Professional pharmacy meetings
- Community and hospital pharmacists
- Practicing pharmacists

> 60 interventions to be implemented

Seven types of interventions identified :

- *Local opinion leader*
  - Supports from steakholders
- *Educational meetings*
  - Oral Presentations
  - Education, courses
  - Journal club
- *Educational outreach*
  - Information kit used in targeted interventions
- *Printed educational materials*
  - Representation in an event
  - Sensibilisation with blog, articles, videos
- *Reminders*
  - Platform frequent update
  - Weekly blog
- *Evaluation*
  - Continue research
- *Tailored interventions*

Eight key MESSAGES to promote the platform and the blog:

- 2100 articles about pharmacists' roles and impacts
- A hundred themes
- Pharmacists can have positives, neutrals or negatives outcomes
- 8 categories of indicators: mortality (1% of outcomes indicators), morbidity (23%), medication errors (11%), adverse drug effects (4%), costs (6%), adherence(6%), satisfaction (8%) and others
- 6268 descriptives indicators and 4674 outcomes indicators
- 60% articles with positives outcomes
- Articles from USA (47%), Canada (8%), France (6%), Royaume-Uni (5%)
- 50% prospective studies, 35% retrospective studies, 15% cross-sectional studies

Discussion/Conclusion

- Previous research work has confirmed the limited use of theses evidences by pharmacists
- This study describes an action plan of interventions that should increase pharmacists' awareness about evidences on the roles and the impacts of pharmacists.
- While most planned interventions target an initial exposure to the web platform and the blog, the action plan should increase pharmacists' awareness of theses evidences and change their behaviours (e.g. know, search, find, read, use … theses evidences)
- The action plan includes different types of interventions, considering the current literature and the variable impact of theses interventions; the literature support multi-faceted interventions rather than single one
- The current action plan will take place in 2016 and 2017 and should involve pharmacists, pharmacy students and research assistants

European Association of Hospital Pharmacists, Cannes, France, March 22-24th, 2017

Contact: jf.bussieres@ssss.gouv.qc.ca Conflict of interest: None Funding: None

GM-025

Abstract Number: PKP-007/L01 CYTOSTATICS

DPYD SNPs AND DISEASEE FREE SURVIVAL AFTER CAPECITABINE-BASED ADJUVANT TREATMENT

García-González X[1], Pellicer M[1], García MI[1], García-Alfonso P[2], Grávalos C[3], Pachón V[4], Martinez V[5], Martinez-Ortega P[1], Sanjurjo M[1], López-Fernández L[1].

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OBJECTIVES

Background: *DPYD* has a key role in fluoropyrimidines metabolism. The role of its genetic variants in drug efficacy and toxicity has been widely studied, often with conflictive results. More information is needed.

PURPOSE:
To analyse if Single Nucleotide Polymorphisms (SNPs) in DPYD exon regions have an influence in Disease Free Survival (DFS) in colorectal cancer (CRC) patients treated with capecitabine-based adjuvant chemotherapy.

METHODS

STUDY DESIGN:
- Observational, ambispective.
- Multicentical: 4 hospitals.
- N=138.
- Median follow-up time: 30.1 months

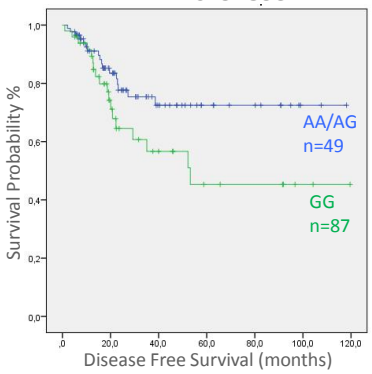
INCLUSION CRITERIA:
- Age ≥18 years.
- Stage II/III CCR.
- Capecitabine-based adjuvant chemotherapy.
- ECOG PS ≤ 2.
- No renal/hepatic damage.

GENOTYPING:
OpenArray™ technology.
7 SNPs in DPYD exon regions:
- rs12119882
- rs1801158
- rs1801159
- rs291592
- rs291593
- rs44221623
- rs6668296

RESULTS

Patient characteristics		
Median age (years)	67	(29-81)
Sex n (%)		
Male	69	(50)
Female	69	(50)
Hospital		
Doce de Octubre	67	(48.6)
Gregorio Marañón	56	(40.6)
La Paz	12	(8.7)
Ramón y Cajal	3	(2.2)
Tumour stage n (%)		
II	40	(28.9)
III	99	(71.1)
Type of cancer n (%)		
Colon	104	(75.4)
Rectum	34	(24.6)
Treatment n (%)		
Capecitabine + oxaliplatine (XELOX regime)	106	(76.8)
Capecitabine monotherapy	32	(23.2)

***DPYD* rs291593**



***DPYD* rs291593**

12-month DFS:
- AA/AG=91.6%
- GG=89.6%

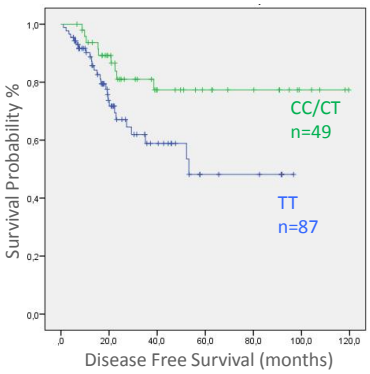
HR=2.15 IC 95%(1.1-4.23)
p=0.026

***DPYD* 1801159**

12-month DFS:
- CC/CT=93.7%
- TT=88.7%

HR=2.16 IC 95%(1-4.67)
p=0.051

***DPYD* rs1801159**



CONCLUSIONS

•Genotyping of exonic variants in *DPYD* could be a successful approach to find new pharmacogenetic predictors of tumour relapse in CRC patients.

•This are preliminary results that need to be validated in bigger cohorts with longer follow-up.

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DOXORUBICIN PLASMA DETERMINATION BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

LI Casamada Ros, B Quintana Vergara, A Sánchez Alcaraz
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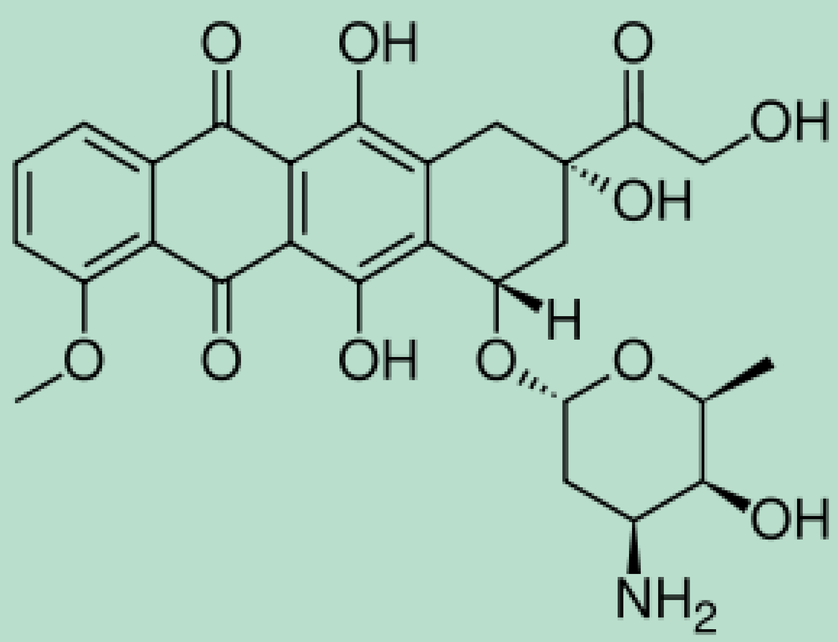
PURPOSE

✧ To assess and validate the chromatographic conditions for determining plasma doxorubicin (DXR). Linearity, accuracy, precision and reproducibility inter- and intra- assay were studied.



MATERIAL AND METHODS

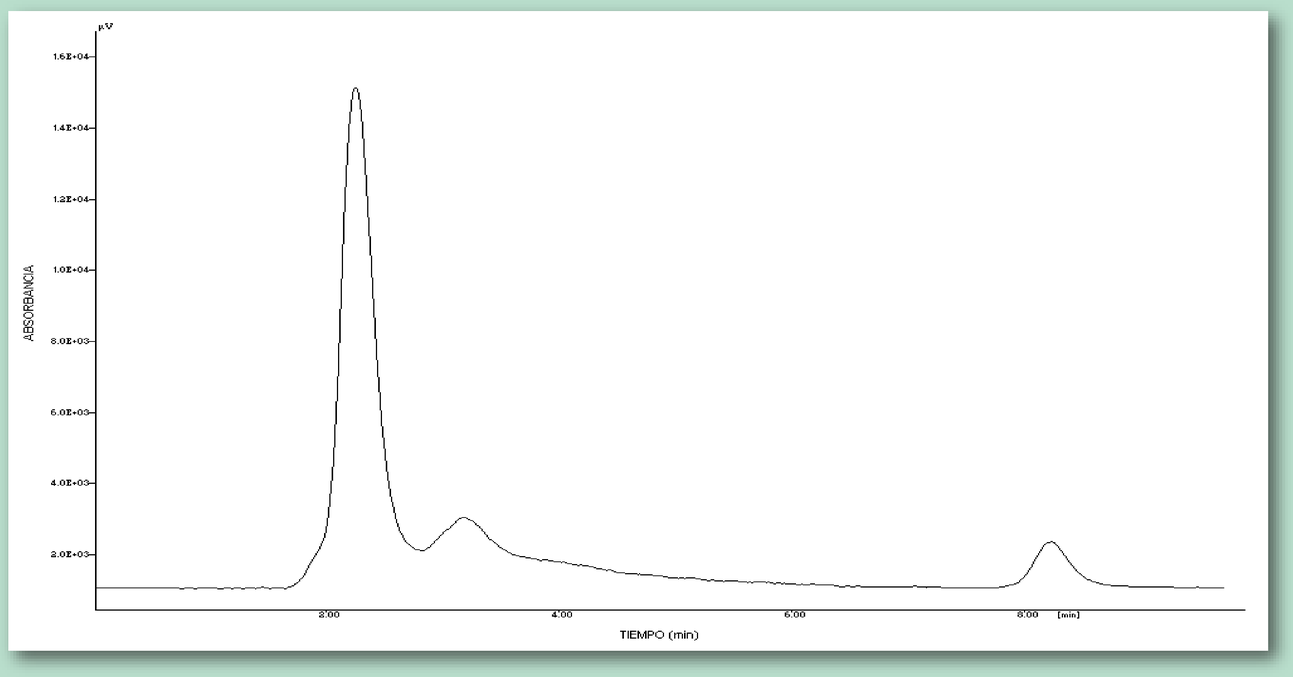
The test products used were daunorubicin (internal standard) and DXR (standard substance). The reagents used were potassium dihydrogen phosphate, acetonitrile, water and isopropanol. Free human plasma drug was provided by the hospital laboratory analysis.

