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Medication Reconciliation: A Current Perspective

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ABSTRACT:*The integration of health care has become a priority for health systems, especially to solve problems in chronic diseases involving multiple professionals and services.The prevalence of medication errors in relation to the medication reconciliation is a major component of safe patient care at least27% and 65% in hospitalized patientswith at least one unintentional discrepancy in the prescription.The use of medication reconciliation programmes in the routine of health professionals, helps in the analysis and clear definition of the patient record, health care professionals, computer applications that facilitates electronic medication reconciliation for hospital clinics an all care transitions and communication channels between professionals and with the patient.* ***Objetive*** *of this literature review is search about the importance of perform medication reconciliation within the hospital setting,****Methodology****: A systematic review was made in bibliographic database: (pubMed/Medline, Science Direct. EMBASE), and through the internet manually in public journals andinformationdodumented by the Word Health Organization. Each of the databases was screened papers from years 2012 to 2018.****Results****:It is essential to inform and promote the medication reconciliation among all healthcare professionals.Medication must be reconciled in all transitions of care, each time the patient changes levels of care or a new healthcareprofesional.The technological tools have been a described methodology that assure that all the information about the medicines that the patient uses on their pathology, is transmitted with clarity in order to decrease discrepancy and medication errors, that may have adverse effects that impact patient's health.The implementation of conciliation programs is a challenge for health professionals The medication reconciliation process is not an activityof judging the medical profession about pharmacotherapy decision, unlike, it is working as a team with the pharmacistand together with the patient detect and correct possible medication reconciliation errors that could have gone unnoticed at the time to be addmited to the hospital the reconciliation The medication reconciliation ideally should be done preferably by the pharmacist who has joinedin healthcare areas to care and supported by knowledge and skill of patients assessment.*

KEYWORDS:*Medical Errors, Pharmacy, Medication reconciliation*

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I. INTRODUCTION

Challenges face today´s health care system around the medication of a patient is the lack of accurate andcomplete information about his pharmacotherapy; this makes the patient vulnerable in a situation of risk of medication errors which can be visualized in an ineffective therapy, or adverse effects and avoidable hospital admissions.TheMedicationReconciliation (MR) is the process of comparing a patient's medication order, check and record the patient's usual medication, ensuring its proper use, coordinating the pathologies of the patient and their medication with the pharmacological treatment that is added to the prescriptionafter a transition in care, upon admission to the hospital, after a change of the medical officer or hospital discharge, so any discrepancy not justified by the doctor is considered a medication reconciliation reconciliation errors[1].

A Medication error (ME)is any preventable event that may cause leads to, or has the potential to lead to, harm to the patient, in the process of using inappropriate medications while the medication is in the control of a healthcare, patients, or consumer, provider as any error in the prescription, dispensing, administration, health education to the patient, therapeutic drug monitoring (TDM), monitoring of the patients medical records, labeling and preparing and managing medications and solutions.TheMRprocess, it originated due the medication

reconciliation errors (MREs),that were presented in hospitalized patients, being a reason for unplanned hospital readmissions generating an expense for the patient, so the MR is necessary during at the hospital admission, transfer and discharge of patients. The continuity of care expresses a greater satisfaction of the users, a better quality of life perceived, a greater use of preventive services, an increase in the adherence rate to treatments and a decrease in the rate of hospitalizations, the majority being related to the consumption of medications due to ME and MREs[2].

Medication error, constitute a security problem and have been signaled by organisms as the OMS, NICE, Intitute for Healthcare Improvement (IHI)or Joint Commision on Accreditation of Healthcare Organizations (JCAHO) as a priority issue within the patient safety strategy, which requires a systematic approach within organizations[2].Within the hospital environment and especially within the area of emergency medical services (EMS) exist MERs, which have been reported to lead to an increase in morbidity and mortality and this is also reflected in economic costs both to the patient and to the hospital itself.These errors occur mostly during the transitional care continuityof patients from one level of care to another or from one type of setting to another, from hospital. Clinical research studies in patients with mental illness in a psychiatric hospital, showed that the MREs, may be due in part to the lack of trained personnel such as nurses in the knowledge of patient therapy, interruptions and communication problems among health professionals, the absence of an adequate, up-to-date and accessible registry of medication patient. Other factors have also been associated to ME, such as self-medication, patients with polypharmacy and also the personal situation of the patient[3].

