Seminar P4 - Sharing pharmacy information for safer transition of care

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Conflict of interest

Nothing to disclose

240.000 habitants
594 beds

Risk during transition of care

60% of all medication errors occurr during transitions of care

Poor communication during transition of care is reponsible of 50% of all hospital-related medication errors

What information is needed to improve safety?

Who needs information?

Pharmacists interventions to improve communication during transition of care

1.Kirwin et al. Pharmacotherapy 2012;32: e338-e347);
2. Steed D el al. J Am Pharm Assoc 2012; 52: 43-52

Case: Antonio , 75 year old man

Medical history:

Ischemic optic neuropathy
Dyslipidemia

Emergency room:
Dizzy without loss of consciousness
BP: 151/59 mm Hg
HR: 47 bpm
Oxygen saturation: 94%

IN THE EMERGENCY ROOM:

EKG: Sinus bradycardia (40-45 bpm), First-degree atrioventricular block

Blood tests: normal range

Chest x-ray: no significant alteration

DIAGNOSE: bradycardia
PLAN: hospitalization

Medication reconciliation

"The **comprehensive evaluation** of a patient's medication regimen any time there is a **change** in therapy in an effort to **avoid medication errors** such as omissions, duplications, dosing errors, or drug interactions, as well as to observe compliance and adherence patterns. This process should include a **comparison** of the existing and previous medication regimens and should occur at every transition of care in which new medications are ordered, existing orders are rewritten or adjusted, or if the patient has added nonprescription medication to [his or her] self-care."

APhA and ASHP definition

What information is needed to improve safety?

1. Best possible medication list

Case: Antonio

Comparison of new and previous medication regimens

MEDICATION AT HOME (information from electronic medical record in primary care)	MEDICATION AT ADMISSION (prescribed by ED physician)
Omeprazol 1-0-0	Omeprazol 1-0-0
Acetylsalicylic acid 100 mg 0-1-0	AAS 100 mg: 0-1-0
Simvastatin 40 mg: 0-0-1	Simvastatin 40 mg
Etoricoxib	**Comprehensive evaluation:** Medication error or justified medication discrepancies?
Eye drops (bimatoprost/timolol)	

IN THE EMERGENCY ROOM:

EKG: Sinus bradycardia (40-45 bpm), First-degree atrioventricular block

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Comparison of new and previous medication regimens

MEDICATION AT HOME (information from electronic medical record in primary care)	MEDICATION AT ADMISSION (prescribed by ED physician)
Omeprazol 1-0-0	Omeprazol 1-0-0
Acid acetylsalicylic 100 mg 0-1-0	AAS 100 mg: 0-1-0
Simvastatin 40 mg: 0-0-1	Simvastatin 40 mg
Etoricoxib	MEDICATION FOR ACUTE CONDITION
Eye drops (bimatoprost/timolol)	PATIENT WITH BRADYCARDIA

Conclusion: justified discrepancies. No medication error.

What information is needed to improve safety?

1. Best posible medication list
2. Clinical data: vital signs, renal function, drug levels..

Who needs information?

New physcian responsible of drug prescription
Pharmacists responsible of medication reconciliation
Nurse responsible of drug administration

Someone else?

Case: Antonio

Next step: interview patient to obtain the BPML

Arcoxia (etoricoxib): 1-0-0
Adiro 100 mg (AAS) : 0-1-0
Simvastatina 40 mg: 0-0-1
Omeprazol (omeprazol): 1-0-0
Ganfort 300 mcg/mL (bimatoprost/timolol) **Antonio explains that he has forgotten to tell the physician that he daily takes these eyedrops, but he has carried eyedrops with him to the hospital and his wife is going to administrate them at lunch time as she always does.**

Next steps: pharmacists intervention. Communication

1. Information to the patient:

   General recomendation: do not administrate any drug before checking with the nurse

   Eyedrops can be absorbed and cause bradycardia

2. Information to the physician:
   Eye drops may be responsible of patients syncope.

3. Information to the nurse: patient had carried medication with him : “be aware that eyedrops administration must to be stopped because of medical condition”

Who needs information?