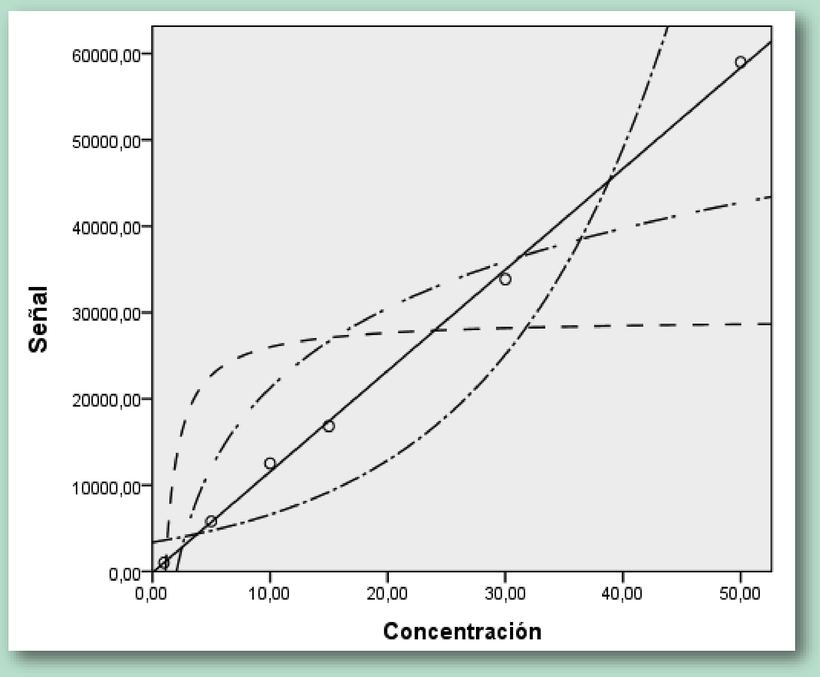
Equipment used in the study: a modular system of high performance liquid chromatography (HPLC) Merck-Hitachi composed of a pump, autoinjector system, fluorescence detector, integrating software and a computer. A centrifuge and a vortex were also used.

The stationary phase used was a 5µm C18 chromatographic column 150 mm × 4 mm, and the selected mobile phase was 0.05 M potassium dihydrogen phosphate (pH=3.55) and acetonitrile 70:30 (v/v). The flow rate chosen was 0.6 mL/min and the wavelengths of excitation and emission were 548 nm and 470 nm.

RESULTS

The equation of the calibration curve (peak area and plasma DXR) was: y=-256,34 + 1231,27 x. The analytical technique had good linearity. With 95% confidence it can be said that the intercept was between 162.4 and 350.3 area/C. With a probability of 99.5% the value obtained and the actual value were not statistically different, therefore the method has the necessary accuracy. The requirements of precision (repeatability and reproducibility) were also met. The coefficients of variation of plasma concentrations did not exceed 10% for either intra or inter studies (repeatability and reproducibility).





CONCLUSION

The chromatographic technique developed to determine plasma DXR is a quick and simple technique that meets all of the requirements of specificity, linearity, accuracy and precision required for validation.

CONCENTRATION ACCURACY ASSESSMENT OF KETAMINE, REMIFENTANIL AND SUFENTANIL SYRINGES PREPARED IN THE PAEDIATRIC SURGERY UNIT

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[1]CHU Lille, Pharmacie, LILLE, France.
[2]Univ. Lille, EA 7365 - GRITA – Groupe de Recherche sur les formes Injectables et les Technologies Associées, LILLE, France.
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N01-Anesthetics

PP-022

Background

In the pediatric surgery unit, low doses of IV analgesic and anaesthetic drug are daily used for anesthesia. Thus, stock solution (SS) syringes are prepared each morning in post anesthesia care units, resulting from a 10-fold dilution of commercial products. SS syringes are then extemporaneously diluted all day long by a factor of 2, 2.5, 5 and 10 to obtain serial dilution (SD) syringes administered in the operating ward.

Purpose

In the frame of the assessment of professional practices, concentrations of ketamine (Ket), remifentanil (Rem) and sufentanil (Suf) were quantified in prepared syringes in order to evaluate the preparation accuracy of the anesthetist staff before injection to children.

Material and methods

Care unit

- Over a one-month period, Ket, Rem and Suf samples were collected from SS and SD syringes

Pharmacy

- Samples were quantified
- Results were expressed by bias (%)