II. MATERIALS AND METHOD

We searched databases of articles from: (PubMed/Medline, Science, Database of Asbtracts of Reviews of Medication of Reconciliation), and through the internet manually in public journals, from 2010 to 2018 for systematic reviews for any medical errors and medication reconciliation and information documented by the Word Health Organization.

III. MEDICATION RECONCILIATION

Medical Reconciliationit is the formal and standardized process of obtaining a complete list of patient´s medication being taken in one setting with what is being prescribed to analyzed and resolving medication discrepancies found in the pharmacotherapyacordingto patients pathology, this medication reconciliation term was defined in a document called Consensus document on terminology and classification of medication reconciliation[4].

The MRaims to process and classification of discrepances, duplications o interactions, between chronic and hospital treatment, which should be discussed with the doctor for their professional opinion and if a change in drug treatment, modify the patient's medical prescription, this action will be has implemented as a tool to avoidMERs. The discrepancy is understood as any difference between the medicine, the patient, and the prescription of medical care, but no error is required. Lenhbom y col.showed that patients have at least one discrepancy in the medication in the hospital transition phase, the most common being the omission of medication[5].Literature reviews reporting different professional disciplines, they showed that the largest number of discrepancies was committed by the admission nurses, followed by the certified pharmacy technician and finally the pharmacist.

In a study conducted to MR it was shown that 66 % of MREs they are due to the hospital transitions that the patient makes during their stages of illness. Additional searches were carryouton admitted patients to hospital, showed that 50% of unintended medication discrepance occur between the medication that the patient was taking before admission and in-hospital prescription (MREs).It is interesting to note that slightly higher discrepancy rates may occur during intrahospital transitions, and discrepancies are observed in at least 40% of patients at hospital discharge.

There are several causes that lead to the appearance of MREs such as concomitant diseases where the patient presents a poly-medication, the absence of unified health records, the type of care units, the transition considered, the adaptation of the usual medication to the pharmacotherapeutic guide and the characteristics of the hospital stay. A study by Nuñez et al., (2015)indicates that one of the populations most sensitive to ME are polymedicated patients or those who self-medicate[6]. The decrease in ME may be due to the implementation of the reconciliation of medicines in both hospital and community pharmacies, this being a service that can be offered by the pharmacist[7],[8].In another study conducted in 2016, shows that MREs were 23.4% in admission and 22.5% at discharge, where all patients who were reconciled in their medication upon discharge from hospital were given a sheet of medication information[9].In other recent studies on reconciliation, we show that it is necessary to create and maintain a correct list of medications for each patient, representing a fulfillment of the responsibility of physicians and all health personnel[10].In a prospective observational study conducted in patients with diabetes disease where they are patients who present a polymedication, the MR reveals that one third of the treated patients have MREs[11].

IV. CONCILIATION PROCEDURES

The formal conciliation process consists of assessing the complete and informed list of the medication. But how can this act of conciliation be carried out? There are different ways to perform MR, for example through the clinical interview or through your patient's clinical history. And who are the ones in charge of carrying out this activity? Those responsible for this activity are doctors, nurses and clinical pharmacists, preferably for the time it takes to search for information on pharmacotherapeutic therapy linked to the clinical and biochemical history of each patient's clinical history[12].

