Community Pharmacists, Health Care (Digital) Data, and… Research

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COI

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Why do we need (much) more HC data ?

1. Asthma care 2006-2016
2. Qualitative study on asthma care

Asthma care in France over 10 years

Original Article

Changes in Persistent Asthma Care and Outcomes From 2006 to 2016 in France

Manon Belhassen, PhD[a], Maëva Nolin, MSc[a], Anjan Nibber, PhD[b], Marine Ginoux, MSc[a], Gilles Devouassoux, MD, PhD[c], and Eric Van Ganse, MD, PhD[a,c,d] *Lyon, France; and Oxford, United Kingdom*

Increased OCS,in parallel to…

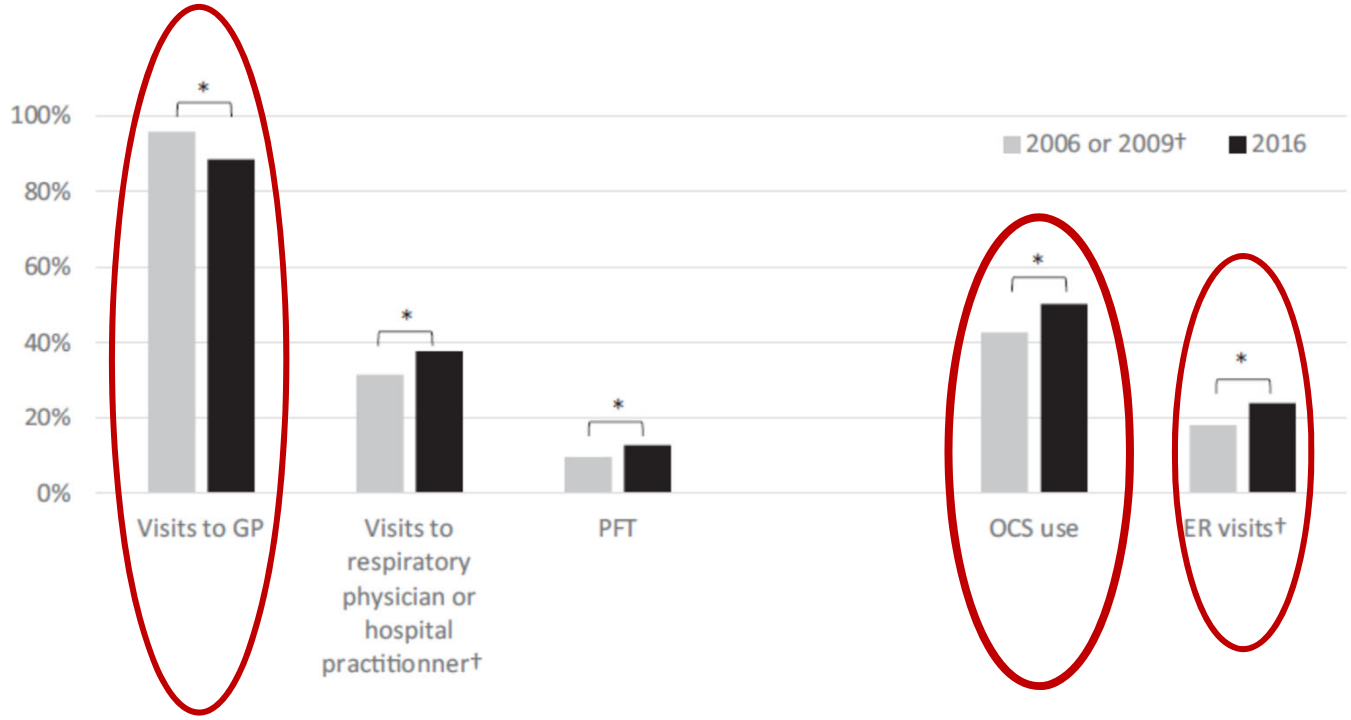


FIGURE 3. Health care resources utilization and markers of asthma outcomes in the AUP. *$P < .05$ when comparing 2006/2009 versus 2016. †2006 or 2009.

