

**Manual of instructions****TOOL DESCRIPTION**

- The DEPICT aims to identify in details the components that characterize a clinical pharmacy service. This version has 146 variables grouped into 11 domains. From these, 142 items were designed as dichotomous variables (yes/no) and four items as discrete variables.
- The DEPICT can be retrospectively applied in articles that report clinical pharmacy services, as a checklist to design study protocols of pharmacist intervention or to describe pharmacist's interventions in reports.
- The DEPICT is designed to characterize a singular clinical pharmacy service. If a study report describes two or more clinical pharmacy services that were tested, than two or more forms of DEPICT must be completed as needed. This applies to studies which compare one or more interventions or control arms.
- DEPICT is applied only to pharmaceutical interventions. Thus, studies that encompass activities that not constitute pharmaceutical intervention, as only educative material delivery, include only variables belonging to the domains 1,2,3,4 and 8. Once the intervention can be provided to the patient/caregiver and/or to the health care professional (HCP), the variables belonging to the other domains (5,6,7,9,10 and 11) can be checked when there are intervention focused on the patient and not on HCP and vice versa. For example, the pharmacist can evaluate the drug selection (5.01), medication effectiveness (5.02) and medication safety for suggest to HCP changes in patient's therapy and not provide any intervention to the patient.

**GENERAL INSTRUCTIONS**

- Check the cells which correspond to the pharmacist's interventions components. A checked cell represents "Yes". An empty cell represents "No or Not Reported".
- The first step is to identify the recipient(s) of the clinical pharmacy service. The recipient(s) is(are) the one who pharmacist has contact (patient / caregiver; health care professional) as part of the service. For example, if pharmacist performs a counseling session with a patient and sends a report to patient's physician, both the patient and physician are considered recipients of the service. On the other hand, if pharmacist evaluates a physician's prescribing patterns and provides feedback through drug information, the recipient of the service would be the physician. In this case, pharmacist may evaluate patients' prescriptions, but the service is not intended directly to the patients. Therefore, if the recipients of the service are only patients or caregivers you must mark the cell A.0. If the recipients of the service are

health care professionals, you must mark cell B.0. If both patients/caregiver and HCP are recipients of the service, you must mark the two cells.

## **ITEM-SPECIFIC INFORMATION**

### **1. CONTACT WITH RECIPIENT**

How the contact with the recipient occurs as part of the clinical pharmacy service.

#### **1.01 One-on-one contact**

Direct communication between pharmacist and recipient in a private and individual manner.

#### **1.02 Contact with group**

The pharmacist is in contact with more than one recipient while performing the intervention.

### **2. SETTING OF THE INTERVENTION**

The place where the recipient received the clinical pharmacy service.

#### **2.01 Community Pharmacy**

Community pharmacy is a community-based retail pharmacy. It may include an independent pharmacy, a supermarket pharmacy, a chain pharmacy, or a mass merchandiser pharmacy able to dispense medications to the public. Community pharmacy does not include nursing home pharmacies, long-term care facility pharmacies, hospital pharmacies and clinics.

#### **2.02 Hospital bedside**

Hospital bedside is the term here used to define the hospital environment where pharmacists, inpatients, caregivers and health care professionals can interact with each other. This is not simply the location near or at the side of a patient's bed but also shared spaces. Hospital bedside does not include locations such as hospital pharmacy, emergency department, HCP offices, classrooms, auditoriums, and ambulatory care settings located within the hospital building.

#### **2.03 Emergency department**

Emergency department is a section of a health care facility that is staffed and equipped to provide rapid and varied emergency care, especially for those who are stricken with sudden and acute illness or who are the victims of severe trauma. Also called an emergency room.

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier)*

#### **2.04 Hospital pharmacy**

The hospital pharmacy is the department and location responsible for the receiving, storing, and distribution of pharmaceutical supplies. This term includes long-term care facility pharmacies and

**Manual of instructions**

infusion pharmacies. Infusion pharmacies are licensed pharmacies that provide nutritional support, supplies, infusion pumps, or comprehensive infusion therapy management.

*(The American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company. Updated in 2009. Published by Houghton Mifflin Company)*

*(National Library of Medicine - Medical Subject Headings. 2012 Mesh. Pharmacy Service, Hospital. Available at: <http://www.ncbi.nlm.nih.gov/mesh/68010607>)*

**2.05 Ambulatory/Primary care setting**

The outpatient-based healthcare, including diagnosis, observation, treatment and rehabilitation services, is called ambulatory care. It includes health services provided to those who visit, on the same day, a hospital or another health care facility and leaves after treatment. An ambulatory care or primary care setting may include an ambulatory pharmacy responsible for dispensing medications to outpatients, in a co-location model.

Co-location occurs when pharmacy and medical practices are in same healthcare center. It implies that pharmacists have direct access to physicians or other providers in order to share information and to discuss patient-specific cases. It can occur in ambulatory settings linked to a hospital, multidisciplinary clinics, general medical practices, hemodialysis clinics and other settings.

Primary care is provided by practitioners specifically trained for and skilled in comprehensive first contact and continuing care for persons with any sign, symptom, or health concern not limited by problem origin, organ system, or diagnosis. A primary care practice serves as the patient's first point of entry into the health care system and as the continuing focal point for all needed health care services. Primary care can be provided, for example, in community health centers.

*(American Academy of Family Physicians. Primary Care. <http://www.aafp.org/online/en/home/policy/policies/p/primarycare.html>)*

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier)*

*(Jesson, Jill K, and Keith a Wilson. 2003. One-stop health centres: what co-location means for pharmacy. Health & place 9 (3) (October): 253-61)*

**2.06 HCP office**

A place in which business, clerical, or professional activities are conducted by health care professionals.

This item should be considered when the contact between pharmacist and another health professional is remote. For example, when pharmacist suggests modifications to patients' treatment

by letter, e-mail or telephone; unless it is not clear that the health professional is in another health care facility (e.g.: an ambulatory in a different institution).

*The American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company. Updated in 2009. Published by Houghton Mifflin Company. All rights reserved.)*

### **2.07 Recipient's home**

Home is a residence, the place where the recipient lives. Clinical pharmacy services that include medication mail order, home care visits, telephone calls from the pharmacist to the recipient should be checked in this item.

### **2.08 Nursing home / Long-term care facility**

Long-term care facility is a private establishment that provides living quarters and care for the elderly or the chronically ill. It is a facility that provides rehabilitative, restorative, and/or ongoing skilled nursing care to patients or residents in need of assistance with activities of daily living. Long-term care facilities include nursing homes, rehabilitation facilities, inpatient behavioral health facilities and long-term chronic care hospitals.