New physcian responsible of drug prescription
Pharmacists responsible of medication reconciliation
Nurse responsible of drug administration

And……

WE NEED TO COMMUNICATE WITH THE PATIENT !!!

Who needs information?

New physcian responsible of drug prescription
Pharmacists responsible of medication reconciliation
Nurse responsible of drug administration

The patient and caregiver

What information is needed to improve safety?

1. Best posible medication list
2. Clinical data: vital signs, renal function, drug levels..
3. Changes in medication regimen and reasons for them

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Communication with patient

Table 1. The Joint Commission National Patient Safety Goal 03.06.01 for ambulatory health care—Maintain and communicate accurate patient medication information: Five elements of performance

Element no.	Element description
1	Obtain and/or update information on the medications the patient is currently taking. This information is documented in a list or other format that is useful to those who manage medications.
2	Define the types of medication information to be collected in different settings and patient circumstances.
3	For organizations that prescribe medications: compare the medication information the patient brought to the organization with the medications ordered for the patient by the organization in order to identify and resolve discrepancies.
4	For organizations that prescribe medications: provide the patient (or family as needed) with written information on the medications the patient should be taking at the end of the care episode (e.g., name, dose, route, frequency, purpose).
5	For organizations that prescribe medications: explain the importance of managing medication information to the patient at the end of the care episode.

Source: Reference 22.

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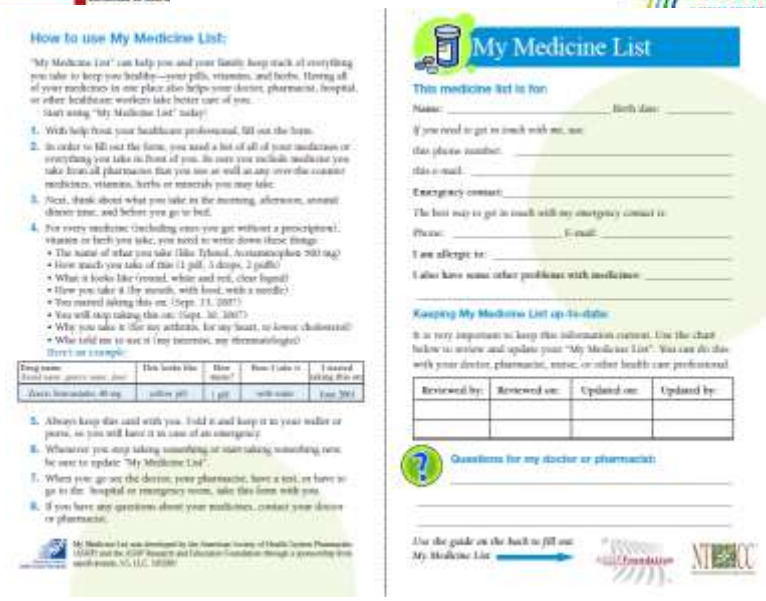


How to use My Medicine List:

"My Medicine List" can help you and your family keep track of everything you take to keep you healthy—your pills, vitamins, and herbs. Having all of your medicines in one place also helps your doctor, pharmacist, hospital, or other healthcare workers take better care of you.

Start using "My Medicine List" today!

1. With help from your healthcare professional, fill out the form.
2. In order to fill out the form, you need a list of all of your medicines or everything you take in front of you. Be sure you include medicine you take from all pharmacies that you use as well as any over-the-counter medicines, vitamins, herbs or minerals you may take.
3. Next, think about what you take in the morning, afternoon, around dinner time, and before you go to bed.
4. For every medicine (including ones you get without a prescription), vitamin or herb you take, you need to write down these things:
   - The name of what you take (like Tylenol, Acetaminophen 500 mg)
   - How much you take of this (1 pill, 5 drops, 2 puffs)
   - What it looks like (round, white and red, clear liquid)
   - How you take it (by mouth, with food, with a needle)
   - You started taking this on: (Sept. 13, 2007)
   - You will stop taking this on: (Sept. 30, 2007)
   - Why you take it (for my arthritis, for my heart, to lower cholesterol)
   - Who told me to use it (my internist, my rheumatologist)

Here's an example:

Drug name: Brand name, generic name, dose	This looks like:	How much?	How I take it:	I started taking this on:
Zocor, Simvastatin, 40 mg	yellow pill	1 pill	with water	June 2001

5. Always keep this card with you. Fold it and keep it in your wallet or purse, so you will have it in case of an emergency.
6. Whenever you stop taking something or start taking something new, be sure to update "My Medicine List".
7. When you go see the doctor, your pharmacist, have a test, or have to go to the hospital or emergency room, take this form with you.
8. If you have any questions about your medicines, contact your doctor or pharmacist.