It has been observed that the reconciliation of medications in the transitions of attention diminishes the MREs, the hospitalizations and an adverse reaction to the medicine (ADR), which cover 25% within the MREs[13].An ADR is an injury caused by taking a medication, may occur following a single dose or prolonged administration of a drug or result from the combination of two or more drugs. There are 400,000 events a year in the United States, and they cause around 7,000 annual deaths, generating financial costs of 3.5 million dollars[14].Therefore, adverse drug events, potential adverse drug events, as well as medication errors can be collected by extracting data from the practice, requesting incidents from health professionals and conducting patient surveys. These data include graphs, laboratory data, prescription data, and administrative databases, which can be reviewed both manually and in a computer system in order to identify ME and MERs[15.]

There are technical methods and reports to perform a MR procedure such as comparative evaluation, which consists of a proper technique in marketing where a comparison is made between the practice and development of several competitors and partners, in such a way that the practice becomes more efficient, having like objective the improvement of the services supported in the search of discrepancies of conciliation like omissions, interactions, duplicities among others[16,17]. Another method is the Twinlist, which consists in distributing the medicines in five columns according to their similarity, using animations to present the grouping of the drugs, providing faster and more accurate results[18].The conciliation of medicines can also be carried out through a file made by a pharmacist or health personnel, where a file about the conciliation is made through an interview with the patient, later this information goes to a softward called Pharma, this softward turned out to be a very efficient tool, as demonstrated in a study applied in hospitalized patients, which helped to reduce unintentional errors[19]. Another technological tool is Drug Discovery maps that has been very useful in visualizing the target and ligand of drugs. The clinical use of these tools as support in the decisions of medications must be made with caution[20,21].

Howeverthere are problems in the application of these tools of assisted technology by health professionals. It has been reported that time is a factor that prevents them from using it, as well as the physical space where pharmacotherapeutic studies are carried out and the competences of organizational competence in the workplace[22,23.]

V. RECONCILIATION AND DRUG INTERACTIONS

Reconciliation of medicines in emergency services.

Medicines are the most used therapeutic tool by health personnel in the fight against diseases, these imply the search for the improvement of health and the healing of the patient. The patients are medicated during the pharmacological therapy with several medications and with this the drug interactions arise.The risk and severity of the interactions depend on different factors such as the number of medications prescribed, the duration of the treatment, the age of the patient, the state of the disease, it has been shown that 72% of the discrepancies in the medication occur due to ME in the clinical history of drugs during hospital admission[24]. There is a method to identify drug interactions based on a classification algorithm known as the Haynes model, it is a database that is effective given its simplicity[25]. Timothyet al., (2017), in their research showed that poor adherence to medication regimens and inconsistencies in medical records result in incomplete knowledge of drug therapy in patients who are under a therapeutic polypharmacy regimen, this was achieved by quantitatively identifying most medicines in the blood of patients[26,27].

In a study conducted in Italy by Raschi et al., (2015),it was observed that in patients older than 65 years where they were attended by the health team working in the MR, especially in the drugs with interaction potential in each of the patients they were under polypharmacy, they reduced drug-drug interactions principally related to NSAIDs[28]. On the other hand, another study showed that most of the pharmacological interactions were moderate or severe, showing that interactions prevail with a higher percentage in the intensive care unit (ICU), due to the complexity of pharmacotherapy administered that is associated with the number of medications, length of stay and the physicochemical characteristics of the medications administered[27].

In the search for drug interactions, medication reconciliation (MR) is an important process for detecting these drug-drug-food interactions, and is designed to prevent medication errors (ME) at the patient's transition points. From a complete and accurate list of the patient's previous medication and compare it with the medical prescription after the care transition. If there were discrepancies, the modification of the medical prescription should be considered to finally communicate the new reconciled list to the next responsible person

in the patient's health and to the patient himself. The main objective of the conciliation is to ensure throughout the process of health care that patients receive all the necessary medications that they were previously taking, with the correct dose, route and frequency and appropriate to the current situation of the patient, as well as the new prescription made by the hospital.TheMR is necessary to do it whenever there is a change of patient's responsibility and there is an update of the treatment, in order to eliminate the errors derived from the failures in the communication of the patient's pharmacological treatment. In the process as such it must have the participation of the patient or the person in charge, whenever possible, in order to assess the adherence to the medication[25].