*(The American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company. Updated in 2009. Published by Houghton Mifflin Company)*

*(Medicinenet.com. MedTerms. Available at: <http://www.medterms.com/>)*

### **2.09 Public places / Classrooms**

A public place is a location that has public access as in a mall, park, auditorium, square, etc. A classroom is a room in which classes are conducted, especially in a school or college.

*(Collins English Dictionary – Complete and Unabridged © HarperCollins Publishers 1991, 1994, 1998, 2000, 2003)*

### **2.10 Other setting clearly stated, not previously included**

Cases in which the pharmacist's service was provided in another health care facility that does not fit in the above items.

## **3. FOCUS OF INTERVENTION**

Characteristics of the patient who benefits indirectly or directly from the intervention.

### **3.01 On a specific medical condition**

An intervention which is provided to the recipient based on a pre-defined medical condition. A medical condition is a medical problem that needs to be treated or managed. It can be a disease,

**Manual of instructions**

illness, or injury. For example, a clinical pharmacy service provided only to hypertensive, diabetic, obese or pregnant patients.

**3.02 On a specific medication class, pharmacological class, or dosage form**

Intervention provided regarding one or more specific medications, pharmacological classes or dosage forms. For example, a clinical pharmacy service provided only to patients in use of non-tricyclic antidepressants or oral dosage forms of antibiotics.

**3.03 On a pre-specified sociodemographic patient's characteristics**

Intervention provided regarding a healthcare need identified with a specific patient sociodemographic characteristic. It can be related to their age, race, gender, culture, or socio-economic status. For example, a clinical pharmacy service provided only to elderly, Hispanic or only patients with low health literacy.

**3.04 Without restrictions**

Intervention was available to any patient/caregiver and/or HCP.

**4. CLINICAL DATA SOURCES**

Where the pharmacist obtains the information for patient assessment. The clinical information is always in relation to a specific patient and can be obtained from different sources.

Do not consider the items included in this domain whether the sources of information were only used to evaluate outcomes.

**4.01 Drug prescription orders**

An order for the preparation and administration of a medicine, therapeutic regimen, assistive or corrective device, or other treatment.

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**4.02 Pharmacy records**

Pharmacy records are the refill prescriptions records of computerized pharmacy systems. Data from the pharmacy records for each dispensed prescription drug can include the name of the drug, the dosage regimen, the prescriber, the dispensing date and the amount dispensed.

*(Steiner, J F, and A V Protozoa. 1997. The assessment of refill compliance using pharmacy records: methods, validity, and applications. Journal of clinical epidemiology 50 (1) (January): 105-16.)*

#### **4.03 Point-of-care testing**

Point-of-care testing are analysis of clinical specimens performed as close as possible to the patient as part of the clinical service in settings like community pharmacies, bedside, ward–unit, or 'stat' regional response labs that service specified areas such as the emergency department or intensive care unit. These are devices available for testing disease states including diabetes (fast glucose), hypertension (blood pressure), hyperlipidemia (cholesterol), asthma (peak flow meter or portable spirometer device), and coagulation (INR).

You must consider item 4.07 when pharmacist or another healthcare professional measures not only the patient's blood pressure, but also vital signs, such as heartbeats per minute, respiratory rate, body temperature and weight.

It is not necessary that the tests are exclusively performed by pharmacists. Nurses can independently measure patients' blood pressure, so pharmacists may only collect reported clinical data.

*(Gutierrez SL, Welty TE. Point-of-care testing: an introduction. The Annals of pharmacotherapy. 2004 Jan;38(1):119–25)*

*(McGraw-Hill Concise Dictionary of Modern Medicine. © 2002 by The McGraw-Hill Companies, Inc.)*

#### **4.04 Medication list or brown bag data**

A medication list is a summary of medications that a patient is currently taking. Brown bag data is compiled by a patient providing all their medication vials or supplies to establish a complete history of their medication use. It is also called patient's medication profile card.

This item should be considered only when there is a declared medication list or when the patient takes the bottles of medications to the pharmacist visit.

Do not consider this item in the cases in which the patient's medications are provided only by a clinical interview (consider item 4.10).

#### **4.05 Patient self-monitoring data**

Disease self-monitoring is a form of self-care. Self-care is the performance by the patient of activities or tasks traditionally performed by professional health care providers. Disease self-monitoring data is the collection of signs or symptoms of a disease by the patient, usually, with a help of a health diary or a point-of-care test device. As an example, blood glucose self-monitoring is the self-evaluation of whole blood glucose levels outside the clinical laboratory. A digital or battery-operated reflectance meter may be used.

**Manual of instructions**

*(Gutierrez SL, Welty TE. Point-of-care testing: an introduction. The Annals of pharmacotherapy. 2004 Jan;38(1):119–25)*

**4.06 Adherence measuring tools**

Adherence measuring tools may include drug therapy monitoring, pill counts, validated questionnaires, electronic medication monitors (i.e. MEMS) or medication diary. Medication Event Monitoring Systems (MEMS) are standard pill bottles or pill organizers with microprocessors in the cap to record every opening as a presumptive dose.

This item (4.06) does not include direct methods of measures of adherence such as therapeutic drug monitoring (measurement of concentrations of a drug or its metabolite in blood or urine) and a biologic marker plasma detection added to the drug formulation. This must be considered in the item 4.09 (Laboratory tests). Likewise, this item does not include methods of measurement of adherence such as asking the patient or caregiver about how easy it is for the patient to take prescribed medication without the use of a standardized questionnaire (consider item 4.10 – patient interview), assessing clinical response (consider items 4.07, 4.08 or 4.09), ascertaining rates of refilling prescriptions or medication possession ratio (consider item 4.02 – pharmacy records), and measuring physiologic markers (consider items 4.07 or 4.09).

*(Osterberg L, Blaschke T. Adherence to medication. The New England journal of medicine. 2005 Aug 4;353(5):487–97.)*

*(Cramer JA, Mattson RH, Prevey ML, Scheyer RD, Ouellette VL. How often is medication taken as prescribed? A novel assessment technique. JAMA: the journal of the American Medical Association. 1989 Jun 9;261(22):3273–7.)*

**4.07 Physical / Functional assessment procedure or test**

A physical assessment is part of the health assessment performed by a professional and represents a synthesis of the information obtained in a physical examination. It involves the detailed examination of the body from head to toes using techniques of observation/inspection, palpation, percussion, and auscultation. A physical examination involves a systematic and thorough inspection of the patient for physical signs of disease or abnormality. It usually include the evaluation of vital signs, which are indicators of body function, usually meaning heartbeats per minute, respiratory rate, blood pressure, body temperature and weight.