My Medicine List was developed by the American Society of Health-System Pharmacists (ASHP) and the ASHP Research and Education Foundation through a sponsorship from [illegible]

My Medicine List

This medicine list is for:

Name: _____ Birth date: _____

If you need to get in touch with me, use:

this phone number: _____

this e-mail: _____

Emergency contact: _____

The best way to get in touch with my emergency contact is:

Phone: _____ E-mail: _____

I am allergic to: _____

I also have some other problems with medicines: _____

Keeping My Medicine List up-to-date

It is very important to keep this information current. Use the chart below to review and update your "My Medicine List". You can do this with your doctor, pharmacist, nurse, or other health care professional.

Reviewed by:	Reviewed on:	Updated on:	Updated by:

Questions for my doctor or pharmacist:

_____

_____

_____

Use the guide on the back to fill out My Medicine List

Case: María, 68 year old woman
Medical history:

Hypertension
Chronic obstructive pulmonar disease
Insomnia
Recent diagnose of atrial fibrilation

Emergency room:

Bronchospasm

BP: 151/59 mm Hg
HR: 105 bpm
Oxygen saturation: 92 %

MEDICATION AT HOME (information from electronic medical record in primary care)	MEDICATION AT ADMISSION (prescribed by ED physician)
Omeprazol	Omeprazol 1-0-0
Lisinopril	Enalapril (formulary ECAI)
Bisoprolol	Bisoprolol
Formoterol/fluticasone MDI	Salbutamol + ipratropio aerosol
Salbutamol PRN	Metilprednisolone IV

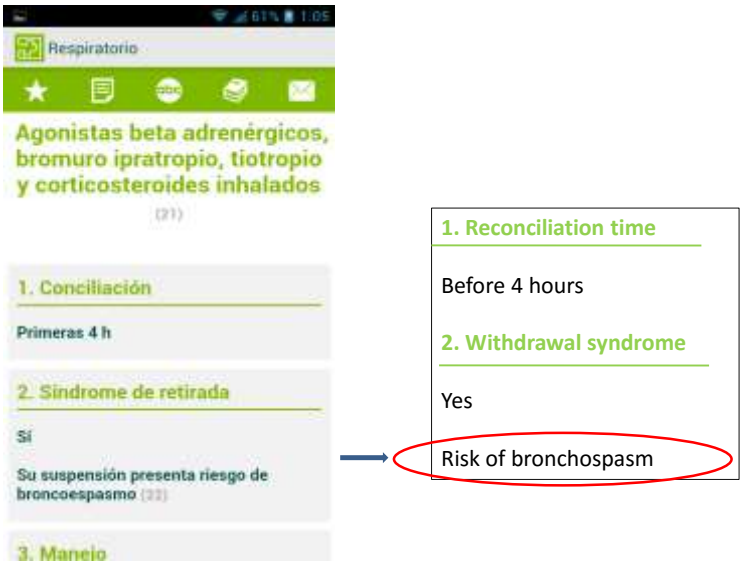
Conclusion: justified discrepancies. No medication error.

Patient interview:

-No additional drugs reported

-Patient said she had stopped bronchodilators since the last visit to the emergency room when she was first diagnosed of atrial fibrillation because she had read in package leaflet that she could have tachycardia as a side effect

What happens when drugs are stopped abruptly?: App aplication for medication reconciliation



Pharmacist intervention

1.Communication with patient: drug information and counselling

2. Communication with emergency physician to reinforce patient of the importance of not stopping inhalaters

3. Communication with general practioner to promote and monitor adherence

What information is needed to improve safety?