…replacement of GP visits by ER visits

Qualitative study on asthma care

npj | Primary Care Respiratory Medicine

www.n

ARTICLE OPEN

Asthma patients' perception on their care pathway: a qualitative study

Anissa Hannane[1], Lilia Misane[1], Gilles Devouassoux[2,3], Cyrille Colin[4,5] and Laurent Letrilliart[1,5]

npj Primary Care Respiratory Medicine (2019)29:9; https://doi.org/10.1038/s41533-019-0121-2

« A big disorder »

Because of insufficient asthma control in many patients, the collaboration between stakeholders is regarded as a promising strategy to improve asthma outcomes. This study explored the perceptions of French adult asthma patients on their care pathway. We conducted a qualitative study based on the interviews of 30 asthma patients aged 18–40 years, recruited in French primary care. We performed a thematic analysis of the data collected, using the NVivo software. According to the patients, the stakeholders involved in asthma management included those visible to healthcare professionals (patient, general practitioner, specialist(s), pharmacist, physiotherapist, family and friends) and those concealed by the patients (complementary and alternative practitioners); other stakeholders, such as nurses and occupational physicians, were not involved. Asthma management at diagnosis and follow-up phases proved to be unstructured, and were associated with poor patient education. This was supported by patients' ambivalence (in relation to illness and treatments), poor communication between patients and healthcare professionals (lack of listening and use of inappropriate vocabulary by physicians, underreporting of alternative medicine use by patients) and weak cooperation between professionals (limited to interaction between the general practitioner and the specialist, either pulmonologist or allergist). Asthma management would probably benefit from a more coordinated care pathway at each phase of the disease that is consistent with the expectations and goals of the patients. It should be based on improved organization (involvement of other healthcare professionals and the patient as partners) and processes (regular follow-up, specific tools such as peak flow meter or action plan).

Health Care Professionals (HCPs: SPE & GPs) prescribe a lot –not always 'in a rational way'- with few explanations on the condition, therapy, appropriate behaviours, ….

In short, in France as in many countries

-suboptimal quality of care…

-unsatisfied patients

-poor outcomes, with:

low HRQOL

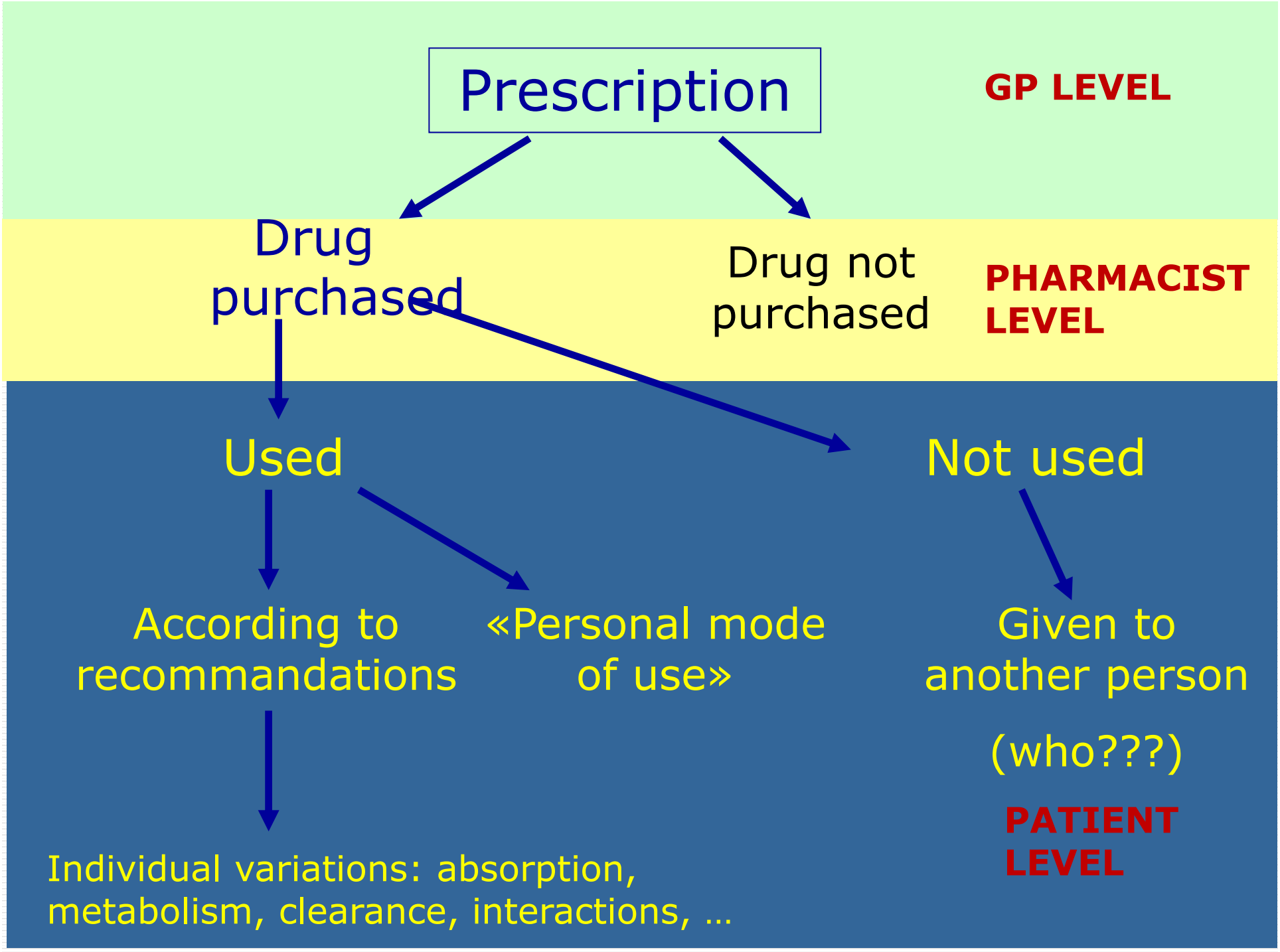
high MRU

-HCPs: ‘solitude’ = no interactions

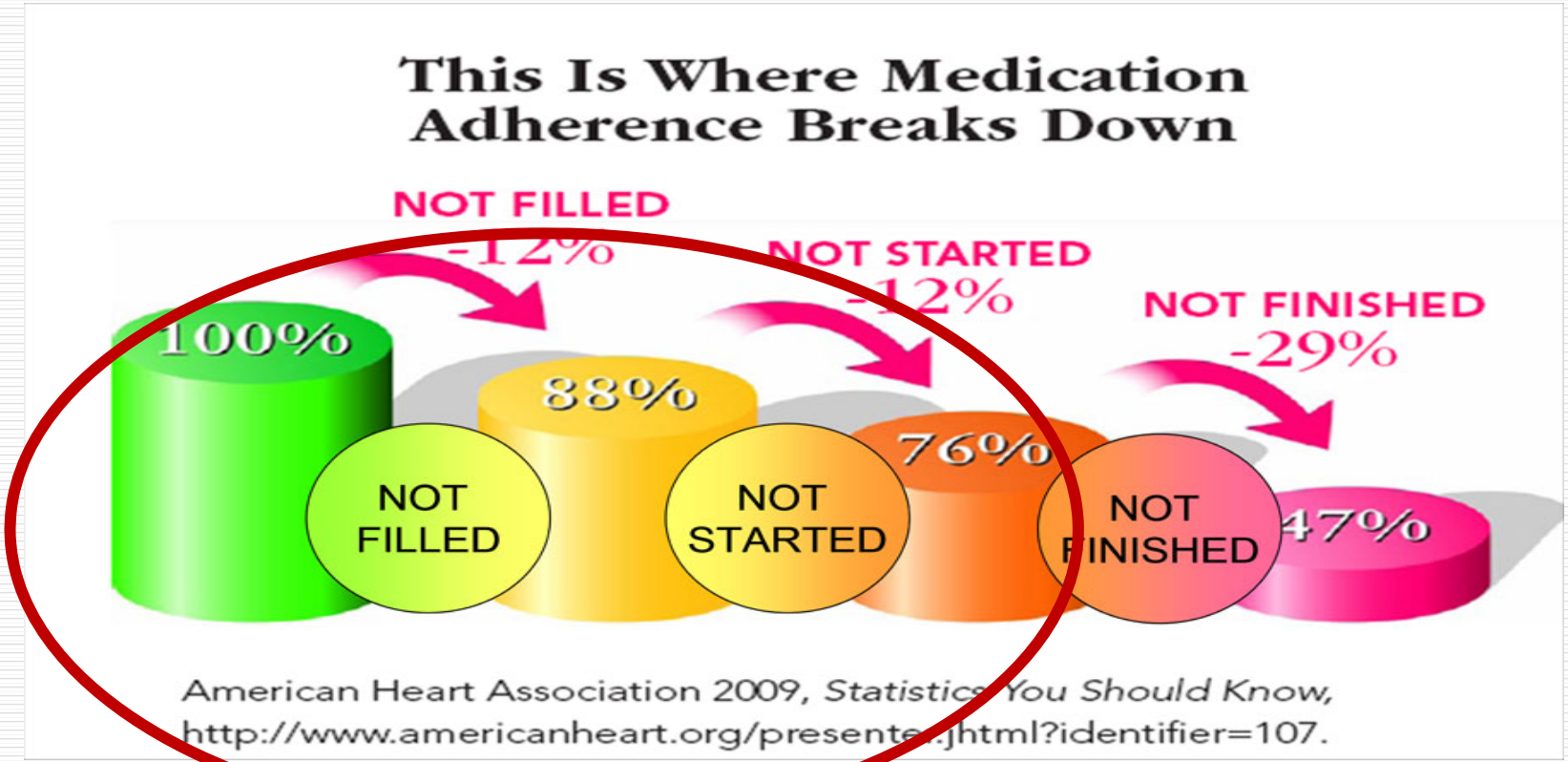
-unmet needs+++

To understand and to act, we need DATA!

1. Reminder: the drug use circuit
2. Clinical Research: basic notions
3. Study designs
4. The Community Pharmacists (CPs)


Prescription
GP LEVEL
Drug purchased
Drug not purchased
PHARMACIST LEVEL
Used
Not used
According to recommandations
«Personal mode of use»
Given to another person
(who???)
PATIENT LEVEL
Individual variations: absorption, metabolism, clearance, interactions, …

Keep in mind: many successive ‘losses’ in the drug use circuit…..



The issue of « adherence »…

Keep in mind ‘bis’: besides adherence, several factors determine the **« true exposure »** to therapy