A functional assessment is an objective review of an individual's mobility, transfer skills, and activities of daily living, including self-care, sphincter control, mobility, locomotion, and communication. It is used to establish a baseline, to predict rehabilitation outcomes, to evaluate

therapeutic interventions, and for standardizing communication for research purposes.

This item should be considered when the pharmacist really performs a physical evaluation of patients, by measuring vital signs, weight, abdominal circumference, ambulatory pulmonary assessment (peak flow meter) and/or blood pressure. In cases which the pharmacists assess only patients' weight and height, for example, this item should be also considered. Consider item 4.03 (point-of-care testing) when only blood pressure and/or fast glucose is tested.

*(Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, Seventh Edition. © 2003 by Saunders, an imprint of Elsevier, Inc. All rights reserved)*

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier)*

#### **4.08 Cognitive / Mental / Psychiatric tests**

This item includes tests such as the Mini Mental State Examination (MMSE), health literacy tests, and those related to psychometric evaluations.

#### **4.09 Laboratory tests / Therapeutic drug monitoring**

Laboratory test is a procedure, usually conducted in a laboratory, that is intended to detect, identify, or quantify one or more significant substances, evaluate organ functions, or establish the nature of a condition or disease, e.g., lipids profile, glycemia, creatinine, etc.

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier)*

Therapeutic drug monitoring consist in the regular measurement of serum levels of drugs requiring close 'titration' of doses in order to ensure that there are sufficient levels in the blood to be therapeutically effective, while avoiding potentially toxic excess.

*(McGraw-Hill Concise Dictionary of Modern Medicine. © 2002 by The McGraw-Hill Companies, Inc.)*

#### **4.10 Patient interview (not including assessment procedures or tests)**

Patient interview is a systematic dialogue with a patient (or his/her family or caregiver). It aims to obtain information that can be used to develop an individualized care plan. Clinical interviews usually include an anamnesis, that is the accumulated data concerning a medical or psychiatric patient and the patient's background, including family, previous environment, experiences, and particularly, recollections, for use in analyzing his or her condition.

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier)*

#### **4.11 Medical records**

Medical record is part of a client's health record that is made by physicians and is a written or

**Manual of instructions**

transcribed history of various illnesses or injuries requiring medical care, inoculations, allergies, treatments, prognosis, and frequently health information about parents, siblings, occupation, and military service. It is usually a chronological written record of a patient's examination and treatment that includes the patient's medical history and complaints, the physician's physical findings, the results of diagnostic tests and procedures, and medications and therapeutic procedures.

Medical records may include a hospital chart. A hospital chart is a type of medical record that documents the course of a patient from the moment of admission to a hospital to the time of discharge.

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier)*

*(McGraw-Hill Concise Dictionary of Modern Medicine. © 2002 by The McGraw-Hill Companies, Inc)*

**4.12 Discharge or referral letter**

A discharge letter is a clinical report prepared by a physician or other health professional at the conclusion of a hospital stay or treatments. It outlines the patient's chief complaint, the diagnostic findings, the therapy administered, and the patient's response to it, and recommendations on discharge.

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier.)*

**4.13 Direct contact with HCP**

Communication with a HCP, in an individual manner, either in-person or remotely.

**4.14 Aggregated clinical databases / Alert systems**

System that analyzes population data and trends to send messages and alerts to HCP regarding their patients, such as Targeted Intervention Programs (TIPs).

This item includes the cases which pharmacist has access to a database with prescriptions' information, clinical data and other clinical information. (E.g.: provincial prescription claims database and information systems, such as DIRAYA).

**4.15 Other clearly stated clinical data sources, not previously included**

When pharmacist get information in other clearly stated clinical data sources, do not consider the previous items.

You should consider item 4.15 when the pharmacist assesses patient's previous knowledge about the disease or therapy (pharmacologic or non-pharmacologic). It is imperative to consider that

pharmacists assessed this data to create the intervention. Do not consider the cases which pharmacist assessed patients' knowledge only to obtain a research result. The assessment's result should be part of the intervention.

This item should also be considered when the pharmacist assesses the patient's technique of drug administration (e.g.: use of inhalers), since indirectly he is evaluating patient's knowledge.

## **5. VARIABLES ASSESSED**

Parameters evaluated by pharmacist to construct intervention.

Do not consider the items included in this domain whether the assessed variables were only used to evaluate outcomes. The variables assessment should be part of the intervention construction.

### **5.01 Drug selection**

The evaluation of medication appropriateness by taking into consideration patient overall health in addition to guidelines and clinical protocols.

You should consider this item only when the author explains that the assessment included a prescription analysis of: appropriateness of drug indications, contraindications, duplicated drug therapy, medication interactions, necessity of additional treatment and unnecessary drug therapy.

When the author reports that Drug-Related Problems (DRP) were assessed, it is necessary to identify what types of problems were evaluated, either by author's description, the classification used or the definitions considered to define DRP. This item should not be marked whether the author does not specify neither the type of DRP evaluated, the classification nor the definition used, in a way that it was not clear if pharmacist evaluated or not the drug therapy selection.

This item should be considered whether the author does not specify that the drug therapy selection was assessed by pharmacist, however it was evident that this activity was performed based on pharmacist's interventions, such as a suggestion to optimize drug-therapy to the physician.

### **5.02 Medication effectiveness**

The capacity of a medication to produce a specific result, exerts a specific measurable influence, or produces the desired beneficial effect in actual usage.

This item should be considered only when pharmacist assesses patients' drug therapy effectiveness, by evaluating patient's symptomatology, point-of-care tests, laboratory exams, physical examination and others non-laboratory exams.

When the author reports that Drug-Related Problems (DRP) were assessed, it is necessary to identify what types of problems were evaluated, either by author's description, the classification used or the definitions considered to define DRP. This item should not be marked whether the

**Manual of instructions**

author does not specify neither the type of DRP evaluated, the classification nor the definition used, in a way that it was not clear if pharmacist evaluated or not the therapy effectiveness.

This item should be considered when the author did not let clear if medication effectiveness was assessed, but was reported that there were interventions to solve effectiveness problems (drug therapy failure).

*(Dorland's Medical Dictionary for Health Consumers. © 2007 by Saunders, an imprint of Elsevier, Inc. All rights reserved.)*

**5.03 Medication safety**

Medication safety concerns involve the occurrence of adverse drugs reactions, medication toxicity and other situations when a medical condition is produced or exacerbated by a drug therapy.

This item should be considered only when pharmacist assesses patients' medication safety, by evaluating patient's symptomatology, point-of-care tests, laboratory exams, physical examination and others non-laboratory exams.

