

Medimecum[®] Suite Clinica

Changing needs in clinical knowledge from
healthcare professionals

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Clinical suite with different modules to aid decision-making by the physician

- Medimecum: drug therapy guide
- Cliniguía: online manual of clinical medicine
- Fitoguía: multidisciplinary guide to medicinal plants.
- Clinical procedures
- Lab tests: Guialab
- Safe Prescription Module (Modulo SP)

MEDIMECUM main goals

- Provide to physicians an online rational drug therapy guide
- Give easy-to-find concise, objective, unbiased, independent and relevant clinical and pharmacological information
- Allow access to the complete spanish national prescription formulary

MEDIMECUM overview

- Introduction to prescription, legal features, plasma drug levels, etc.
- Clinical Formulary (based in ATC Classification) and therapy guidelines
- Interactions, prescription in special situations (pregnancy, renal failure)
- Appendixes, formulae, nomograms, etc.

MEDIMECUM drug information (1)

- Introduction to each therapeutic group
- Drug name (and alternative names)
- Summary description of the drug
- Standard characteristics (indications, dose, adverse effects, cautions, counterindications)
- Tables of ionic and drug contents of single-drug and compound preparations

MEDIMECUM drug information (2)

- Trade and brand names, and preparations for each active substance and compound association available in the spanish market
- Manufacturing laboratories
- Composition
- Weight-volume and units per pack
- Prescription administrative information, financing data and market price

Medimecum authors

- Editor: Luis F. Villa MD
- Editorial Committee formed by 10 members
- Advisor Committe formed by 14 members
- Contributors: about 100 members (staff and fellow clinicians, clinical pharmacologists and pharmacists)
- All belonging to >20 university hospitals or family medicine centres of all over the country

Safe Prescription Module (Modulo SP)

- Bridges the clinical record with the clinical decision-taking support systems
- Ready to integrate with prescription systems

Mekhjian HS. J AM Med Inform Assoc. 2002;9:529-539

Benefits of the integration of ePrescription with CDS

- Avoids the need of transcription
- Shorter lab result reporting times
- Physicians can be alerted of individual patient-related hazards based on his medical history and current medications

Mekhjian HS. J AM Med Inform Assoc. 2002;9:529-539

ENEAS 2005

- Adverse effects of drugs (37.4%) are more frequent than infection (25.34%) and clinical procedure sequelae (25.4%)

Source: Estudio Nacional sobre los Efectos Adversos ligados a la Hospitalización. ENEAS 2005 (Informe. Febrero 2006). Aranaz Andrés J.M. et al. Ministerio de Sanidad y Consumo.

ENEAS 2005

- Many of the adverse effects associated with medication (34.8%) could be avoided.
- The socio-economic impact of the adverse effects related to hospitalization are a main priority in healthcare management.

Source: Estudio Nacional sobre los Efectos Adversos ligados a la Hospitalización. ENEAS 2005 (Informe. Febrero 2006). Aranaz Andrés J.M. et al. Ministerio de Sanidad y Consumo.

Electronic Prescription: Advantages

- Optimizes the prescription process
- Eases coordination with pharmaceutical dispensation
- Allows the use of automatic real-time quality control tools
- Eases fast evaluation and Data Warehousing of drug prescription

Electronic Prescription: Advantages

- Reduce medication errors
- Increase the safety of our patients by enabling care providers to make informed decisions during the prescription process

Electronic Prescription Data

- Drug-specific variables (e.g. pharmaceutical form, weight, administration route, etc), essential for the prescription record
- (Optional) Auxiliar databases for prescription quality control
- (Optional) Support for the decision-making process

Clinical Decision Support (CDS)

- Definition:

Providing physicians with clinical knowledge and/or patient related information, filtered or presented at appropriate times, to enhance the quality of patient care

(Based on J Osheroff 2004)

Main Goal of the Medimecum Safe Prescription (SP) Module

Designing, building, maintaining and marketing applications and clinical database products for the Quality Control Process of the different e-prescription applications used in Spain.

Safe Prescription (SP) Module: Description

- Provides on-line help to the clinician about proper dosage, administration, adverse effects, cautions, interactions and contraindications according to national and/or local guidelines and protocols
- Provides help during the clinician's decision making process concerning drug selection and other therapeutic interventions
- Alerts in real time of risks during the drug selection and dose specification

SP Module: On-line Help

- Provides help during drug selection according to ICD-coded Spain-approved indications
- Informs about therapeutic alternatives according to evidence-based data
- Provides national technical drug sheet and local guidelines
- Linked prescription tools:
 - Oral solution and pediatric drug dose calculator
 - Emergency IV drug dosing and infusion rate calculator

**Web Services
Repository**

INPUT (standard XML / HL7 message):

- Drug Code (National Code and/or ATC code)
- Dose data
- Patient data



**Medimecum SP Engine
(Hosted in Medigest
Servers or in
customer's intranet
Servers)**

Doctor prescribing through
-Electronic Health Record
(DIS / HIS) with Medimecum
SP connection
Or
- Our web platform checking
his virtual prescription online

SP Module: Physician Inputs

- Commercial or Generic Drug Code (National Code and/or ATC code)
- Dose data (single and daily dose, frequency, duration, administration procedures)
- Known allergies
- Patient data (age, sex, weight, size, ICD-coded diseases, creatinine levels or clearance, blood analysis parameters, etc.)