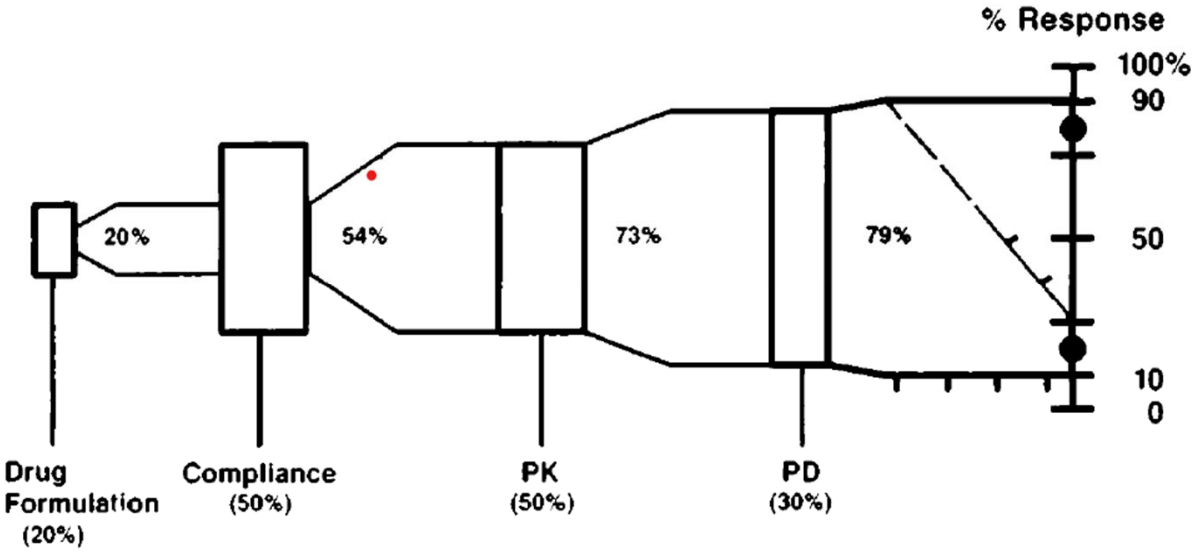


FIGURE 3. Sources of variability in drug response in the individual patient.

Gene
Environment
Lifestyle

Harter JJ, Peck CC. Ann N Y Acad Sci 1991;618:563–71.

Clinical Research : History

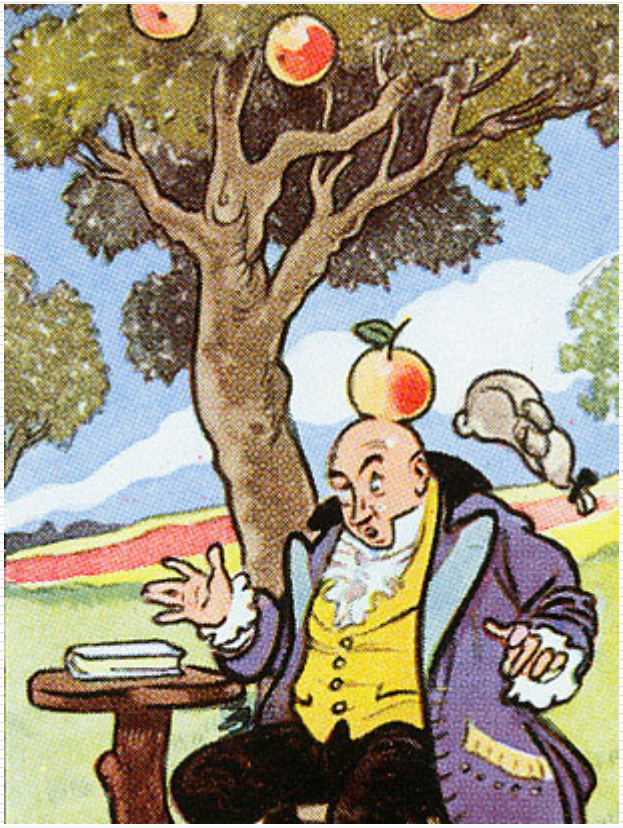
« Norm » in clinical research til 1970 = to observe & to infer : solar system, insects, Newton law,…

Since 1970, two approaches have become widely available:

- To observe
- To experience (to intervene)

To observe = to be ‘ecological’ = Papageno

Newton and the apple



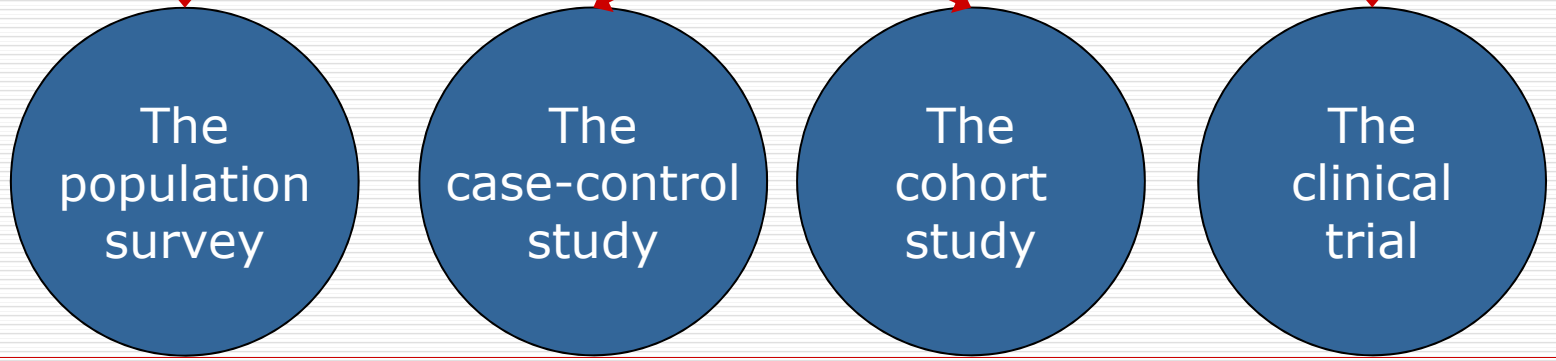
Did he say: « to understand what happened, I need a RCT? »…