When the author reports that Drug-Related Problems (DRP) were assessed, it is necessary to identify what types of problems were evaluated, either by author's description, the classification used or the definitions considered to define DRP. This item should not be marked whether the author does not specify neither the type of DRP evaluated, the classification nor the definition used, in a way that it was not clear if pharmacist evaluated or not the medication safety.

This item should be considered when the author did not let clear if medication safety was assessed, but it was reported that there were interventions to solve drug therapy safety problems (adverse reactions, drug intoxication or allergy history).

This item should not be considered when pharmacist provides counseling to patients to educate them about possible adverse reactions related to medications in use.

**5.04 Patient / Caregiver educational needs / Beliefs**

Assessment of the knowledge, beliefs, concerns and/or expectations of the patient/caregiver. This can be performed through a clinical interview, questionnaire, or a health literacy assessment.

This item should be considered when the author specifies that educational necessities, beliefs, concerns or patients' and caregivers' expectations were assessed for pharmacists aiming to support the provision of education programs or counseling sections to patients.

**5.05 HCP information needs**

The identification of opportunities to provide scientific or drug information to improve patient

care. (i.e. academic detailing).

This item should only be considered when there is an evaluation to assess the necessity of drug therapy information or education to HCP.

This item also includes pharmacist's assessment of HCP necessities for drug therapy information in clinical rounds, by analysis of prescriptions databases, or when HCP directly contact pharmacists to obtain information.

This item should not be considered when there is a clinical round discussion or case conferences about specific patients. Moreover, this item should not be considered when recommendations to optimize drug therapy are made to physicians.

#### **5.06 Medication adherence or persistence**

Four terms are often used in clinical studies to refer patient's behavior in relation to taking medication: compliance, adherence, concordance and persistence. Compliance and adherence are usually used as synonymous, still the term "adherence" be less derogatory and often preferred by patients. Medication adherence is described in MeSH terms as the voluntary cooperation of the patient in taking drugs or medicine as prescribed. This includes timing, dosage, and frequency. 'Persistence' has been described as the time of continuous therapy, demarcated by the time from initiation of therapy to discontinuation of therapy.

Examples of adherence measuring tools include therapy monitoring, pill counts, validated questionnaires, electronic medication monitors (i.e. MEMS) or medication diary. In some studies, prescriptions unclaimed by patients are also used as a proxy in order to identify non-compliance patients.

This item should be considered when pharmacist systematically assesses patient's adherence to drug therapy aiming to construct an intervention. This item should not be considered when adherence assessment is made only for clinical pharmacists' service results.

*(National Library of Medicine - Medical Subject Headings. 2012 Mesh. Medication adherence. Available at: <http://www.ncbi.nlm.nih.gov/mesh/68055118>)*

*(Cramer JA, Roy A, Burrell A, Fairchild CJ, Fuldeore MJ, Ollendorf DA, et al. Medication compliance and persistence: terminology and definitions. Value in health: the journal of the International Society for Pharmacoeconomics and Outcomes Research. 2008;11(1):44-7)*

#### **5.07 Medication list / history accuracy**

A medication list is usually a record of all prescriptions, over-the-counter medicines, herbals, supplements, minerals, ointments, and vitamins that the patient uses. It is a list of medications that

**Manual of instructions**

a given patient is currently taking. This list can be send to the physician through the patient, by fax or written in the medical records. This may also include medication histories published in the medical records, which resulted from medication reconciliation. It is also called medicines list or medication summary.

It should also be considered when there is an evaluation of patient's medication history and concordance to another source of clinical information, such as medical prescription.

This item should be considered when pharmacists provide medication reconciliation. Consider this item also when the author reports that the pharmacist performed an update of medication list (in this case the item 6.06 will be checked).

*(Washington patient safety coalition. My medicine list. Available at: <http://www.wapatientssafety.org/my-medicine-list>)*

*(Rooney WR. Maintaining a medication list in the chart. Family practice management. 2003 Mar;10(3):52-4)*

**5.08 Patient nutrition or lifestyle**

Nutrition is the science that deals with food and nourishment, including dietary guidelines, food composition, and the roles that various nutrients have in maintaining health.

*(The American Heritage® Medical Dictionary Copyright © 2007, 2004 by Houghton Mifflin Company. Published by Houghton Mifflin Company. All rights reserved.)*

Lifestyle is the constellation of habitual activities unique to a person, which lend consistency to activities, behavior, manners of coping, motivation, thought processes, and define the way in which he/she lives; lifestyle activities include diet, level of physical activity, substance abuse, social and personal interactions.

This item should be considered when pharmacist evaluates patient's lifestyle and nutritional needs. This item should not be considered when pharmacist only provides counseling to patients about lifestyle or diet, without assess their needs.

*(Segen's Medical Dictionary. © 2012 Farlex, Inc. All rights reserved.)*

**5.09 Screening results**

The objective and subjective features of disease that are carefully evaluated to establish a diagnosis.

*(Mosby's Dental Dictionary, 2nd edition. © 2008 Elsevier, Inc. All rights reserved.)*

### **5.10 Costs of treatment**

Costs can be formed by direct medical, direct nonmedical, and indirect costs associated with the treatment alternatives evaluated.

*(CM Kozma, CE Reeder, RM Schulz. Economic, clinical, and humanistic outcomes: A planning model for pharmacoeconomic research. ClinTher. 1993;15:1121–1132)*

### **5.11 Medication accessibility / Availability**

The ease of a patient can get access to a medication and medication accessibility.

For example, a pharmacist can evaluate an insurance drug formulary to see if the medication is covered under the patient's health plan.

This item should be considered when it is evaluated patient's availability and access to medications.

### **5.12 Expired or improperly stored medication**

Expired medications have deteriorated active compounds which are no longer safe for use. Improperly stored medications are placed in locations that may promote degradation at a faster rate than what is expected by their expiration date such as storing medications in heat, light, cold, or moisture.

This item should be considered when pharmacist evaluates expired or improperly stored medication. This item should not be considered when pharmacist provides counseling without assessing the way that patient stores its medications or if the patient uses any expired medication.

### **5.13 Dispensing or administration errors**

Any incorrect or wrong administration of a medication, such as a mistake in dosage or route of administration, drug administration technique (performance), failure to administer the correct drug or formulation for a particular disease or condition, or failure to observe the correct time for administration of the drug. Causes of medication error may include difficulty in reading handwritten orders and confusion about different drugs with similar names.

This item should not be considered when pharmacist only provides counseling to patients about drug administration technique, without assess as the patient uses the medication.