The conciliation process must present a maximum time: for high-risk medicines it must be 4 hours and 24 hours for the rest of the medicines, taking into account the withdrawal syndrome, which occurs when the drug is suddenly withdrawn administration of a certain medication, for example some medications that are very present in the emergency services and that have to take into account their assessment are: Antibiotics, non-steroidal anti-inflammatory drugs (NSAIDs) and antirheumatic therapy, cardiovascular therapy, antithrombotic, respiratory therapy, therapy hormonal, antidiabetic therapy, drugs on the central nervous system (CNS), oral cytostatics, immunosuppressants and corticosteroids, HIV therapy, eye therapy, as well as oral contraceptives, natural products that do not require a medical prescription; Within this list of medications that must have a time of conciliation less than 4 hours are antibiotics, antiarrhythmics, antiepileptics (phenytoin, carbamazepine, valproic acid, oxocarbazepine, phenobarbital), antiretrovirals, betaadrenergic receptor agonists, allylic antagonists, cyclophosphamide, Angiotensin Converting Enzyme(ACE) or Angiotensin ReseptorBlokers (ARBs)-II, leukotriene inhibitors (monteluzak), insulin, methotrexate, nitrates, ocular therapy andinhaled costicosteroids[29].

VI. TYPES OF MEDICATION RECONCILIATION

Adults older than 66 years and more are the most vulnerable to having medication errors due to a higher life expectancy. They present a greater number of chronic diseases, therefore, they are under a polypharmacy regime for their treatment[3]. Inappropriate drug prescriptions in older adults may have risks of adverse events due to changes in aging that enhance the effect of both therapeutic and toxic drugs and exceed the expectations of clinical benefits over other, more effective, safe therapies. It has been observed in applied studies that the inappropriate prescription of drugs is associated with a higher probability of morbidity, hospitalization and mortality[30].

The importance of reconciling medicines throughout the process of health care is that patients receive all necessary medications during their hospital stay, not forgetting that the reconciliation must be carried out whenever there is a change of health personnel that attends to the patient and there is an update of the treatment, so that the conciliation process must present a maximum time as an example for high risk medications must be four hours and 24 hours for the rest of the medications. Table 1 shows some examples of high-risk medications and the data and information on medications that should be searched in scientific literature and databases. The American Pharmacists Association (APhA) and the American Society of Health-Systen Pharmacists (ASHP), each organization work together in the MR, and ASHP believes that an affective process for medication reconciliation reduces medication error and supports safe medications use by patients[31,32].

The pharmacists should assume a pivotal rol in collaborating as a team with other health care professionals on medication reconcilations processes, as a training and assuring the continuing competency of those involved in medication reconciliation (residents, physicians and nurse), providing therapeutic expertise in the development of information systems that support medication reconciliations, also offer medication reconciliations programs in the community and patient education medication adherence[,33,34].

Table No.1: Important medications that must be taken into account in the first four hours. BP: blood pressure; HR: heart rate; ALT: alanine aminotrasferase; ACE inhibitors: angiotensin-converting enzyme inhibitors; FG: glomerular filtration; CK: creatine kinase; MAOIs: monoamine oxidase inhibitors; CCR5: Type 5 receptor chemokine.[29].