Human studies: analogies/differences

Descriptive study
- in populations
- frequency
- distribution by :
  - time
  - place
  - person

Analytic or observational study
- in individuals
- test causal hypotheses
- **uncontrolled** assignment

Experimental study
- in individuals
- test causal hypotheses
- **controlled** assignment



Sources to obtain a research dataset

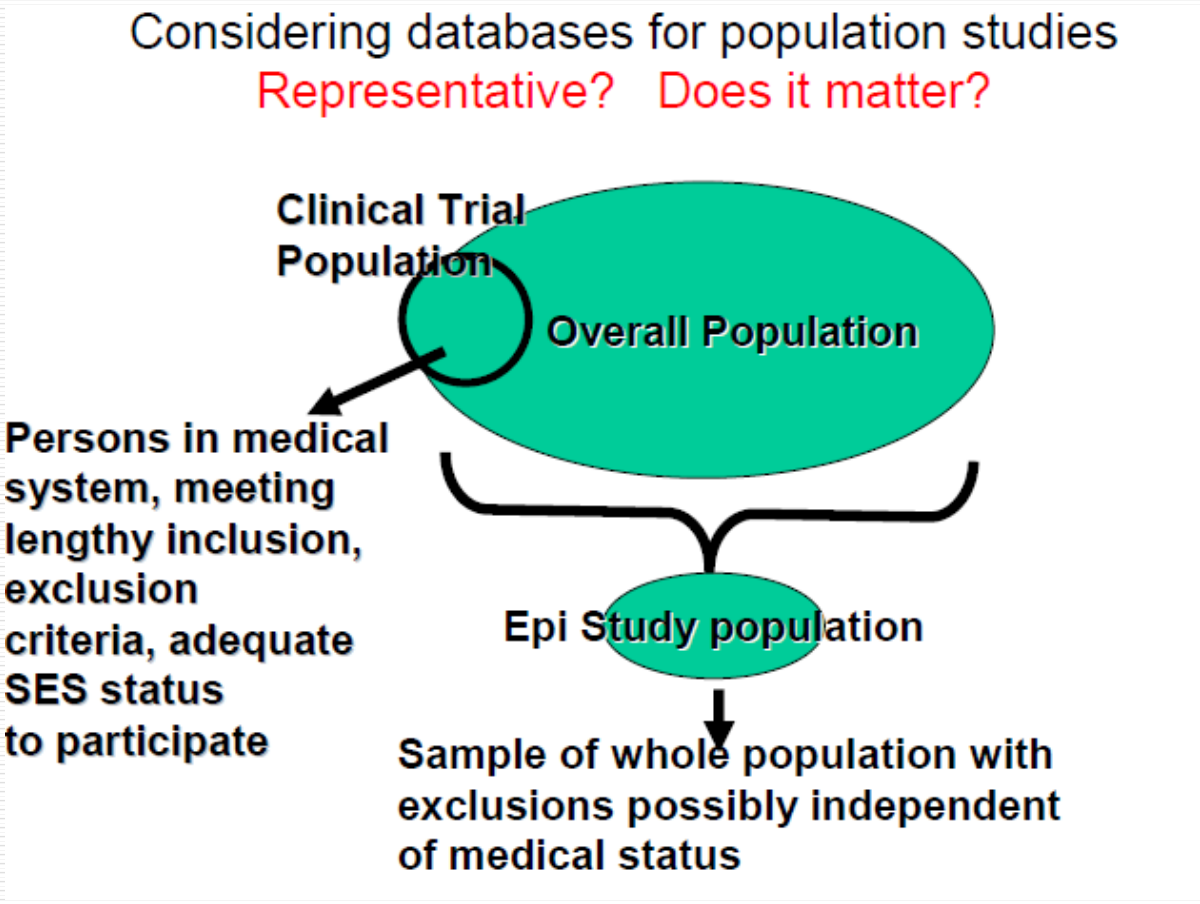
- *Ad hoc* (created for specific study(ies)
  - Already created but analysis specific to your study
  - Created for your study