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier.)*

### **5.14 Laboratory tests requirements**

Missing laboratory tests that are required by either law or protocol for the dispensing and administration of drug therapy.

**Manual of instructions**

This item should be considered when pharmacist requests laboratory tests or suggests to physicians a laboratorial monitoring (e.g.: potassium plasmatic levels and renal function).

**5.15 Legal or administrative requirements**

Issues related to the compliance of laws regarding prescribing and dispensing. For example, a pharmacist can identify missing information on a prescription order requiring HCP contact, or identify if a prescriber is using appropriate medication order forms from the hospital.

Consider this item when pharmacist evaluates problems in medical prescriptions, such as asking for information clarification.

**5.16 Other clearly stated variable(s) assessed**

In cases which pharmacist assesses others parameters to construct intervention that does not fit in the above items, such as patient's management capacity and technical problems with medication use (look-alike medicines, difficulty in opening bottles (dexterity) and/or reading labels, difficulty swallowing tablets or capsules).

**6. ACTION(S) TAKEN BY PHARMACIST**

What is done by pharmacist to address the identified problems.

**6.01 Structured Educational Program**

An organized event or course used to provide information to the recipient. This can include disease education programs, academic detailing, or conferences. In sum, an educational program consists on sequential classes or sessions with predetermined materials and subjects.

Disease-specific education or patient therapeutic education is designed to train patients in the skills of self-managing or adapting treatment to their particular chronic disease, and in coping processes and skills. Therapeutic patient education is education managed by health care providers trained in the education of patients, and designed to enable a patient (or a group of patients and families) to manage the treatment of their condition and prevent avoidable complications, while maintaining or improving quality of life. Its principal purpose is to produce a therapeutic effect additional to that of all other interventions (pharmacological, physical therapy, etc.).

Therapeutic education can include topics about patient self-management and can be structured as educational programs. Self-management refers to what patients decide to do in order to manage their treatment and prevent complications. Educational programme is a series of planned and coordinated educational activities that a learner is to experience with the assistance of teachers. Therapeutic education can include topics about nutrition and changes in lifestyle. For the purpose

of this tool, yet, this item covers the descriptions made by authors of lifestyle, dietetic or physical activity advice. Lifestyle corresponds to a person's particular way of life – dietary habits, physical activities, tabagism, etc. used to cope with life and ease social contact – shaped by patterns of interpersonal interaction and social learning that interrelate with and are determined by the social environment. Dietary counseling provides individualizing nutritional care for encouraging modification of eating habits.

*(World Health Organization (WHO). Therapeutic patient education. Continuing Education Programmes for Health Care Providers in the Field of Prevention of Chronic Diseases. Geneva: WHO; 1998. p. 90.*

Educational program is a sequence of planned and coordinated educational activities that a learner is to experience with the assistance of teachers. This item refers to education program developed and provided to a group of patients at each time.

Educational programs are typically focused on patients with chronic diseases and may include contents about diet, nutrition behavior, medication, physical activity, self-monitoring, preventive care, particular situations, among others devoted to develop competency profiles.

*(World Health Organization (WHO). Therapeutic patient education. Continuing Education Programmes for Health Care Providers in the Field of Prevention of Chronic Diseases. Geneva: WHO; 1998. p. 90.*

## **6.02 Drug information or patient counseling**

An event between the recipient and the pharmacist where information is provided. This can be informal meetings, conversations, or counseling sessions.

Medication counseling is an approach that focuses on enhancing the problem solving skills of the patient for the purpose of improving or maintaining quality of health and quality of life. Medication counseling may include the purpose of the prescribed drug; proper administration, length of therapy, special directions for use, proper storage, and refill instructions; information on common adverse effects, potential interactions, and contraindications to the use of the drug; and guidance on steps to take given specific outcomes. Medication education and counseling are generally focused to enhance patient's knowledge, medication skills, or adherence to treatment.

*(International Pharmaceutical Federation, International Society of Pharmaceutical Students. Counselling, concordance and communication - Innovative Education for Pharmacists. Vancouver; 2005 p. 50)*

*(American Society of Health-System Pharmacists. ASHP guidelines on pharmacist-conducted patient education and counseling. American journal of health-system pharmacy. 1997 Mar*

**Manual of instructions**

15;54(4):431–4.)

**6.03 Reminders / Notification about non-compliance**

Reminders can be phone calls, letters, or alerts to allow the recipient to recall information. For a patient it can be a reminder to take their medication or to get a lab test performed. For a HCP, it can be information about patients that are non-compliant or interventions that are helping their patient to remember to be adherent.

**6.04 Referral to other HCP or service**

The recommendation from pharmacist to the recipient to contact another HCP. For example, the pharmacist can refer a patient to a physician for a specialized care.

This item should always be considered when pharmacist directly refers patients to a physician, with a letter or by other communication strategies.

**6.05 Change or suggestion for change in therapy / Lab tests order**

Any modifications made to a patient's medication therapy (i.e., drug, dose, dosage form, route or frequency), lab exams ordering for drug therapy monitoring (i.e., INR, liver function tests) to the patient or the suggestions for change the therapy or monitoring made to prescriber (i.e. physician). A change in therapy may also include recommendations of vitamins, minerals, supplements such as nutritional shakes, or dermatological products with therapeutic value such as hydrating creams and sun protecting lotions.

A change in therapy or a laboratory test order can be made directly by the pharmacist (variable A.6.05). In this case, item 11 must be completed. It is necessary to specify the type(s) of change(s) made (start, suspend or change dosage of medication). Secondly, the pharmacist's autonomy can have two variations as described in variables 11.05 and 11.06.

Another possibility is that pharmacist makes a recommendation or suggestion to the HCP (variable B.6.05). In this case, the HCP can accept, reject or ignore the recommendation and, if applicable, be responsible for implementing the change.

This item should not be considered when pharmacist only suggests to patient or to the HCP drug administration time modification.

**6.06 Update of patient's medication list**

The pharmacist updates the list of medications in use by the patients and correct discrepancies or drug therapy problems. The updated list can be registered in the medical record, in a patient's card or other method of recording.

A medication list is usually a record of all prescriptions, over-the-counter medicines, herbals, supplements, minerals, ointments, and vitamins that the patient uses. It is a list of medications that a given patient is currently taking. This list can be sent to the physician through the patient, by fax or be recorded as a note in the medical records. This may also include medication histories published in the medical records, which resulted from medication reconciliation. It is also called medicines list or medication summary.