SS and SD syringes

Ketamine | Sufentanil | Remifentanil

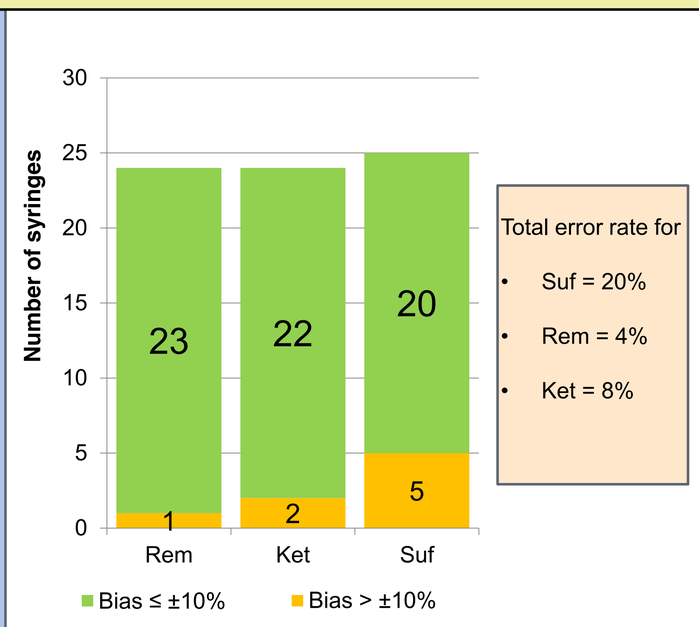
HPLC-UV-DAD method

Acceptance limits : biases of ±10% of theoretical concentration

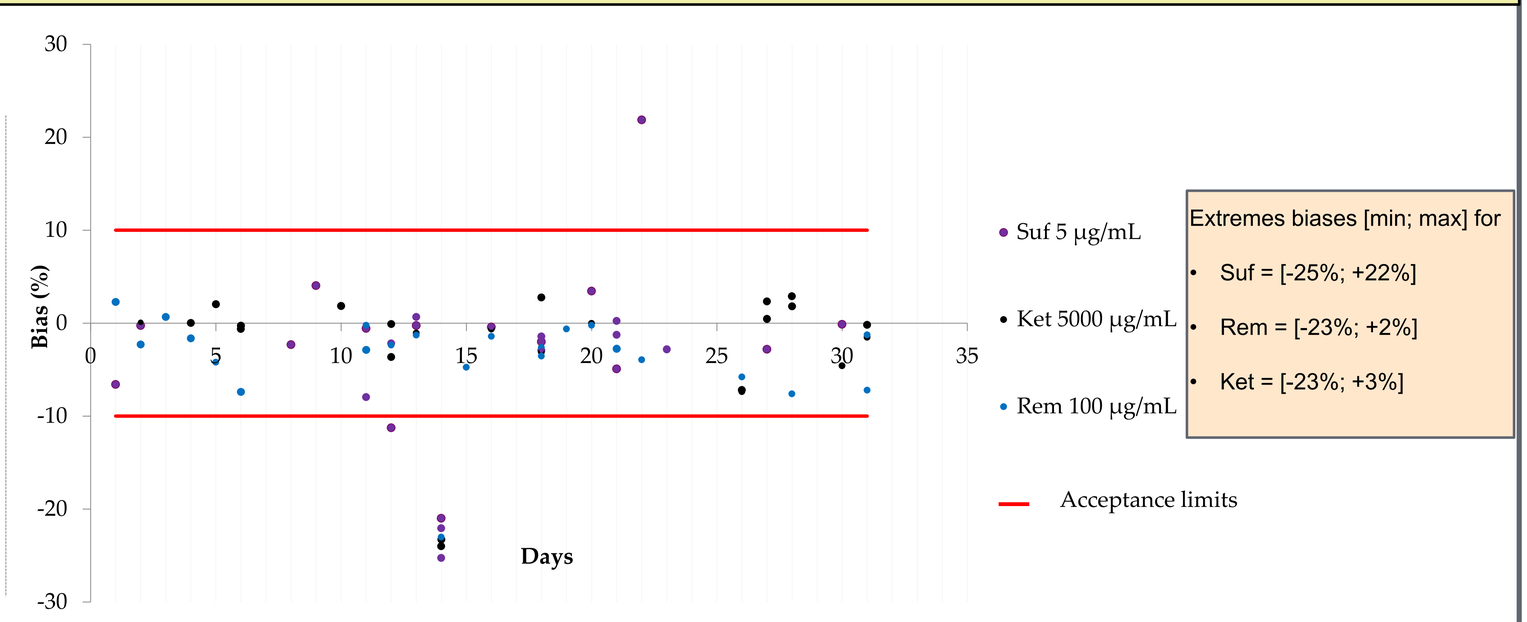
Results

STOCK SOLUTION SYRINGES

73 SS syringes



Total error rate for
- Suf = 20%
- Rem = 4%
- Ket = 8%



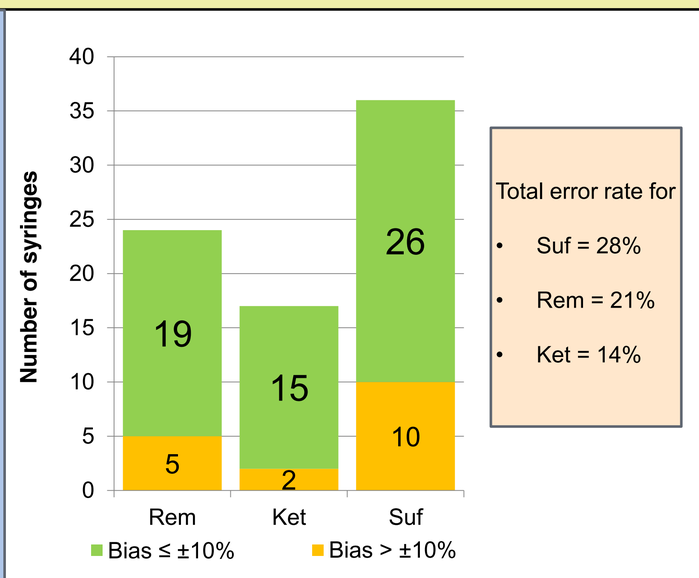
Extremes biases [min; max] for
- Suf = [-25%; +22%]
- Rem = [-23%; +2%]
- Ket = [-23%; +3%]

=> 8/73 syringes were not acceptable (11%)

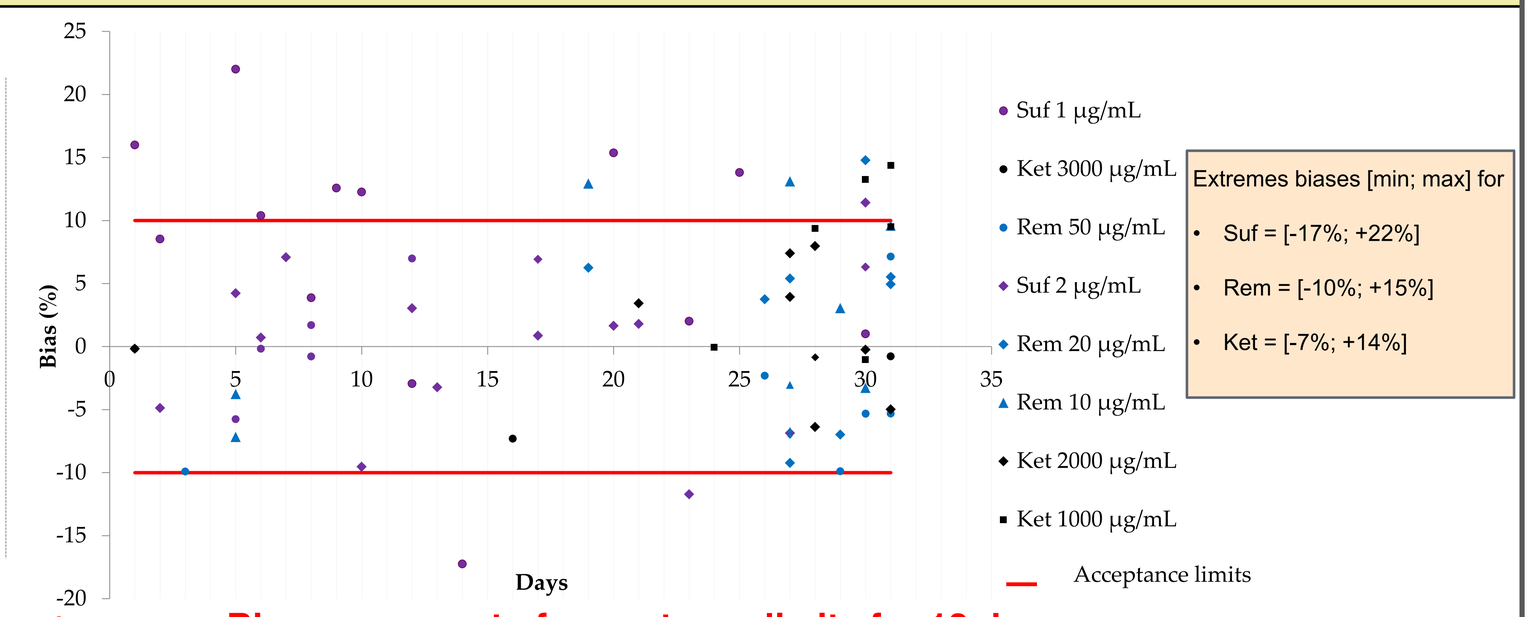
=> Biases were out of acceptance limits for 3 days

SERIAL DILUTION SYRINGES

77 SD syringes



Total error rate for
- Suf = 28%
- Rem = 21%
- Ket = 14%



Extremes biases [min; max] for
- Suf = [-17%; +22%]
- Rem = [-10%; +15%]
- Ket = [-7%; +14%]

=> 17/77 syringes were not acceptable (22%)

=> Biases were out of acceptance limits for 13 days

In total, 150 samples were collected on 31 days and biases were out of acceptance limits for 15 days.

Conclusion

22% syringes administered to children were out of acceptance limits. In order to reduce the occurrence of preparation error in the ward, a preparation procedure has to be defined and its impact will be further assessed.

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HOW TO IMPLEMENT IV ROBOTICS IN GMP ASEPTIC PRODUCTION

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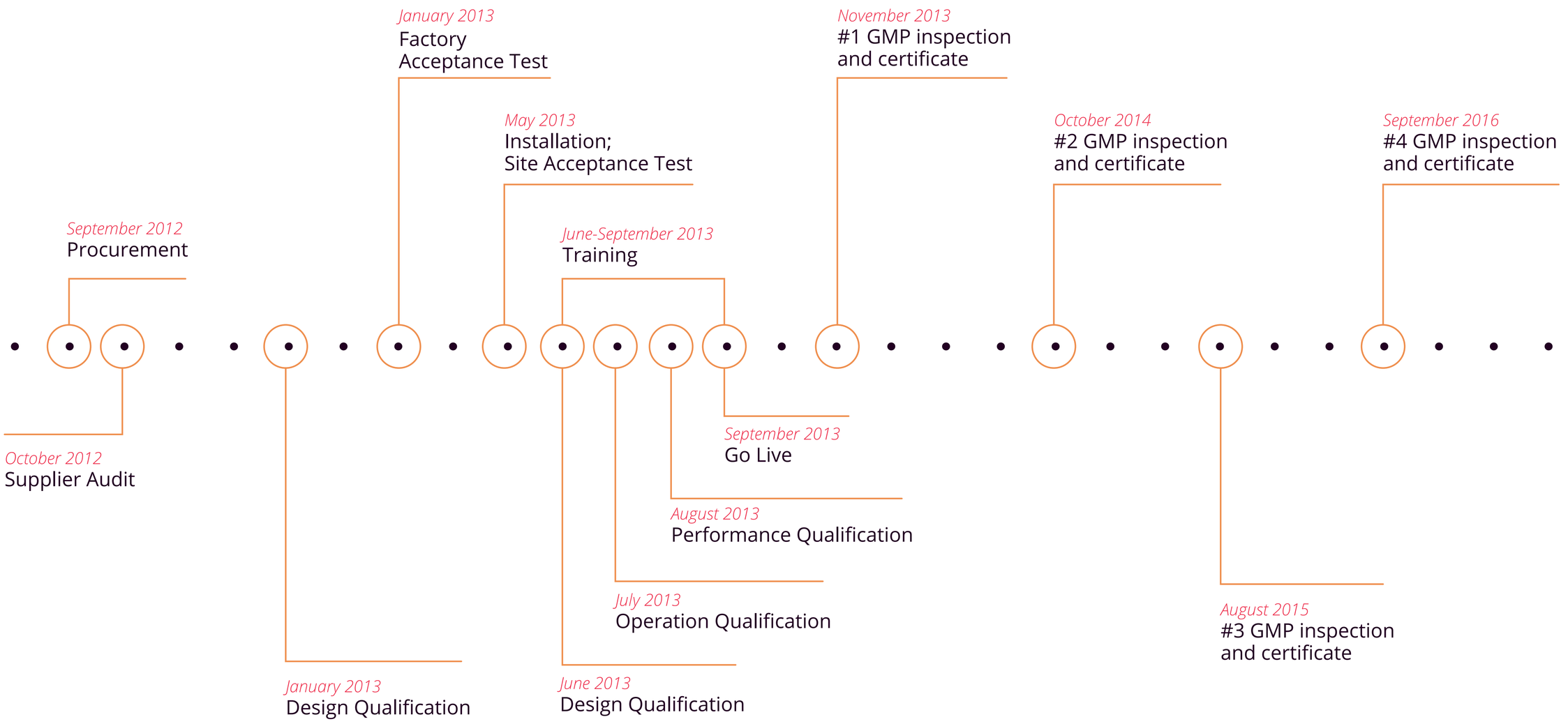
22nd Congress of the EAHP
22-24 March 2017
PP-024

Background and purpose

Denmark is one of the European countries that requires the Good Manufacturing Practices (GMP) certification to hospital pharmacies in order to compound medication.
In 2012 the Capital Region Pharmacy, the largest hospital pharmacy in Denmark, decided to invest in IV robotics to guarantee EU-GMP and GAMP compliance through the highest standards of safety, quality and efficacy in the compounding process.
The go-live of this technology was preceded by a tough qualification aimed at assessing the new compounding process was GMP compliant. The GMP qualification consists of several validation procedures in sequence: Design Qualification, Factory acceptance test, Operational qualification, Installation qualification and Performance qualification.
This poster illustrates a case study on how the technology can help hospital pharmacy to be GMP compliant.