1. Best posible medication list
2. Patient´s medication use: adherence, administration technique…
3. Clinical data: vital signs, renal function, drug levels..
4. Changes in medication regimen and reasons of changes
5. Postdischarge monitoring requirements

Who needs information?

New physcian responsible of drug prescription
Pharmacists responsible of reconcilation
Nurse responsible of drug administration
Health care professionals involved in chronic care and drug adherence
The patient and caregiver

Case: Jesus, 52 year old man

Medical history:

Hypertension
Gastric ulcer (Forrest III) recently diagnosed
Hypothyroidism

Emergency room:

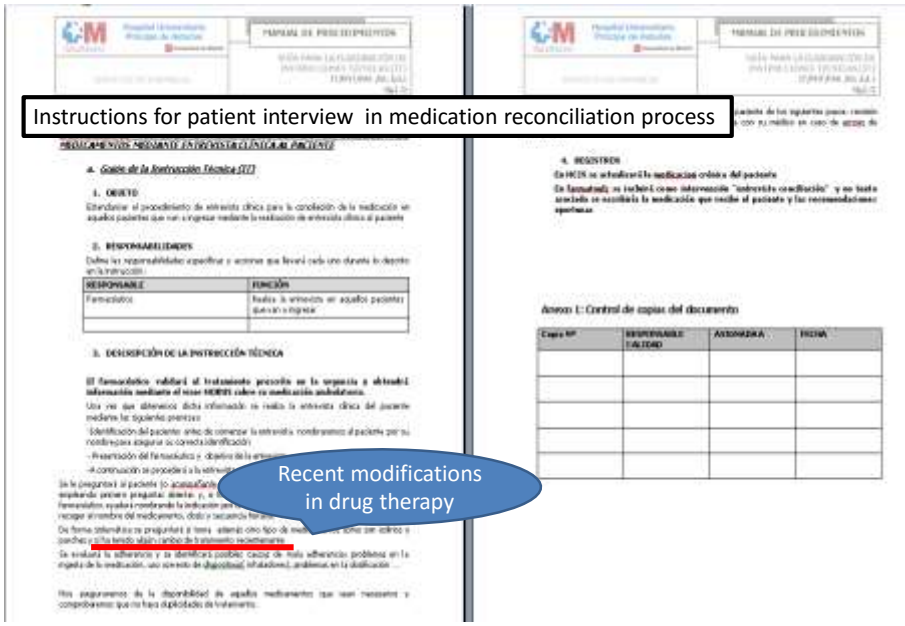
Melena
BP: 104/68 mm Hg; HR: 54bpm; Oxygen saturation: 96%
Hb: 12, 4 g/dL (previous: 14,7 g/dL)
Gastroscopy: gastric ulcer

Case: Jesus, 52 year old man

BPML
Omeprazol
Candesartan
Levotyroxin
Escitalopram
No recent NAIDs

Diagnose:
Upper gastrointestinal heamorrhage

Therapeutic recommendation at discharge
Amoxicillin+clarithromycin+omeprazol
The same treatment prior to emergency visit