Technical specifications

**Web Services
Repository**



OUTPUT

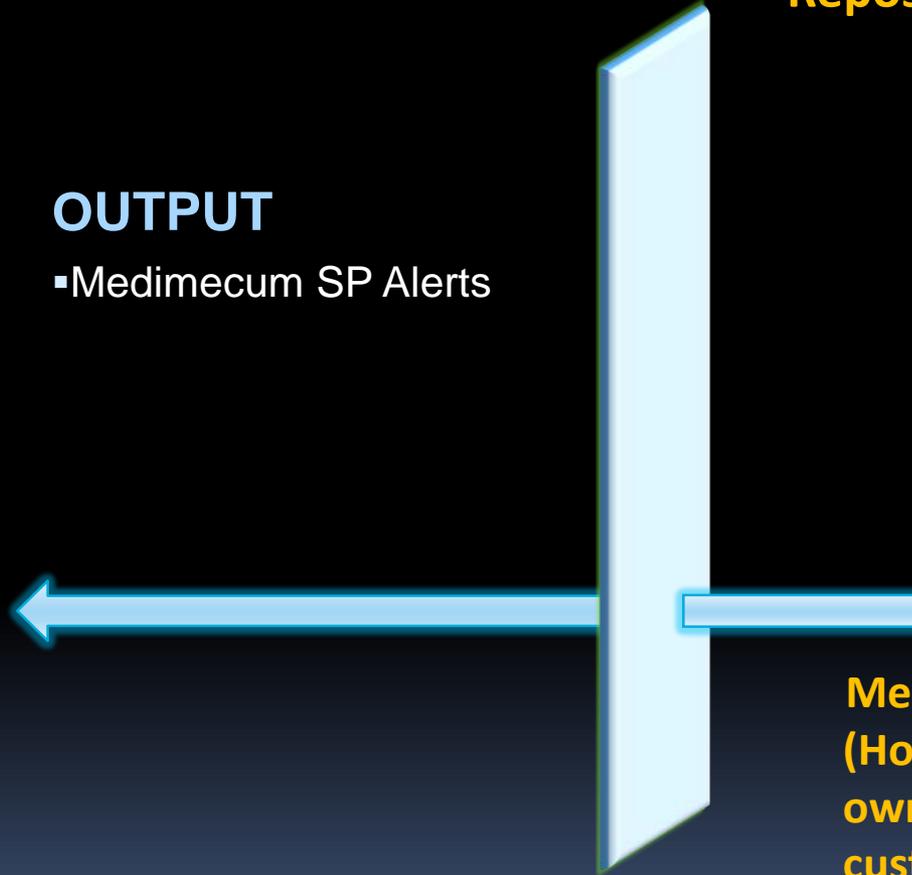
- Medimecum SP Alerts

Doctor receives this
output:

- Integrated into it's own EHR system
- Or
- Inside a new window in his web browser



**Medimecum SP Engine
(Hosted in Medigest
own Servers or in
customer's intranet
Servers)**



SP Module: Alerts (I)

- Non-standard duplicate drug use
- Overdosage
- Drug Interactions:
 - Presence of interaction
 - Interaction characteristics: description, mechanism, potential severity, documentation support, management
 - Interaction with food and herbal products

SP Module : Alerts (II)

- Drug dose adjustment need in advanced age
- Drug dose adjustment need or contraindication in renal insufficiency, according to CrCl (ml/min) or severity level
- Drug dose adjustment need or contraindication in hepatic insufficiency, according to severity level
- Precaution or contraindication in pregnancy and lactation

SP Module: Alerts (III)

- Incompatibility of IV drugs and solutions
- Precaution or contraindication with other concurrent diseases
- Impaired psychomotor/driving performance
- Need of drug dose modifying in smokers

SP Module: Interface & App

- Graphic interface and text log for alerts
- Fully customizable by the physician: preference-based selection of trigger thresholds
- Application modalities:
 - Independent routine that interchanges data with the customer prescription system
 - Seamless integration with the electronic medical record (EMR) manager: custom-build integrated solutions

Summary

- Increasing demand from professionals and patients for easier and integrated CDS systems and safer prescription process
- Medimecum Suite Clinica offers on-line help, decision-making support and real-time alerts of non-standard drug duplication, allergies, interactions, over dosage and relevant cautions/contraindications