Material and metod

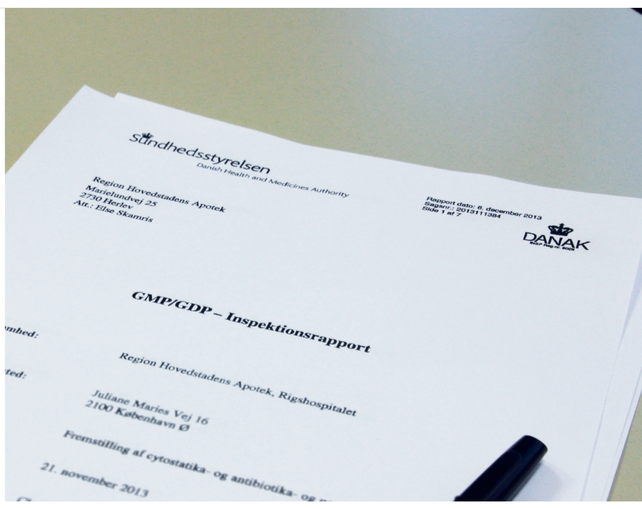
A dedicated multidisciplinary team studied thoroughly the reference documentation: EU Guidelines for Good Manufacturing Practice for Medicinal Products for Human and Veterinary Use. The analysis led to the definition of 89 User Requirements Specification (URS) associated to GMP requirements, on a total of **143 URS** addressed in the tender. The GMP requirements cover several aspects like environmental conditions,equipment design, product safety and efficacy, Documentations, Alarms alerts, User accessibility, training and maintenance, data storage and record. During the tender, the competing systems were challenged on each URS to verify their compliance.




Supplier Audit


Site Acceptance Test


Go Live



GMP inspection and certificate

Results

The system that scored best in the tender evaluation was APOTECAchemo.
It fulfilled **74** of the **89 GMP** requirements from the beginningand the manufacturer developed and validated the additional 15 before the qualification process. In November 2013 the Danish Health and Medicines Authority certified that **APOTECAchemo was totally compliant with the GMP regulations** and authorized the go-live. Since November 2013 **3 additional inspections** have been successfully passed, without any deviation. Moreover, they approved the use of this robotic system in a **class C** cleanroom, differently from the manual compounding that now requires a class B cleanroom.

Conclusion

The installation of an IV compounding robot in full compliance with GMP regulations ensures benefits in terms of the highest level of preparation quality, operator safety, continuous monitoring of environmental condition and reduction in human interventions in controls and reports.

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COMBINING A CLOSED SYSTEM TRANSFER DEVICE AND AN IMPROVED DECONTAMINATION PROCESS TO DECREASE THE CONTAMINATION INSIDE ISOLATORS

PP-038

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EA GRITA website

Background: Despite the use of closed system drug transfer devices (CSTD), a residual contamination by antineoplastic drugs is still retrieved inside isolators[1]. Improving the chemical decontamination process has been proposed to reduce more efficiently this contamination.

Purpose: This study aimed to assess the decontamination efficiency inside isolators of two different decontamination processes associated to a CSTD.

Material and methods

- Prospective and comparative study (3 months) performed in a newly opened compounding unit equipped with 4 isolators (Sieve, Villeurbanne, France)
- Two decontamination strategies tested both using a CSTD (Fig. 1)
- 8 drugs monitored (cyclophosphamide, cytarabine, dacarbazine, doxorubicine, 5FU, gemcitabine, ifosfamide and irinotecan)
- Dosing by UPLC-MS/MS (Xevo TQS, Waters, Guyancourt)

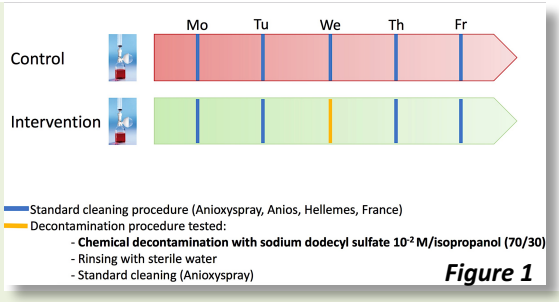

Figure 1

- Daily sampling of 3 surfaces (gloves, inner surface of window, workbench) before and after daily cleaning process
- Main outcome measures:

- Contamination rates (CR, % of samples revealing contamination) compared using a *Chi²* test ($p < 0.05$)
- Decontamination efficiency by drug (Eff_q, in %) computed according to Anastasi et *al.*[2]: $Eff_q = \left(1 - \frac{\sum Q(\text{ng}) \text{ after cleaning}}{\sum Q(\text{ng}) \text{ before cleaning}}\right)$

Results

- No contamination before the beginning of the study and no significant difference in the drug amount compounded in each isolator
- Significant difference in the overall contamination rates after cleaning process: OR=0.341 (Fig. 2)
- Better decontamination efficiency for 4 out of the 6 most contaminating drugs (Fig. 3)
- The overall decontamination efficiency (Eff_Q) on decontamination days reaches more frequently values > 90% (Table 1)

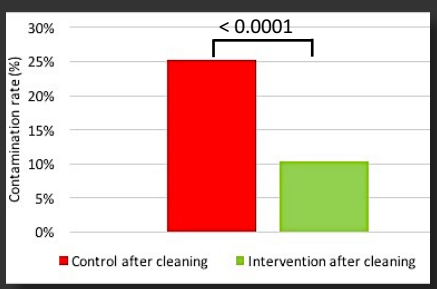

Figure 2

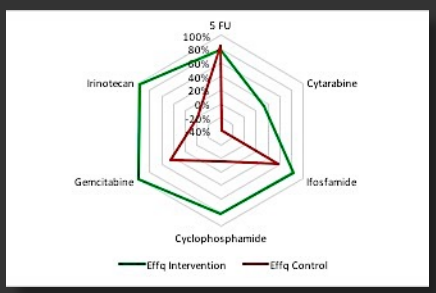

Figure 3

	Control	Interv.	p-value
Eff_Q = 0 %	36 %	14 %	0,070
Eff_Q > 90 %	7 %	43 %	0,077
Eff_Q = 100%	0 %	29 %	0,098

Table 1

Discussion – Conclusion

- Combining a decontamination protocol, comprising a tensioactive agent, to a CSTD leads to a better chemical decontamination inside isolators.
- Improving the decontamination protocol is still necessary to remove all the residual drugs (e.g. 5FU) and to achieve more frequently a contamination close to 0 ng.

References: [1] Simon et al., Plos One 2016; 11(8):e0161415 – [2] Anastasi et al., Ann Occup Hyg 2015; 59(7): 895–908

Conflict of interest: Becton-Dickinson had partially supported the study in paying for samples dosing and provided PhaSeal devices

Keywords : Security, Antineoplastic drugs, compounding, closed-system transfer devices, chemical contamination

STABILITY STUDY OF 100 MG/ML PAEDIATRIC PYRAZINAMIDE ORAL SUSPENSION IN SYRSPEND

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BACKGROUND

Pyrazinamide (PZA) is an antituberculosis agent used in adjunctive treatment of tuberculosis infection in combination with other antituberculosis agents as isoniazid, rifampicin and ethambutol. Tablet form is unsuitable for pediatric patients and leads the pharmacist to produce oral suspension. Data about PZA stability in oral suspension are scarce and were got several decades ago. Thus, new stability informations are needed.

PURPOSE

Determine the stability of 100 mg/mL PZA oral suspension in commercial compounding excipient : Syrspend® SF PH4.

MATERIAL AND METHODS

Stability study according to the ICH guidelines

3 batches of oral suspension of PZA at 100 mg/mL→ storage at room temperature in amber vials

Day : D0 → D3→ D5 →D8 →D15 →D30 →D60 →D90

Physical Stability

Mesure of pH

pHenomenal ® VWR pHmeter

Mesure of osmolality

Advanced Instruments Model 3250® Osmometer

Visual inspection

Chemical Stability

- **Using a validated analytical method**
- **Quantification of PZA**
- **Detection of degradation product**

- High Performance Liquid Chromatography with Ultraviolet detection
- Mobile phase : acetonitrile/phosphate buffer pH 3 (40:60 v/v)
- Column : WATERS C18 ATLANTIS T3 column (150 x 4.6 mm, 5 µm)
- Flow rate : 1 ml/min; λ=270 nm

Microbiological Stability

- Test using colony counts on media platings
- Trypticase Soja (35°C)
- 1/10e dilution of suspension in water