*(Washington patient safety coalition. My medicine list. Available at: <http://www.wapatientssafety.org/my-medicine-list>)*

*(Rooney WR. Maintaining a medication list in the chart. Family practice management. 2003 Mar;10(3):52–4)*

### **6.07 Monitoring results report**

A paper- or electronic-based report of updated laboratory data or point-of-care testing results and notification about adverse drug events, including intoxications and adverse drug reactions, all created by the pharmacist and provided to the patient/caregiver or HCP.

### **6.08 Other clearly stated action (s), not previously included**

Consider this item when the pharmacist performs any action, not defined in the previous items.

## **7. TIMING OF THE ACTIONS**

The moment when the action(s) referred in item 6 is (are) provided to each recipient.

The timing for each action must be defined. So, the first action can occur during the medication dispensation and the subsequent actions at schedule appointment. In this case, all the related items must be checked

### **7.01 On or during patient admission**

Patient admission is the process of accepting patients for medical and nursing care in a hospital or other health care institution. Hospital admission involves staying at a hospital for at least one night or more.

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier)*

### **7.02 On patient discharge**

Patient discharge is the administrative process of discharging the patient from hospitals or other health facilities. Discharge from the hospital is the point when the patient leaves the hospital and either returns home or is transferred to another facility such as one for rehabilitation or a nursing home.

## Manual of instructions

*(The Encyclopedia of Surgery. Discharge from the hospital. Available at: <http://www.surgeryencyclopedia.com/>)*

**7.03 First weeks after patient discharge**

When the intervention is performed at a specified time after discharge.

This item should be considered when the author defines that the timing of intervention was within the first weeks after patient discharge, even if it is not exactly in the first weeks after discharge. Ex: if the author defines that ten weeks represents first weeks, we consider this information.

**7.04 Inter / Intra patient health care facility transfer**

Interfacility transfer is any transfer, after initial assessment and stabilization, from and to a health care facility. Examples would include hospital-to-hospital, clinic to hospital, hospital to rehabilitation, and hospital to long-term care.

*(National Highway Traffic Safety Administration. Guide For Interfacility Patient Transfer. Washington: The Administration; 2006)*

Intrafacility transfer is any transfer within the same facility, e.g. transfer from one hospital's ward to another.

**7.05 After an acute patient event or exacerbation**

Situations that occur rapidly and unexpectedly requiring urgent care. Examples include emergency department visits and acute episodes occurring during admission.

**7.06 Medication dispensing**

Drug dispensing is the preparation, packaging, labeling, record keeping, and transfer of a prescription drug to a patient, who is responsible for administration of the drug.

*(Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier)*

**7.07 Scheduled appointment with the recipient**

A planned meeting at a specific time and place.

*(Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, Seventh Edition. © 2003 by Saunders, an imprint of Elsevier, Inc. All rights reserved.)*

**7.08 At any time**

The intervention was specified as being able to occur at any time, without specification. An example would include when a pharmacist contacts a health care professional after a scheduled appointment with a patient. The timing of the actions provided to patient was scheduled but to the

HCP they were not. In this case, the timing must be selected as “at any time” to the HCP.

### **7.09 New or changed prescription**

A new drug prescription is the first prescription of a medication for a patient. Usually, could be the result of the diagnostic of a new disease or condition. When a patient receives a drug he/she has never taken before, he/she is also called a naive patient. A changed prescription is a prescription of a medication, already in use by a patient, which suffered changes in strength or dosage regimen. Otherwise, a prescription drug that is provided again is called refill prescription.

*(Karter AJ et al. New prescription medication gaps: a comprehensive measure of adherence to new prescriptions. Health services research. 2009 Oct 1; 44(5 Pt 1):1640-61)*

### **7.10 Other clearly stated timing of action(s), not previously included**

Consider this item when the pharmacist performs any action in other timing, not defined in the previous items.

## **8. MATERIALS THAT SUPPORT ACTION(S)**

Resources, tools or aids developed and/or provided to patients/caregiver or HCP that support the clinical pharmacy service. Items should be selected in respect to the recipient of the material. For example, a clinical protocol developed by pharmacist and physician to guide medication management in the context of clinical pharmacy service must be selected in B.8.06 (HCP). Another example can be a discharge letter provided to the patient, physician and the community pharmacist. Here patient/caregiver (A.8.01) and HCP (B.8.01) must be selected. In the provision of medication compliance device, diary and self-monitoring device, the patient is always the recipient.

It also includes cases in which the material that support the action makes part of the action. Examples: the pharmacist can update a patient’s medication list and deliver it to HCP (B.6.06) that includes the medication list provision (B.8.04). The pharmacist also can refer the patient to other HCP (A.6.04) and concomitantly deliver to HCP a discharge or referral letter (B.8.01).

### **8.01 Discharge or referral letter**

A discharge letter is a clinical report prepared by a physician or other health professional at the conclusion of a hospital stay or series of treatments. It outlines the patient's chief complaint, the diagnostic findings, the therapy administered, and the patient's response to it, and recommendations on discharge.

A referral letter is used to recommend the recipient to seek services from another HCP. It contains information gathered by the pharmacist to facilitate the transfer of care and the reason why another HCP was needed. The letter can contain recommendations to the HCP as well. (i.e. SOAP notes or

## Manual of instructions

monitoring results).

(*Mosby's Medical Dictionary, 8th edition. © 2009, Elsevier.*)

### 8.02 Educational materials / Leaflets / Written action plan

Educational material can be a printed material, drug information leaflets, written medication information, self-help material, booklets, manuals, video, audio or web-based resources that can be read, listened, or viewed by the recipient with informational and learning objectives.

This item includes the provision of a diabetic identity card which enables the identification of a diabetic patient and how to proceed when there is a hypoglycemic event.

The care plan or action plan aims to determine, according to patients needs, how to properly manage health problems with drug therapy. This care plan must clearly specify the therapeutic outcomes to be achieved, especially those related to solve drug therapy problems, and the necessary actions to preserve optimal therapeutic outcomes and the next follow-up evaluations.

(*Katz MG, Kripalani S, Weiss BD. Use of pictorial aids in medication instructions: a review of the literature. American journal of health-system pharmacy. 2006 Dec 1;63(23):2391–7*)

(*Winslow EH. Patient education materials. The American journal of nursing. 2001 Oct;101(10):33–8; quiz 39*)

(*Correr CJ, Otuki, MF. Plano de cuidado e seguimento individual do paciente. In: A prática farmacêutica na farmácia comunitária. Porto Alegre: Artmed, 2013. p. 352*)

### 8.03 Medication compliance device / Administration aid device

The administration of oral medicines may be facilitated through the appropriate use of ‘organizers’, which act as *aides memoire*. Auxiliary resources to improve patient adherence to the treatment can include pillboxes, pill organizers, dispensers, dosage systems, medication packs, medication diaries, reminders systems, beep-cards, among others. Medication aids also include gadgets designed to improve physical dexterity when applying topical preparations, administering insulin injections, operating pressurized inhalers or administering eye drops.