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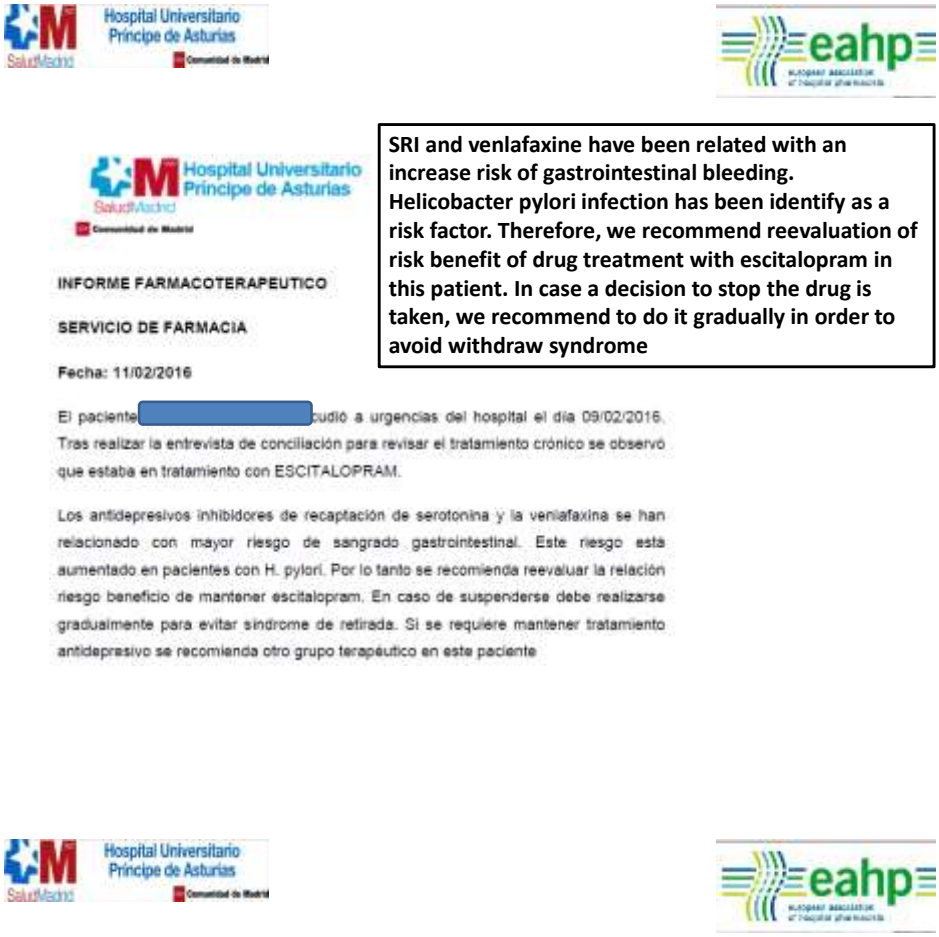
Case: Jesus, 52 year old man

BPML
Omeprazole
Candesartan
Levotyroxin
Escitalopram ¡¡RECENTLY INTRODUCED!!
No recent NAIDs

Diagnose:
Upper gastrointestinal heamorrhage

Therapeutic recommendation at discharge
Amoxicillin+clarithromycin+omeprazol
The same treatment prior to emergency visit



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INFORME FARMACOTERAPEUTICO

SERVICIO DE FARMACIA

Fecha: 11/02/2016

El paciente [redacted] acudió a urgencias del hospital el día 09/02/2016. Tras realizar la entrevista de conciliación para revisar el tratamiento crónico se observó que estaba en tratamiento con ESCITALOPRAM.

Los antidepresivos inhibidores de recaptación de serotonina y la venlafaxina se han relacionado con mayor riesgo de sangrado gastrointestinal. Este riesgo está aumentado en pacientes con H. pylori. Por lo tanto se recomienda reevaluar la relación riesgo beneficio de mantener escitalopram. En caso de suspenderse debe realizarse gradualmente para evitar síndrome de retirada. Si se requiere mantener tratamiento antidepresivo se recomienda otro grupo terapéutico en este paciente

SRI and venlafaxine have been related with an increase risk of gastrointestinal bleeding. Helicobacter pylori infection has been identify as a risk factor. Therefore, we recommend reevaluation of risk benefit of drug treatment with escitalopram in this patient. In case a decision to stop the drug is taken, we recommend to do it gradually in order to avoid withdraw syndrome

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What information is needed to improve safety?

1. Best posible medication list
2. Patient´s medication use: adherence, administration technique…
3. Clinical data: vital signs, renal function, drug levels..
4. Recent changes in medication regimen
5. Actual or potential drug related problems
6. Changes in medication regimen and reasons of changes
7. Postdischarge monitoring requirements

Pharmacist´s interventions to improve communication during transition of care

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Pharmacists interventions

- ✓ Medication reconciliation and medication review at admission and discharge
- ✓ Pharmacists transition coordinator
- ✓ Predischarge pharmacists based counseling and follow up visits
- ✓ Posthospitalization group visits (eg: posthospitalization diabetes group visits)
- ✓ Specific transition care programs to reduce dosing errors with high risk medication
- ✓ (eg: anticoagulants)
- ✓ Consultant pharmacists in nursing facilities (medication review ..)
- ✓ Post acute care clinical model (review of medication changes)
- ✓ Collaboration with community pharmacies