- D0
- D15
- D30
- D60
- D90

RESULTS

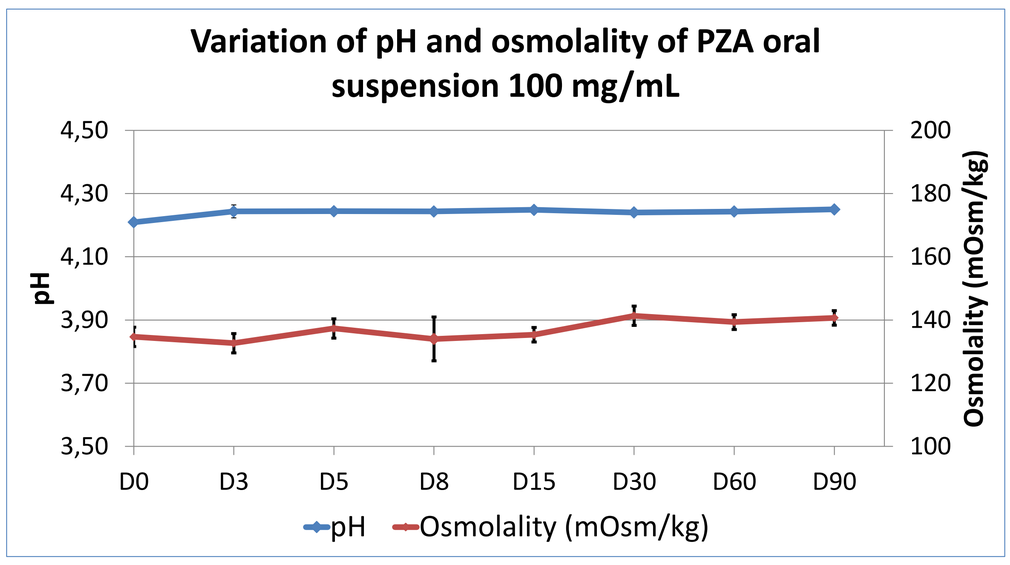
Physical stability

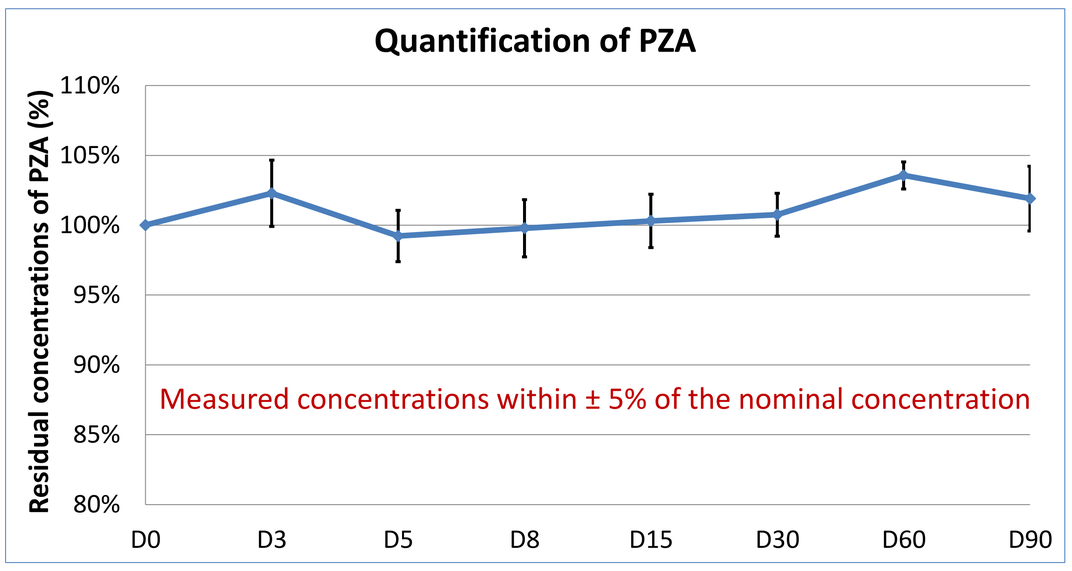
✓ No change of physical properties was observed during the studied period

Microbiological stability

✓ Microbiological media plates remained free of any bacterial and fungal colony

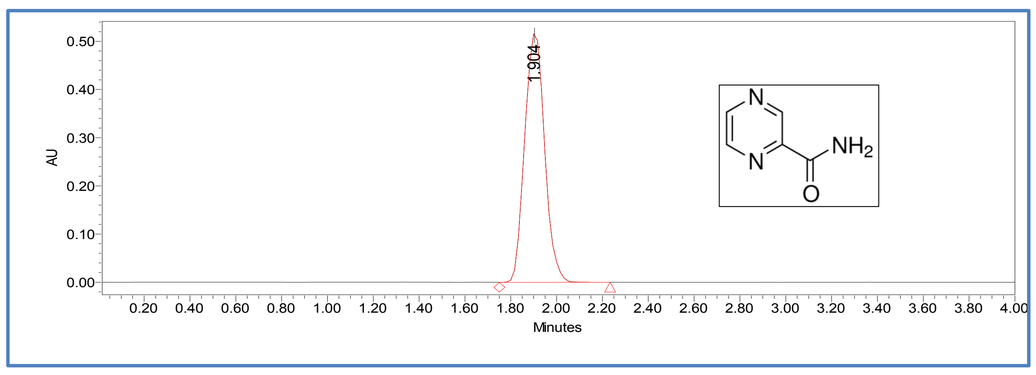
Chemical stability





✓ No degradation product

Chromatogram of PZA (270 nm)



Analysis Time (Days)	95% confidence interval of the mean (100 mg/ml)
D0	96.61 < X < 100.82
D3	98.28 < X < 103.69
D5	95.20 < X < 100.69
D8	95.27 < X < 101.73
D15	95.46 < X < 102.59
D30	96.97 < X < 101.93
D60	99.75 < X < 104.92
D90	96.87 < X < 104.33

CONCLUSION

Finally, 100 mg/mL pyrazinamide oral suspension in Syrspend® SF PH4 is stable for at least 90 days at room temperature, so we determine a shelf life of 90 days for this preparation. Eventually this oral suspension could be used in children with tuberculosis infection throughout all the treatment duration usually recommended (3 months).

22nd Congress of EAHP, 22-24 march 2017, Cannes, France – PP-054/J04 - Antimycobacterials

An Observational Review and Audit of the Treatment of Hypoglycaemic Events in a University Teaching Hospital

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1 INTRODUCTION

Hypoglycaemia is defined as a blood glucose (BG) <4 mmol / L[1]. Hypoglycaemic events in hospital inpatients with Diabetes Mellitus have been associated with increased morbidity and mortality and increased length of stay [2]. In the National Inpatient Diabetes Audit 2013, 15.8% of hospital in-patients had a diagnosis of diabetes[3]. Of those patients, 22% experienced at least one hypoglycaemic episode. Internationally, it had been reported that events were not treated as per evidence base [2].

2 AIMS & OBJECTIVES

- Determine the proportion of hypoglycaemic events treated in line with hospital protocol.
- Implement quality improvement initiatives.
- Determine whether implementation of quality improvement initiatives improved the management of hypoglycaemic events and compliance with local protocol.

3 METHODS

- Local ethical approval was obtained .
- The sample size was chosen to detect a 25% improvement with ±8% precision
- Baseline adherence to the hospital hypoglycaemic protocol was determined by analysis of 148 retrospective hypoglycaemic events which were observed in a sampling frame of 459 general medical and surgical inpatient beds over a five week period.
- Educational interventions were undertaken:
  - An evidence based protocol was developed and approved by the Drugs and Therapeutics Committee (figure 1)
  - Nursing Forum Presentation
  - Medication Safety Alert and Hypoglycaemia Competition Quiz with prize were developed (figure 2)
- A reaudit was undertaken on 151 hypoglycaemic events using the same sampling frame assessing adherence to the new protocol

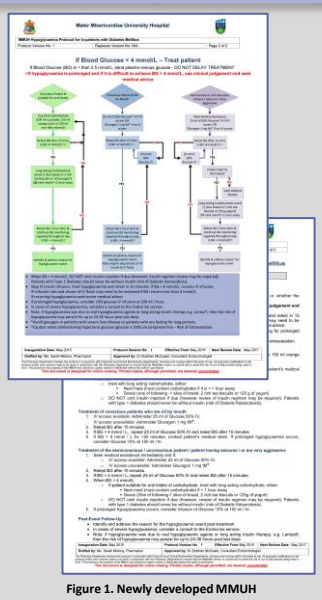

Figure 1. Newly developed MMUH Hypoglycaemia Protocol

Figure 2. Medication Safety Alert

4 RESULTS

- 73% (n=108) of hypoglycaemic events in the baseline audit were treated with a short acting carbohydrate compared with 81% (n=123) in the reaudit (P>0.05).
- Lucozade® was the predominant short acting carbohydrate used to treat hypoglycaemic events throughout the study, (n=105, 71% in the baseline audit, n=119, 79% in the reaudit). Of those events treated with Lucozade®, 33% (n=49) were treated with the recommended amount in the baseline audit, increasing to 71% (n=106) in the reaudit (P<0.05) (figure 3).

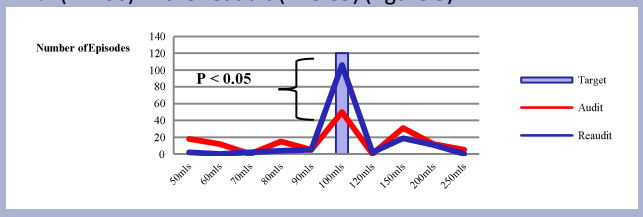

Figure 3. Amount of oral short acting carbohydrate administered – audit standard 100mls

- There was limited compliance with retesting of BG within 15 minutes in the baseline audit (repeated within 15 minutes in 9.5%; within 30 minutes in 25%). Compliance with retesting BG after 15 minutes improved significantly (P<0.05) in the reaudit (BG repeated within 15 minutes in 31%; within 30 minutes in 64% of events) (figure 4).

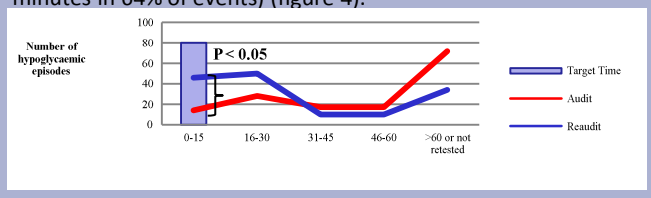

Figure 4. Time taken to retest blood glucose - audit standard = 15 minutes

5 CONCLUSION

- We established that hypoglycaemic events are common among our inpatients.
- The proportion of events that were treated in line with hospital protocol was low in the baseline audit.
- The provision of a clear, colour coded evidence based hypoglycaemia protocol and a multifaceted educational drive, improved management of hypoglycaemia, in particular the amount of short acting carbohydrate given and time to BG retesting. This has improved patient safety.
- Continued improvement initiatives are required.

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DISCLOSURE:
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22nd Congress of the EAHP
Hospital pharmacists - catalysts for change

Rossignoli. A, Villamañán. E, Lara. C, Ruano. M, Pérez. E, Moro. M, Rodríguez. E, Moreno. M, Molina. M, Herrero . A.