Diagnostic tests used to evaluate medication compliance, like questionnaires or electronic systems, are not considered medication adherence or administration aids.

(*Rivers PH. Compliance aids--do they work? Drugs & aging. 1992;2(2):103–11*)

(*Mahtani KR, Heneghan CJ, Glasziou PP, Perera R. Reminder packaging for improving adherence to self-administered long-term medications. Cochrane database of systematic reviews (Online). 2011 Jan;(9):CD005025*)

*(Nunney JM, Raynor DKT. how are multi-compartment compliance aids used in primary care? The Pharmaceutical Journal. 2001;267(Dec):784–9)*

#### **8.04 Medication list /Dosage schedule /Medication report**

A medication list is usually a record of all prescriptions, over-the-counter medicines, herbals, supplements, minerals, ointments, and vitamins that the patient uses. It is a list of medications that a given patient is currently taking. This list can be sent to the physician through the patient, by fax or be record as a note in the medical records. This may also include medication histories published in the medical records, which resulted from medication reconciliation. It is also calling by medicines list or medication summary.

Dosage schedule is a paper- or electronic-based scheme designed to determine and regulate size, frequency, and number of medication doses. Its objective is to facilitate patient compliance and self-administration of medication therapy. It may also be called medication schedule, medication chart, medication reminder chart, charting form, or medication calendar.

Medication Report is a tool to communicate changes in drug treatment during a patient's hospital stay. Medication report is included in the discharge summary and describes all medication changes and the reasons for these during hospital care.

This item also includes discharge medication chart which consists on a card with the medication's name, doses and times for administration of all drug therapy in use. This chart may include pictures to facilitate the comprehension.

*(Rooney WR. Maintaining a medication list in the chart. Family practice management. 2003 Mar;10(3):52–4)*

*(Lussier M-T, Richard C. Communication tips. Medication list: enhancing patients' knowledge and adherence. Canadian family physician. 2007 Feb;53(2):233–6)*

*(Midlöv P, Deierborg E, Holmdahl L, Höglund P, Eriksson T. Clinical outcomes from the use of Medication Report when elderly patients are discharged from hospital. Pharmacy world & science : PWS. 2008 Dec;30(6):840–5.)*

#### **8.05 Patient diary / Health diary**

Patient or health diaries are paper- or electronic-based resources provided to the patients and used to records signs or symptoms of a disease or medical condition that are self-monitored. Applications includes self-blood pressure monitoring, self-glucose monitoring, self-monitoring pain intensity, self-monitoring in weight loss, self-monitoring dietary intake, asthma symptoms self-monitoring, among others.

**Manual of instructions**

*(Zanni GR. Patient diaries: charting the course. The Consultant pharmacist: the journal of the American Society of Consultant Pharmacists. 2007 Jun;22(6):472–6, 479–82)*

**8.06 Guidelines / Protocols/ Evidence chart**

Practice guideline has a publication format. It is a publication which consists on directions or principles to assist the health care practitioner about appropriate diagnostic, therapeutic, or other clinical procedures for specific clinical circumstances. Practice guidelines may be developed by government agencies at any level, institutions, organizations such as professional societies or governing boards, or by the convening of expert panels. They can provide a foundation for assessing and evaluating the quality and effectiveness of health care in terms of measuring improved health, reduction of variation in services or procedures performed, and reduction of variation in outcomes of health care delivered.

Clinical protocol is a therapeutic procedure. It includes precise and detailed plans for the study of a medical or biomedical problem and/or plans for a regimen of therapy. Guidelines and clinical protocols can comprise algorithms of treatment that are a sequence of logical steps to determine a patient's treatment, generally based on the interpretation of treatment outcomes.

In cases in which the pharmacist provided a guideline to the patient only with educational purpose, consider the item 8.02 (educational materials). Only consider this item when the guideline is provided to the patient for he/she has autonomy over their treatment.

*(National Library of Medicine - Medical Subject Headings. 2012 Mesh. Clinical protocols. Available at: <http://www.ncbi.nlm.nih.gov/mesh/68002985>)*

*(National Library of Medicine - Medical Subject Headings. 2012 Mesh. Practice guideline [Publication type]. Available at: <http://www.ncbi.nlm.nih.gov/mesh/68017065>)*

**8.07 Self-monitoring device**

A device used to assist and facilitate patients in managing their diseases by making it simpler to monitor. Examples include glucometers, blood pressure machines, scales, and peak flow meters.

**8.08 Auxiliary labels / Pictorial instructions / Reminders**

Auxiliary labels are medication labels that contain warnings, dietary information, instructions for administrating medicine, or cautionary details. They contain information important for patients, including information relevant to the patient in taking the course of medication (i.e. "May Cause Drowsiness," "Refrigerate," "Do Not Crush," etc.).

**8.09 Other materials developed or provided, not previously included**

Consider this item when the pharmacist develops or provides other materials to patient (A) or HCP (B), not defined in the previous items.

## **9. ACTION(S) REPETITION**

### **ACTION RECURRENCE**

#### **9.01 Action(s) described in item 6 performed in one contact**

The service was performed in a single contact with the recipient. For example, the patient participated in one medication counseling session or a pharmacist performed one outreach visit (i.e. academic detailing) to the physician. Another example would include a patient is interviewed by telephone for assessment and then met with the pharmacist for a consultation two weeks later for a counseling session. The pharmacist then contacted the patient three weeks later by telephone to assess medication adherence. In this case there is only one action taken because the first contact was to collect baseline data and the last contact was to collect post-intervention data.

#### **9.02 Action(s) described in item 6 performed in multiple contacts**

The service allowed the actions to be performed more than once. For example, the pharmacist made a domiciliary visit two weeks after discharge to perform an assessment of accuracy of medication history, adherence, and medication therapy effectiveness and safety. In this consultation the pharmacist provided medication counseling and prepared a referral letter to physician with suggestions for changes in drug therapy. Afterwards, the pharmacist performed two follow-up visits, in 30 and 60 days, when new medication counseling was provided and the medication list was kept updated. In this case we have three actions (patient counseling, referral to other HCP and update of patient's medication list) performed in multiple contacts (three contacts) in a period of 60 days.