Sen S et al.Pharmacy Practice 2014; 12:439

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Randomized controlled trial

Control group: usual care
Intervention group: medication reconcilation service (pharmacist in collaboration with ED physician). 5 steps:

1. Patient profile review
2. Verification through patient interview
3. ED medication therapy management
4. Patient education
5. Communication to primary care providers: future recommendations and other patient care and drug related issues documented in electronic health report (electronically communicated or mailed to primary care provider) A similar letter was given to the patient

J Manag Care Spec Pharm. 2015;21(4):298-305

Results

MRS patients were 1,9 more likely than non-MRS patients to visit PC providers

MRS Adults patient taking 1 o more prescribed medication were less likely to visit the urgent care than controls

J Manag Care Spec Pharm. 2015;21(4):268-305

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Does the Addition of a Pharmacist Transition Coordinator Improve Evidence-Based Medication Management and Health Outcomes in Older Adults Moving from the Hospital to a Long-Term Care Facility? Results of a Randomized, Controlled Trial

Maria Crotty, PhD, FAFRM,[1] Debra Rowett, BPharm,[2] Lisa Spurling, MSc (Pharm),[1] Lynne C. Giles, MPH, AStat,[1] and Paddy A. Phillips, DPhil, FRACP[3]

Randomized controlled trial

Patients: hospitalized older adults transfering to a long term residencial care facility for the first time

Intervention: **PHARMACIST TRANSITION COORDINATOR**

1. Medication-management transfer summaries from hospital
2. Timely coordinated medication reviews by accrediated community pharmacists
3. Case conferences with physicians and pharmacists

The American Journal of Geriatric Pharmacotherapy | *M. Crotty et al.*

Mean inappropriate medication (MAI criteria) was lower in the intervention group (2,5 vs 6,5; p=0,007)

Lower emergency department visits and hospital readmissions (RR=0,5 ; CI 95%:0,32-0,94)

The American Journal of Geriatric Pharmacotherapy | *M. Crotty et al.*

POST ACUTE CARE CLINIC

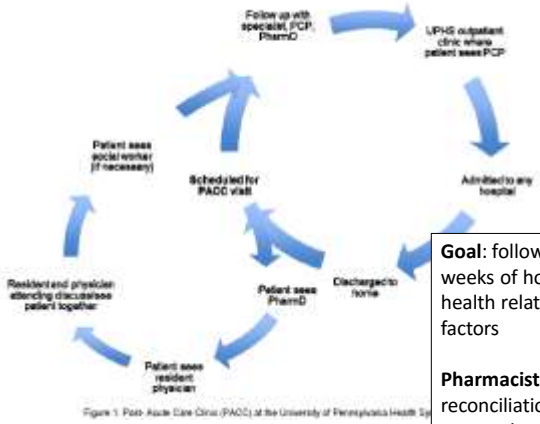


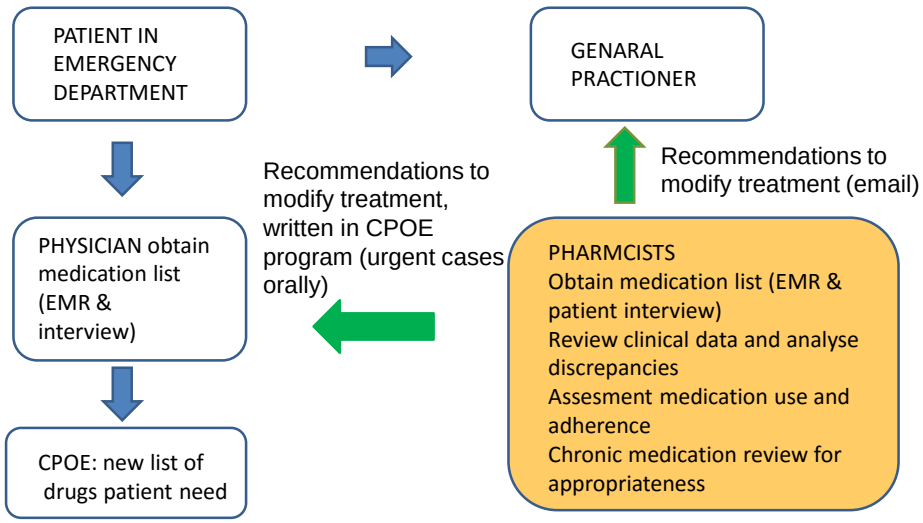
Figure 1 Post-Acute Care Clinic (PACC) at the University of Pennsylvania Health Sy