Risks and inefficiencies in hospitals caused by inadequate packaging of oral medications

BACKGROUND. Lack of adequate packaging of oral solid medications is an important source of inefficiency in hospitals. This inadequate labeling requires the pharmacy to repackaging them. This process generates new potential medication errors because repackaged pills look-similar, making easy to confuse them with one another.

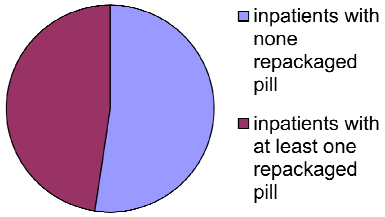
PURPOSE. To evaluate the extent to which drugs prescribed to inpatients were manipulated in hospitals because of their inadequate marketed presentation (because data appear printed for a group of pills rather than each one). Wasted in the process of adequation of medication trade-dress were evaluated, as was the proportion of look-alike repackaged drugs.

MATERIAL AND METHODS

A prospective longitudinal study was carried out (14 days) in a tertiary hospital. Pharmacotherapy prescribed to adult admitted patients was daily evaluated (410 beds). Using a CPOE program (FarmaTools®) pharmacists checked the number of repackaged look-alike drugs dispensed to these patients on a daily basis. Moreover, we checked the number and time consumed in repackaging pills.

RESULTS

Pharmacotherapy of 4,199 inpatients was analyzed.
Of them, 2,000 received at least one repackaged pill.

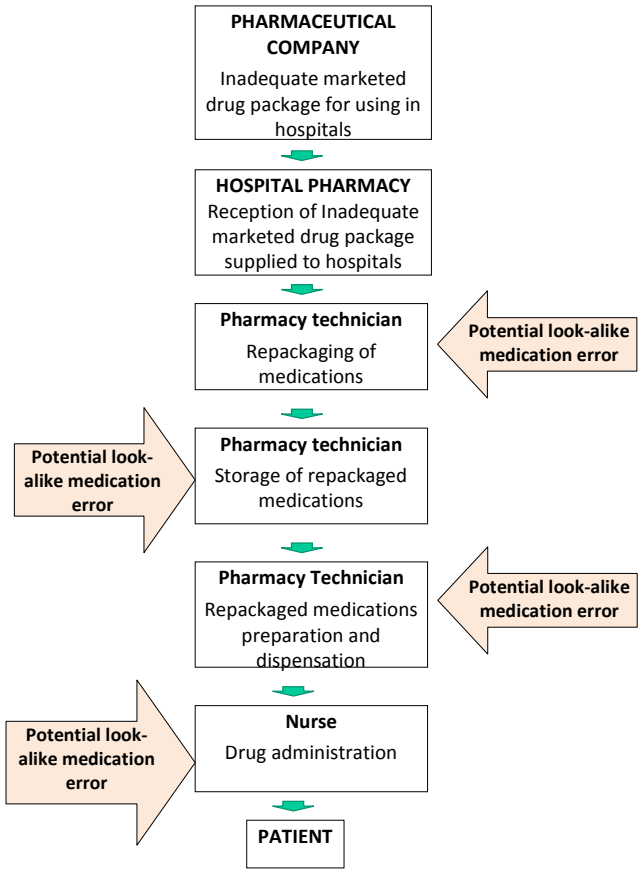


Admitted patients received a total of 3,336 repackaged look-alike drugs.

Specialties most frequently involved were Internal Medicine(73.3% of their inpatients) and Hematology(70.7%).

13,758 units were repackaged in the pharmacy service, which meant that 983 media of look-alike medications were generated every day (80 minutes approximately were daily wasted).

Over the study period, a dispensing error related to look-alike repackaged pills occurred because of confusion in their storage.



Flowchart: Weak points for look-alike medication errors involving repackaged drugs used in a hospital.

CONCLUSIONS

There is a high rate of inadequately marketed oral medications being dispensed to inpatients. Medications marketed in blister packs require individual pills to be repackaged by pharmacy services, leading to a waste of time. This process may constitute a hazard to patient safety, increasing medical errors because repackaged pills look similar.

Drugs regulatory agencies should promote standards for packaging and labeling of drugs individually identified to improve safety and efficiency in the medication use process in hospitals

Analysis Of Medication Use By Frail Elderly Patients With Frequent Hospital Admissions

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UNIVERSITY of BRADFORD
Celebrating 50 years

Background

Unplanned readmission to hospital following discharge is a major problem in the elderly[1]. Medication attributes to 5-8% of unplanned hospital admissions[2] and 29-35% of hospital readmissions[3]. Hospital readmission has a negative impact on the health and well-being of an older person[4]. However, there is a lack of evidence of the association of medicines-related risk factors with frequent readmission. Inclusion of known risk factors could improve readmission risk predictive models.

Aim and objectives

The aim of this study is:

- To explore the medicines-related characteristics of frail elderly patients with frequent hospital admissions into a large NHS teaching hospital Trust in England.

Objectives are:

- To determine the patterns of frequent hospital admissions amongst frail elderly patients.
- To describe the number and type of medicines prescribed for frail elderly patients with frequent readmissions.

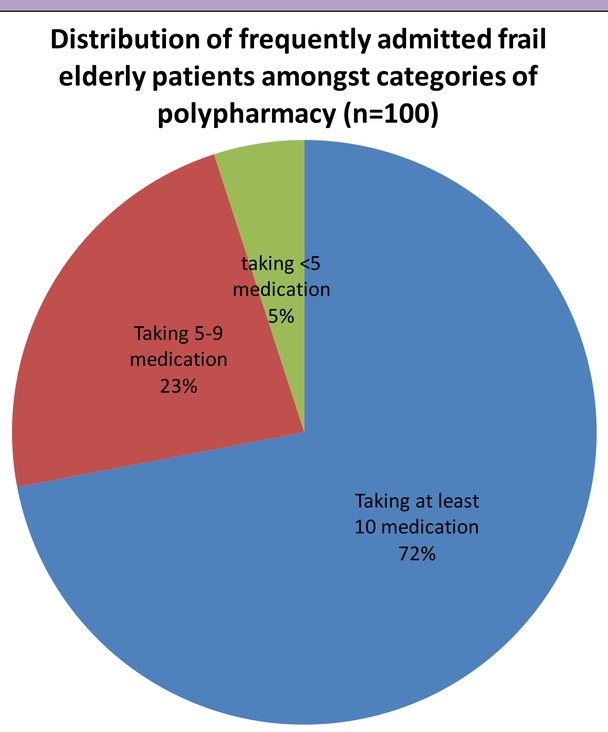
Methods

This retrospective cohort analysis examined discharge summaries of 100 patients aged 75 and over, with 3 or more episodes of unplanned medical admissions into the study site in 2015.

Patients were randomly selected from a larger sample and data was collected for the following:

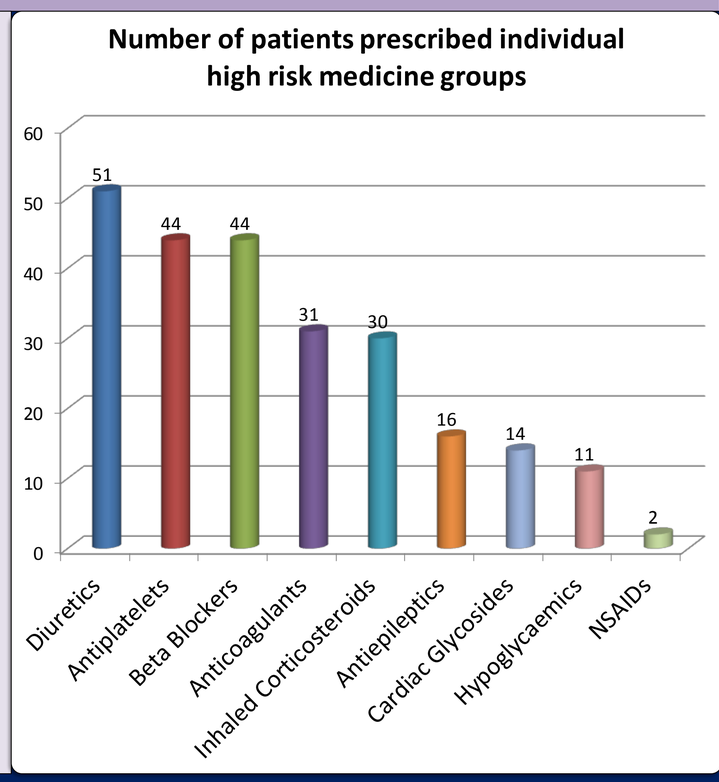
- Number of medicines prescribed;
- Whether medication changes were made;
- Whether they were prescribed a high risk drug[5];
- Whether they were on a potentially inappropriate medicine (PIM) as defined by the Beers Criteria[6].

Results



The median number of admissions per patient was 4/ year (IQR range= 1).

- 89% (n=100) of patients were prescribed at least one high risk medicine.
- 78% (n=100) of patients had their medicines changed during their second admission episode.
- 48% (n=100) of patients were found to be taking at least one PIM. These include alpha-blocker, hypnotics, anti-psychotics, tricyclic anti-depressants, anti-muscarinics, high-dose spironolactone (>25mg/day), high dose digoxin (>125mcg/day), and flecainide.



Discussion and Conclusion

- A large proportion of patients had severe polypharmacy (≥10 medicines), with complex medication regimes consisting of high risk medicine(s) and PIM(s).
- The full range of Beers Criteria was not used in this study, as clinical judgement could not be made from examining discharge summaries. The proportion of PIM(s) use may be an underestimation.
- We are currently carrying out comparison statistics of this data against those of less frequently admitted frail elderly patients, which will provide an indication of the significance of these findings.
- Targeted deprescribing, close monitoring of high risk medicines and improved discharge planning will facilitate safe medicines use in this patient population .