Non-steroidal anti-inflammatory drugs (NSAIDs) and antirheumatic therapy	
Methotrexate	
Reconciliation time	First 4 hours
Withdrawal syndrome	No
Variables to be monitored	Monitor: Neutropenia, kidney and liver failure, folic acid deficit Folic / folinic prescription is recommended: at low doses of methotrexate (rheumatoid arthritis) folic acid 5 mg or folinic acid 7.5-15 mg c / week should be administered the day after methotrexate Side effects: Folate deficiency, thrombocytopenia, neurotoxicity, hepatitis, pulmonary fibrosis, gastrointestinal toxicity
Cardiovascular Therapy	
Antianginal and antihypertensive: nitrates, beta-blockers, calcium antagonists	
Reconciliation time	First 4 hours
Withdrawal syndrome	Yes. Abrupt discontinuation (12-72 h) of beta-blockers can cause acute withdrawal syndrome (angina, rebound hypertension). Some patients experience an increase in the frequency and severity of angina

	when treatment with calcium antagonists and nitrates is interrupted abruptly
Variables to be monitored	Monitor: Blood Pressure (BP), Heart Rate (HR) Side effects: Bradycardia, hypotension Contraindicated drugs: Nitrates from the group of 5-phosphodiesterase inhibitors (sildenafil, tadalafil, vardenafil) due to increased risk of hypotension
Antiarrhythmics: amiodarone, quinidine, disopyramide, dronedarone	
Reconciliation time	First 4 hours
Withdrawal syndrome	No
Variables to be monitored	Monitor: Heart Rate. Electrocardiogram. Blood pressure. Thyroid function (amiodarone). Pulmonary function. Liver function: alanine aminotransferase. Hemogram: agranulocytosis, thrombocytopenia Side effects: Amiodarone: bradycardia, pulmonary fibrosis, hyperthyroidism, hypothyroidism, hepatitis, hypotension mainly concomitant with class I antiarrhythmics, aplastic anemia (quinidine), creatinine increase and prolongation of QT interval (dronedarone) Contraindicated drugs: Amiodarone: Protease inhibitors (PI) due to increased amiodarone toxicity (hypotension, bradycardia). Ziprasidone, pimozide and posaconazole for increased cardiotoxicity (prolongation QT interval and torsade de pointes). Quinidine: dronedarone, azoles, pimoizide, IP, ranolazine and ziprasidone due to increased cardiotoxicity (exacerbation of heart failure, prolongation of the QT interval and torsade de pointes). Dronedarone: macrolides, quinolones, azoles, IP, antipsychotics, tricyclic antidepressants, domperidone, serotonin receptor antagonists, methadone, verdenafilo, flecainide, sotalol and quinidine due to increased cardiotoxicity (prolongation of QT interval and torsade de pointes); Disopyramide: dronedarone, macrolides, pimozide, quinine and ziprasidone due to increased cardiotoxicity (prolongation of QT interval, torsade de pointes, cardiac arrest)
ACEI and ARBs-II	
Reconciliation time	First 4 hours if multiple daily doses, if not reconciled the first 24 hours
Withdrawal syndrome	No
Variables to be monitored	Monitor: PA, kidney function, monogram, hypoglycemia in diabetics (ACEI) Side effects: Hyperkalemia, decreased glomerular filtration rate (GFR), angiodema (mainly ACEI)
Alpha-adrenergic agonists (clonidine, methyldopa, moxonidine)	
Reconciliation time	First 4 hours
Withdrawal syndrome	Yes. His withdrawal with dangerous rebound hypertension
Variables to be monitored	Monitor: Blood Pressure Contraindication in orthostatic hypotension Side effects: Clonidine for orthostatic hypotension. Methyldopa: sedation, mental clumsiness, parkinsonism, hepatitis (reversible), hemolytic anemia, leukopenia, thrombocytopenia, pancreatitis.
Respiratory therapy	
Beta-adrenergic agonists, ipratropium bromide and inhaled corticosteroids	
Reconciliation time	First 4 hours
Withdrawal syndrome	Yes. Suspension presents a risk of bronchospasm
Variables to be monitored	Monitor: technical administration. Replacement by nebulizations can be considered if the patient can not inhale properly Side effects: Beta agonists: headache, tremor, palpitations, muscle cramps. Bromide ipratropium: headache, cough, pharyngitis, paradoxical bronchospasm, gastric motility disorders. Caution in patients with narrow angle glaucoma predisposition. Inhaled corticosteroids: oropharyngeal candidiasis (water rinses, bicarbonate), pneumonia, bronchitis, headache
Hypoglycemic agents	
Oral antidiabetics (OAD)	
Reconciliation time	Hypoglycemic agents with daily doses reconcile first 4 hours, if not reconcile first 24 hours
Withdrawal syndrome	No. You can retire for 5-6 days. In emergencies if OAD is not prescribed it is important to fast rescue insulin regimen
Variables to be monitored	Monitor: Glicemia, renal function Adjust according to FG: If FG <50 ml / min / 1.73 m2 discontinue treatment: vildagliptin; sitagliptin If FG <30 ml / min / 1.73 m2 discontinue treatment: metformin; glibenclamide; gliclazide; glimepiride; glipizide; acarbose (FG <25 ml / min / 1.73 m2), exenatide. Repaglinide: does not require dose adjustment Side effects: Hypoglycaemia, gastrointestinal disorders, lactic acidosis (metformin)
Insulin	
Reconciliation time	First 4 hours
Withdrawal syndrome	No. In the first moment you can change slow insulin for fast but after adjusting
Variables to be monitored	Monitor: Glicemia Side effects: Hypoglycemia
Antiepileptics and anticonvulsants	
Antiepileptics and anticonvulsants (phenytoin, carbamazepine, valproic acid, oxcarbazepine, phenobarbital, pregabalin, topiramate)	
Reconciliation time	First 4 hours
Withdrawal syndrome	Yes. Abrupt suspension can precipitate epileptic seizures (except with valproic acid and topiramate)
Variables to be monitored	Monitor: Ensure therapeutic concentrations of antiepileptics and anticonvulsants. Therapeutic margin phenytoin: 10-20 mcg / mL. Decrease phenytoin levels when administered through a nasogastric tube. Therapeutic margin carbamazepine: 4-12 mcg / mL. Therapeutic margin valproic acid: 50-100 mcg / mL Side effects: Hyponatremia (carbamazepine, oxcarbamazepine), anemia, cognitive impairment (phenobarbital), increased CK (pregabalin), pancreatitis (valproic acid), kidney stones, closed angle glaucoma (topiramate)