### **FREQUENCY OF CONTACTS**

#### **9.03 Number of contacts with recipient during service**

How many times the pharmacist contacts each individual recipient throughout the service. This does not include follow-up to evaluate the intervention for research purposes but includes contacts required to obtain baseline or monitoring information that is necessary to perform the assessment and actions. Example includes when a patient is interviewed by telephone and then meets with pharmacist for a medication counseling session two weeks later. The pharmacist then contacted the patient three weeks later by telephone to assess medication adherence. In this case there are two contacts because the third contact was to collect post-intervention data.

In cases which is established a minimal number of contacts, consider this number even if

**Manual of instructions**

additional visits could be performed depending on the patient's needs. When there is an average number of contacts with recipients, consider this number. Additionally, in cases which the real number of contacts established with the recipient is different than the number previously defined, consider the number of contacts that really occurred.

An empty cell in this variable represents that the author did not relate the number of contacts established with the recipient.

**9.04 Intervention duration per recipient (in days)**

Time between the first contact and last contact with the recipient(s). This does not include follow-up to evaluate the intervention for research purposes. In the previous example, a patient is contacted to a telephone interview and then met with the pharmacist for a consultation two weeks later. The pharmacist then contacted the patient three weeks later by telephone to evaluate medication adherence. The intervention duration would be 35 days in this case.

Although in most of times the author does not report the intervention's duration with the HCP, it should be considered that this time interval was the same as performed with the patient. This occurs specially when pharmacists and HCP work together (e.g.: hospital and ambulatory setting).

An empty cell in this variable represents that the author did not relate the intervention duration per recipient.

**10. COMMUNICATION WITH RECIPIENT****METHOD**

It should be considered the recipients' communication method, only during the intervention. This item does not include the contact during outcomes assessment (without service provided to patient or HCP).

**10.01 Face-to-face**

Pharmacist contact with recipient occurred in-person. The pharmacist and the recipient are talking to each other in the same place, at the same time. It may or not be results from a scheduled appointment between the pharmacist and the patient/caregiver/HCP.

**10.02 Written (including web-based)**

Pharmacist contacts or sends information to recipient through written format such as reports, letters, medication lists, email, chats, and online forums. This does not include the provision of pre-arranged educational materials, like leaflets and written drug information.

### **10.03 Telephone**

Pharmacist contacted recipient via a telephone call.

### **10.04 Video conference**

Pharmacist communicated with recipient via a video conference where both parties had visual contact with each other.

## **DISTRIBUTION OF CONTACTS DURING INTERVENTION**

Leave in blank items 10.05 to 10.09 in cases that one method of communication with the recipient is established (e.g.: written), however other methods, although they have clearly occurred, are not defined (e.g.: the pharmacist have discussed with the HCP the recommendations for changes in therapy; and this contact may be, therefore, a face-to-face or telephone contact).

### **10.05 Only in person**

All encounters were performed in person and there was no remote contact.

### **10.06 Mainly in person with some remote contact**

More than half of the contact with the recipient was performed in person while the remainder was performed remotely.

### **10.07 Equally in person and remotely**

There was the same amount of pharmacist contact with the recipient in person and remotely.

Consider this item every time it is not clear the difference between the frequency of face-to-face or remote contacts.

### **10.08 Mainly remotely, with some contact in person**

More than half of the contact with the recipient was performed remotely while the remainder was performed in person.

### **10.09 Only remotely**

All encounters were performed remotely and there was no face-to-face contact. Remotely is any form of contact that is not in person.

If there is only remote contact with the HCP, and there is no described method about this remote communication, leave in blank items 10.01 to 10.04.

## **11. CHANGES IN MEDICATION THERAPY**

How independent or self-sufficient is the pharmacist to make changes in the patient's medication regimen or to order laboratory tests. Consider marking these items only if the pharmacist makes

**Manual of instructions**

changes in patient's therapy or orders lab tests to the patient (Item A.6.05).

**11.01 Not applicable (Check if item A 6.05 was not selected)**

Consider this item when item A 6.05 was not marked or was selected just for over the counter (OTC) needs.

If the author reports that the pharmacist has autonomy, but the decisions that can be made without contact HCP are not informed, leave in blank items 11.02 to 11.07. Although, once the item 11.01 won't be checked, it will be evidenced the pharmacist autonomy.

**MEDICATION AND LAB TESTS****11.02 To start medication**

The pharmacist's autonomy, by prescribing rights or agreed protocols, to recommend a new medication or treatment to the patient.

**11.03 To suspend a medication**

The pharmacist's autonomy, by prescribing rights or agreed protocols, to discontinue one or more patient's medications due to adverse effects, treatment failure, cure of the disease, among others reasons.

**11.04 To change medication dosage**

The pharmacist's autonomy, by prescribing rights or agreed protocols, to adjust the dosage regimen.

**11.05 Order laboratory tests**

The pharmacist's autonomy, by legal rights or agreed protocols, to order laboratory tests or therapeutic drug monitoring to the patient.

**CAPABILITY TO MAKE CHANGES IN TREATMENT**

Consider marking these items only if the pharmacist makes changes in patient's therapy, not simply suggestions to physician.

**11.06 Changes or lab tests orders with restrictions (dependent prescribing model)**

'Dependent' prescribing incorporates more restriction on prescribing activities, via protocols or formularies. Prescribing by protocol is the most common form of dependent prescribing, and is defined as "delegation of authority from an independent prescribing professional, usually a physician", involving a formal agreement (protocol). The protocol is a written guideline; an explicit and detailed document that describes the activities that pharmacists may perform in their

prescriptive authority. There are several models of dependent prescribing, as example, patient group directions, prescribing by formulary, prescribing by patient referral, repeat prescribing, supplementary prescribing and collaborative prescribing models.

*(Emmerton L, Marriott J, Bessell T, Nissen L, Dean L. Pharmacists and Prescribing Rights : Review of International Developments. Journal of Pharmacy and Pharmaceutical Sciences. 2005;8(2):217–25)*

When the author does not clearly specifies if the prescription is dependent or independent, and also if it is not possible to identify the model of the prescription defined by the author, checked not reported (empty cell).

#### **11.07 Changes or lab tests orders without restrictions (independent prescribing model)**

Pharmacist can prescribe without the approval of another prescriber. Independent prescribing occurs where the pharmacist is solely responsible for patient assessment, diagnosis and clinical management and requires legally defined levels of knowledge and skill that are usually monitored through a licensing process.

When the author does not clearly specifies if the prescription is dependent or independent, and also if it is not possible to identify the model of the prescription defined by the author, leave the cell in blank (empty cell).

*(Emmerton L, Marriott J, Bessell T, Nissen L, Dean L. Pharmacists and Prescribing Rights: Review of International Developments. Journal of Pharmacy and Pharmaceutical Sciences. 2005;8(2):217–25)*