Sen S et al.Pharmacy Practice 2014; 12:439

Goal: follow up appointment with in 1 to 2 weeks of hospital discharge to resolve health related, medication or psycosocial factors

Pharmacist activities: medication reconciliation and review for appropriateness, assesment medication use and adherence, review of laboratory results

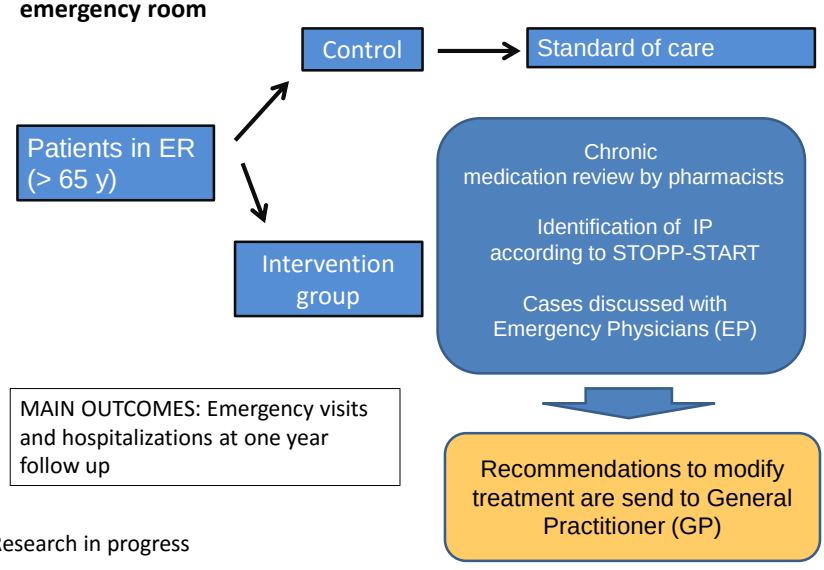
HOSPITAL UNIVERSITARIO PRINCIPE DE ASTURIAS RECONCILIATION PROGRAM



HOSPITAL UNIVERSITARIO PRINCIPE DE ASTURIAS RECONCILIATION PROGRAM: PRIORIZATION AND RESOURCES

PATIENTS IN EMERGENCY DEPARTMENT	RESOURCES
Patients in post-emergency department unit (observation) or planned hospitalization: -Older 65 years -alert diagnose -High risk medication	Monday-Friday 8.00 am-3 pm I staff pharmacist 1 pharmacist resident 1 pharmacy student Technology: Electronic medical record in emergency room Computer physician order entry Access to general practitioner electronic medical record (includes chronic medication)

Multicentric randomised study of the efficacy of a multidisciplinary health care team on morbidity and mortality in elderly patients attending the emergency room



Research in progress

CONCLUSIONS

✓Transition of care is associated with a high number of preventable medication errors.
✓Medication reconciliation is a process aimed to avoid medication errors.
✓Medication reconciliation is a very complex process.
✓Technology can help to obtain de BPML but will not substitute clinical judgment.
✓ There is a high level evidence of the benefit of pharmacist interventions in transition of care.
✓There is a need in health care systems to expand pharmacist involvement in transition of care

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LEARNING ASSESSMENT QUESTIONS

1. **The main cause of hospital related medication errors during transition of care is lack of appropiate technology**
2. **The involvement of patients in transition of care is a key point to improve safety.**
3. **Although there is a potential benefit of pharmacists interventions during transition of care, they have not been studied in randomized controlled trials.**