	Contraindicated drugs: Phenytoin: praziquantel (decreased plasma concentrations of praziquantel), ranolazine (decreased plasma concentrations of ranolazine), dronedarone (decreased plasma levels of dronedarone). Carbamazepine: Dronedarone (decreased plasma levels of dronedarone), MAOIs (increased plasma concentrations of MAOIs), praziquantel (decreased plasma concentrations of praziquantel); ranolazine (decreased ranolazine plasma concentrations); voriconazole (decreased plasma concentrations of voriconazole and increased plasma concentrations of phenytoin). Phenobarbital: dronedarone (decreased plasma levels of dronedarone), praziquantel (decreased plasma concentrations of praziquantel), ranolazine (decreased plasma concentrations of ranolazine), voriconazole (decreased plasma concentrations of voriconazole)
HIV therapy	
Antiretroviral	
Reconciliation time	First 4 hours
Withdrawal syndrome	No
Variables to be monitored	Monitor: Renal function, liver function Side effects: Inverse nucleoside and nucleoside reverse transcriptase inhibitors: lactic acidosis, hepatic steatosis, proteinuria (tenofovir). Non-nucleoside reverse transcriptase inhibitors (NNRTIs): rash, increased transaminases, neuropsychiatric symptoms (efavirenz), acute hepatitis (nevirapine). Protease inhibitors: gastrointestinal intolerance, transaminase increase, dyslipidemia, hyperglycemia, hyperbilirubinemia (atazanavir). CCR5 inhibitor: gastrointestinal intolerance. Integrase inhibitors: diarrhea, headache. Inhibitors fusion: headache Contraindicated drugs: Protease inhibitors: amiodarone, terfenadine flecainide, pimozide, ranolazine, quinidine, (increased cardiotoxicity: ventricular arrhythmias, QT prolongation, torsade de pointes, cardiac arrest); simvastatin, lovastatin (myopathy, rhabdomyolysis); colchicine (increased plasma concentrations colchicine); voriconazole (decreased plasma concentrations of voriconazole), midazolam (increased sedation, respiratory depression); eplerenone (increased plasma concentrations eplerenone), ergotamine (increased ergotamine toxicity). Non-nucleoside reverse transcriptase inhibitors: midazolam (increased sedation, respiratory depression); pimozide (increased arrhythmias), ergotamine (increased ergotamine toxicity)