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EAHP 2017 **Abstract Number PS-045** **Category: Patient Safety and Risk Management**

PS-069

SIMULATION TRAINING: AN INNOVATIVE AND EFFICIENT TOOL TO TEACH MEDICATION RECONCILIATION TO PHARMACY STUDENTS

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BACKGROUND

Medication reconciliation (MR) is an essential clinical pharmacy activity requiring **appropriate knowledge, skills and behaviors**.

To standardize students' MR learning in hospital, a **simulation training program on best possible medication history** (BPMH) was developed for clinical pharmacy students.

PURPOSE

To assess:

- ✓ **feasability**,
- ✓ **effectiveness**

of a training program on BPMH

MATERIAL AND METHOD

DEPLOYMENT OF THE TRAINING PROGRAM

- **Educational objectives:**
  - → **To formalize a comprehensive BPMH**
  - → **To conduct a patient interview.**
- **Training program divided into 3 parts.**

PART 1: Theoretical part
All students
Support presentation: power point
1 pharmacist trainer
Length: 1h30

PART 2: Simulation technical session

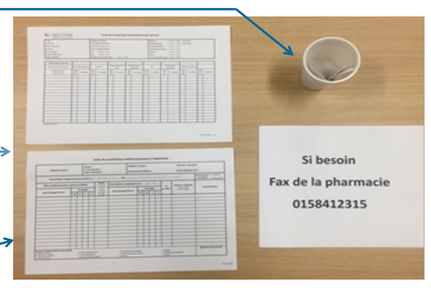

"Standardized patient"
Group of 2 students
2 pharmacists: Trainer + actor
Length: 1 h 30

PART 3: Tutored practice in clinical unit
Student individually supervised by a pharmacist tutor

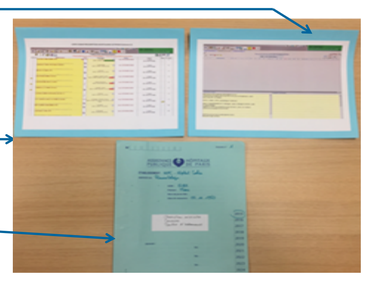
1. BRIEFING — 10 min

- Objectives and progess of the session;
- Presentation of the material available at t0;
- Assignment of the scenarios.

Draw of the scenarios
Sheet of collection by source
Reconciliation sheet



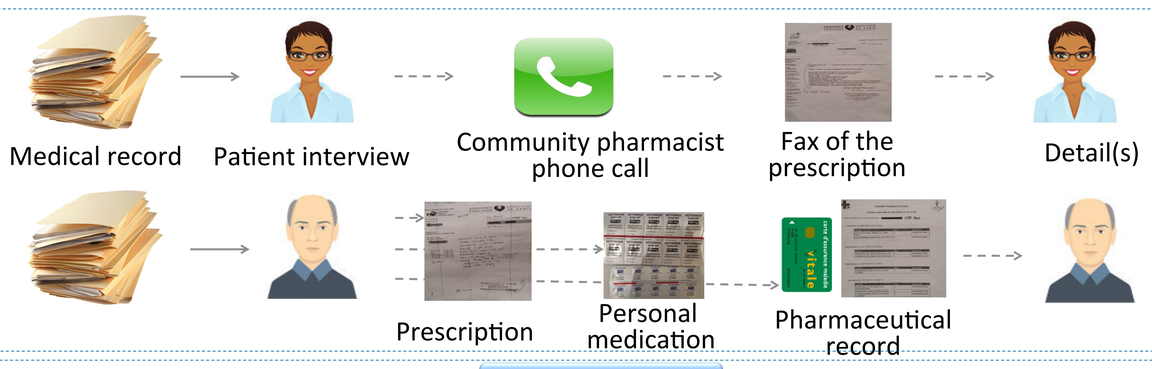
Care planning
Computerized prescription
Medical record



2. SIMULATION — 50 min

2 evolutive scenarios depending on the decision-making of students

- Finding information (10 min);
- Patient interview (15 min x 2);
- Formalization of the BPMH (10 min).



3. DEBRIEFING — 30 min

- Collection of students' experiences and feeling;
- Focus on achievements and areas requiring improvement;
- Discussion about the case;
- Comparison of the BPMH to the prescription at admission;
- Answers to the questions of the students.

EFFECTIVENESS

The effectiveness was assessed by the achievement of the first 3 levels of Kirkpatrick's Model :

« **Behaviors** » using a **satisfaction survey**.
« **Learning** » using a **knowledge quiz** before and 1 month after the training.

Z-score for paired data has been used (α = 5%).
« **Reactions** » observed by trainers with **a competency sheet** (29 skills)

FEASABILITY

Evaluation from an organizational point of view regarding the respect of the :

- **Traning planning**,
- **Continuity of pharmacy activities**

RESULTS

Number of students : 39 | **Trainers : 2 pharmacists** | **Study period : 1 year** | **Number of training sessions : 4 sessions during a week (mornings)**

EFFECTIVENESS

Reactions

Are you satisfied about:	Not at all	Little	Satisfied	Very
Training (overall)?	0%	5%	51%	44%
Theoretical part ?	0%	0%	67%	33%
Practical part ?	0%	0%	44%	56%
Difficulty level of senarios proposed ?	0%	3%	69%	28%
Availability of trainers?	0%	3%	36%	62%
Overall duration of the training?	0%	5%	10%	85%

>97% of students are **satisfied** or **very satisfied.**

Do you think we should	No	Yes
Make this training systematic ?	3%	97%
Keep the actual theoretical/ pratical ratio ?	33%	67%
Increase the number of scenarios ?	36%	64%
Keep simulation session in group of 2 students ?	35% (alone)	67%
Keep a 1h30 duration for each simulation session ?	8% (shorter) 18% (longer)	74%

- **100%** of students believe they have **acquired new knowledge** and that this training will result in a **change in their professional practice.**
- **100%** would make this training **systematic** .

Learning

% of improvement

Quiz's mean score before training	**14/20**
Quiz's mean score after training	**18/20**
→ **SIGNIFICANT difference** p-value $<5x10^{-10}$	

Test your knowledge !
(1 or more good answers/question)*

1) Medication reconciliation
a. is a formalized, interactive and multiprofessional process guaranteeing the continuity of care
b. is a simple interview of the patient — 12%
c. promotes the communication between care teams
d. allows you to limit the medication errors at transition points

2) Medication reconciliation can be achieved
a. at the patient admission — 15%
b. during a transfer
c. at the exit of the patient

3) Medication reconciliation can highlight
a. a noncompliance
b. an unintentional discrepancy — 13%
c. a drug error
d. an inadequate dosage
e. a contraindication
f. self-medication

4) An unintentional divergence may correspond to
a. omission of the drug usually taken by the patient — 15%
b. drug dosage higher than dosage usually prescribed
c. voluntary addition of a new drug on the admission drug prescription
d. Drug dosage lower than dosage usually prescribed

5) What are the sources of information during the reconciliation ?
a. Patient (or family) — 26%
b. Community pharmacist
c. Pharmaceutical record
d. Community nurse
e. General practitionner
f. Personal medication
g. Prescription

6) To formalize a BPMH, it is best to consult
a. at least 2 sources of information
b. at least 3 sources of information — 67%
c. all sources needed
d. first the patient then medical records and drug boxes brought by the patient
e. first prescription hospital admission then the patient and the medical record
f. medical records and drugs boxes brought by the patient, the patient and possibly community pharmacist

7) Who can be involved in the medication reconciliation process
a. nurses — 0%
b. physicians
c. pharmacists
d. students
e. technicians

8) Regarding the technique for patient interview, it is recommended
a. to focus on closed questions — 15%
b. to focus on open questions
c. to tell the objectives of the interview
d. to use simple words

9) What patient criteria have to be taken into account before interviewing the patient :
a. age — 36%
b. history of memory disorders or signs of dementia
c. Fluent in French language
d. no, all patients should be questioned

10) Retroactive medical reconciliation
a. is the comparison of the BPMH to the drug admission prescription — 36%
b. allows to communicate the BPMH for the realization of the admission prescription
c. allows to propose equivalents of treatments available in hospital *a priori*
d. Allows to correct discrepancies between the BPMH and the admission prescription *a posteriori*

*Answers: 1) a, c, d. 2) a, b, c. 3) a, b, c, d, e, f. 4) a, b, d. 5) a, b, c, d, e, f, g. 6) b, c, f. 7) a, b, c, d, e. 8) b, c, d. 9) a, b, c. 10) a, d.

Behaviors

Acquired - PART 2

- Preparation of the patient interview;
- Communication techniques (behaviors, wording of questions, attitudes...);
- Collection of information during the interview: medications prescribed, self-medications, « specific » medications (eye drops, creams...), pharmaceutical record, allergy, name of the community pharmacist...

Requiring improvements - PART 2

- Order of questions;
- Collecting dosages for each drug;
- Making a photocopy of the prescription if the patient provides it during the interview;
- If necessary, asking again details to the patient when you return the pharmaceutical record or the prescription;
- Regarding the community pharmacist phone call: asking a fax of the prescription;
- Starting by asking open questions to the patient.

Acquired – PART 3 (opinion of tutors)

- All of the skills have been acquired;
- All students were able to formalize a comprehensive BPMH and to conduct a patient interview "serenely".

FEASABILITY

Traning planning and continuity of pharmacy activities were respected.

CONCLUSIONS

Simulation is an **innovative, playful and relevant tool**. This training, standardizing the students' MR learning, is **effective and feasible** in hospital.

It allows to combine the 3 qualities needed for a good MR practice: **knowledge, skills and behaviors.**

This training will be **substained** and could be **extended to other professionals** such as hospital pharmacy technicians.

22th EAHP Congress « Hospital pharmacists – Catalysts for change », 22nd – 24th March 2017, Cannes, FRANCE

DOES THE COMPLETION OF A RISK ASSESSMENT TEMPLATE IMPROVE THE RATE OF APPROPRIATE VENOUS THROMBOEMBOLISM RISK MANAGEMENT FOR HOSPITALISED MEDICAL PATIENTS?

PS 108

Authors: Oran Quinn, Jeremy Sargent, Elaine Conyard, Our Lady of Lourdes Hospital, Drogheda

B01 - Antithrombotic agents

Background

- VTE is associated with substantial morbidity and mortality (1,2)
- 34 VTE related deaths in Europe are linked to hospitalisation (3)
- Patients with multiple risk factors for VTE are at greater risk (4,5)
- NICE (UK) recommends completing a risk assessment for all hospitalised patients (6)
- Risk assessments are often not completed in a busy hospital environment

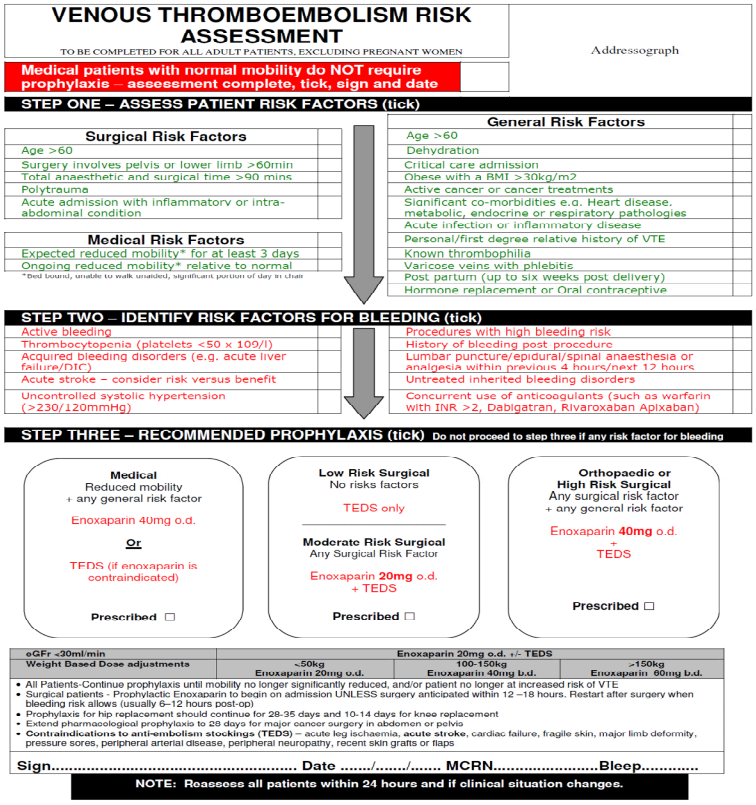
Objective(s)

- This study aimed to assess whether completion of a VTE risk management template (fig.1) could positively influence appropriate VTE risk management.

Method

- A risk management template (RMT) was created and attached to the medication administration record for medical patients admitted to the hospital from the acute medical assessment unit (AMAU). Medical patients from the Emergency Department (ED) were admitted without recourse to this assessment template. Details of the VTE risk management of patients admitted from both units were collected and compared.

Fig. 1



VENOUS THROMBOEMBOLISM RISK ASSESSMENT

TO BE COMPLETED FOR ALL ADULT PATIENTS, EXCLUDING PREGNANT WOMEN

Addressograph

Medical patients with normal mobility do NOT require prophylaxis – assessment complete, tick, sign and date

STEP ONE – ASSESS PATIENT RISK FACTORS (tick)

Surgical Risk Factors
- Age >60
- Surgery involves pelvis or lower limb >60min
- Total anaesthetic and surgical time >90 mins
- Polytrauma
- Acute admission with inflammatory or intra-abdominal condition

Medical Risk Factors
- Expected reduced mobility* for at least 3 days
- Ongoing reduced mobility* relative to normal

*Bed bound, unable to walk unaided, significant portion of day in chair

General Risk Factors
- Age >60
- Dehydration
- Critical care admission
- Obese with a BMI >30kg/m2
- Active cancer or cancer treatments
- Significant co-morbidities e.g. Heart disease, metabolic, endocrine or respiratory pathologies
- Acute infection or inflammatory disease
- Personal/first degree relative history of VTE
- Known thrombophilia
- Varicose veins with phlebitis
- Post partum (up to six weeks post delivery)
- Hormone replacement or Oral contraceptive

STEP TWO – IDENTIFY RISK FACTORS FOR BLEEDING (tick)
- Active bleeding
- Thrombocytopenia (platelets <50 x 109/l)
- Acquired bleeding disorders (e.g. acute liver failure/DIC)
- Acute stroke – consider risk versus benefit
- Uncontrolled systolic hypertension (>230/120mmHg)
- Procedures with high bleeding risk
- History of bleeding post procedure
- Lumbar puncture/epidural/spinal anaesthesia or analgesia within previous 4 hours/next 12 hours
- Untreated inherited bleeding disorders
- Concurrent use of anticoagulants (such as warfarin with INR >2, Dabigatran, Rivaroxaban Apixaban)

STEP THREE – RECOMMENDED PROPHYLAXIS (tick) Do not proceed to step three if any risk factor for bleeding

Medical	Low Risk Surgical	Orthopaedic or High Risk Surgical
Reduced mobility + any general risk factor	No risks factors	Any surgical risk factor + any general risk factor
Enoxaparin 40mg o.d. Or TEDS (if enoxaparin is contraindicated)	TEDS only	Enoxaparin 40mg o.d. + TEDS
Prescribed ☐	Moderate Risk Surgical: Any Surgical Risk Factor — Enoxaparin 20mg o.d. + TEDS — Prescribed ☐	Prescribed ☐

eGFr >30ml/min	Enoxaparin 20mg o.d. +/- TEDS		
Weight Based Dose adjustments	<50kg Enoxaparin 20mg o.d.	100-150kg Enoxaparin 40mg b.d.	>150kg Enoxaparin 60mg b.d.

- All Patients-Continue prophylaxis until mobility no longer significantly reduced, and/or patient no longer at increased risk of VTE
- Surgical patients - Prophylactic Enoxaparin to begin on admission UNLESS surgery anticipated within 12 –18 hours. Restart after surgery when bleeding risk allows (usually 6–12 hours post-op)
- Prophylaxis for hip replacement should continue for 28-35 days and 10-14 days for knee replacement
- Extend pharmacological prophylaxis to 28 days for major cancer surgery in abdomen or pelvis
- **Contraindications to anti-embolism stockings (TEDS)** – acute leg ischaemia, **acute stroke**, cardiac failure, fragile skin, major limb deformity, pressure sores, peripheral arterial disease, peripheral neuropathy, recent skin grafts or flaps

Sign..... Date ...../...../..... MCRN.....Bleep.....

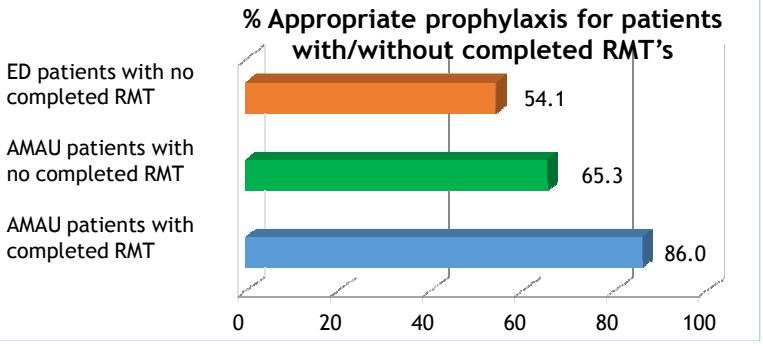
NOTE: Reassess all patients within 24 hours and if clinical situation changes.

Results

- 207 patients were included for analysis - AMAU (n=122) ED (n=85).
- 73.8% of AMAU patients were offered appropriate prophylaxis compared to 54.1% of ED patients (p=0.0074)

- Patients in AMAU with a completed RMT were significantly more likely to be offered appropriate prophylaxis than patients without a completed template (p=0.0153) and patients in ED (p=0.0001).

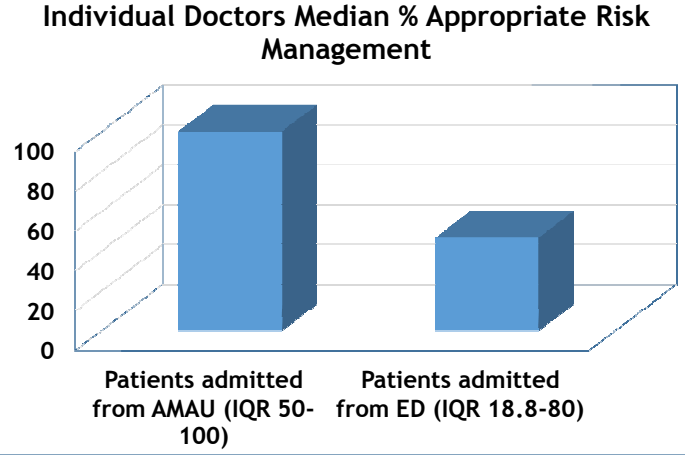
Fig.2



- 86% of patients with completed risk assessment templates were given appropriate prophylaxis compared to 65.3% of AMAU patients without a completed assessment (p=0.0153) (Fig. 2)

- Twenty doctors admitted patients from both locations during the study. Their median percentage of appropriate risk management for patients admitted from the AMAU was 100.0% (IQR 50-100) compared to 46.5% for the same group of doctors admitting patients from ED (IQR 18.8 - 80.0, p=0.0428). (Fig. 3)

Fig. 3



Conclusions

- **Patients with a completed RMT were significantly more likely to be offered appropriate prophylaxis than patients without a completed template.**
- Individual doctors were significantly more likely to manage a patients risk of VTE appropriately when they completed a RMT.
- This work demonstrates the value of completing VTE risk management templates on admission for all patients to ensure appropriate prophylaxis is offered to patients at risk.

Discussion/Limitations

- Reliably estimating mobility status was not possible - all patients were considered to have reduced mobility.
- Indicators of reduced mobility were included on the RMT to assist prescribers in this assessment.
- The number of doctors included in the study was small - a larger study would be necessary to confirm these initial findings.

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