VII. MEDICATION RECONCILIATION IN THE PERSONALIZED MEDICINE

Personalized medicine (PM) performs an adequate diagnosis to give a treatment according to the physiopathological and molecular characteristics of the patient's disease, trying to avoid the appearance of side effects in order to achieve therapeutic success; for the performance of the PM it is necessary to take the characteristics of a susceptible population group or with a different epidemiological profile in order to prevent, detect diseases, propose the best treatment and that the dose is optimal and effective, contributing to the quality of life and of course reduce the cost of health care.

Some alternatives to know the population and apply PM are through the application of pharmacogenetics and pharmacogenomics that study genes involved in the metabolism of a drug, these sciences are currently necessary and in the search for the biological and genetic bases have led a predictive model of the disease for the development of specific drugs to reduce side effects and that adapt to the needs of the patient for the treatment to be effective. However, it is proposed to know the whole environment and the social environment, because even the weather can affect the course of the disease; as epigenetics studies it[35.]

The process of therapeutic adaptation must begin before the prescription process taking into account Does the patient need to start treatment? Is there an effective non-pharmacological alternative? What is the most effective or safest drug? Is this drug suitable in the specific circumstances of this patient?[36].There is potentially inappropriate prescription (PIP) in a patient where it has significant clinical, humanistic and economic impacts. A promising set of detection tools are the criteria (STOPP) which are software tools for the evaluation of potentially inappropriate prescriptions and (START) which are tools for the evaluation of the alert for medical use for the adequate treatment of the patient[37,38].

It is necessary new technologies to improve healthcare processes[39], more research is needed in how best to implement and integrate these tools into clinical workflows[40].Marthur and Sutton, (2017) intheir study they mentions that from the perspective of the patient, personalized medicine is related to the management of the disease and to the desire of the physician to concentrate on his needs and for the doctors, the personalized medicine refers to the adequate orientation of the treatment with the patient involved during the process and making decisions through informed consent all is about it clinical information[41], also is necesary to indentifying genetic, epigenomic to allows how a person´s unique genomic portofolio makes them unique for specific diseases and how respond for a unit dose medication[42].

VIII. CONCLUSION

Pharmacists together with all health professionals play an important role in the prevention, detection and management of MR drugs, in order to reduce ME, in the healthcare transitions that the patient goes through in his illness. The MERs are presented due to the intervention of multiple members of the health from residents, physicians, nurses, nutriologistswho attend to the same patient in 24 hours in their polymedicationapplied to

multiple pathologies, this appearance of MERs is reflected in the lack of communication between health professionals,lack of data bases of medication-patient-conciliation information, lack of personalized medicine and by the patient self-medication not communicated to health personnel.Pharmacists should provide information about medication reconciliation to health care providers, patients, and the community, and they should evaluate the effectiveness of these advocacy efforts on the medication reconciliation process. The famaceutic industries should offer training courses to students of medicine, pharmacy, dentistry, nutrition for adequate information of the drugs they are manufacturing and be able to better understand the reconciliation of medicines, the realization of tables of information on drug interactions in both Hospitals such as clinics and pharmacies would be of great help, in order to maximize the therapeutic effects of medications, reducing adverse effects and therapeutic monitoring.

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