- Administrative (created for purpose other than epidemiology studies)-
  - usually for payment (US Claims data), or
  - public health monitoring (GPRD)

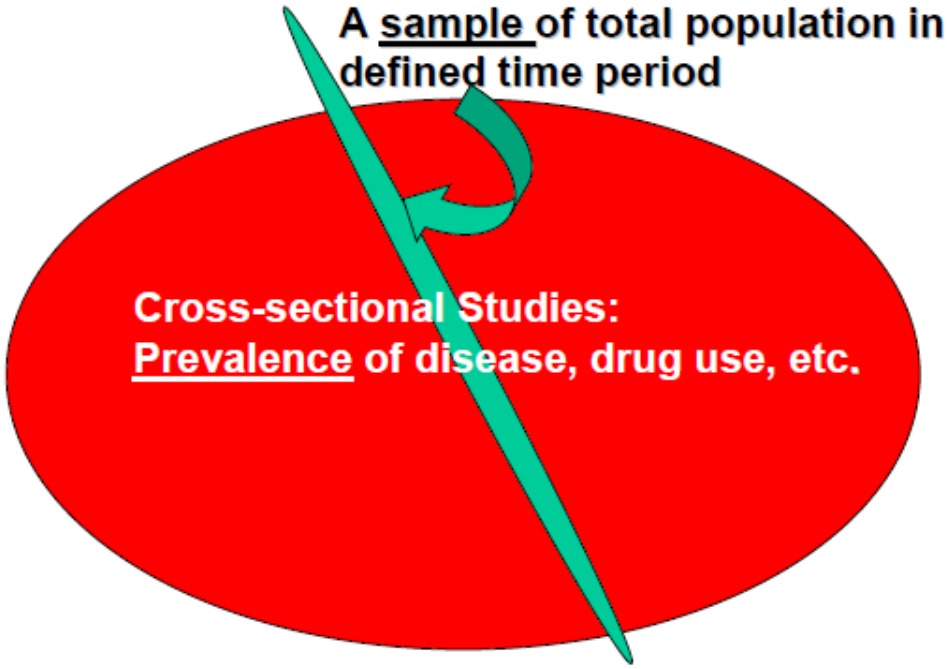
Populations

KEY : External validity!

Representativity!!



Cross-sectional studies



Prevalence DATA: How many people have disease x?
How many are taking drug y?...
in a defined time period.

Cross-sectional studies

Cross sectional

Census,
Surveys
= 1 x look
(prevalence)

Other examples:

- Marketing Surveys (IMS, etc.)
- National Statistical Surveys (NHANES)

Longitudinal studies

What is Longitudinal Population Data??

Health Care Data: Example of a Medical Claims Profile

Pt ID: xx32546 M 69

Longitudinal

DATE	DX	RX	Procedure	Provider	$
5/6/03	Osteoarthritis			P-4536	75
5/7/03		Ibuprofen		Ph 3356	30
5/10/03			Arthroscopy	P13456	1500
5/21/03	Diabetes			P-5589	75
		Glyburide		Ph 3356	50
5/25/03	Arthritis			P-4536	75
		Feldene		Ph 9807	75
			ECG	P14465	70
6/15/03	GI Bleed		Hospitalization	H33421	9800

Clinical Research : summary

- Today, first paradigm: observational methods are not robust, thus not reliable, thus *of limited interest*
- Second paradigm : **only** the experimental approach is able to provide 'robust' (high level) evidence
- Third paradigm: RCTs **always** deliver robust data
- These beliefs are reinforced by the impact of EBM and its ranking of the level of evidence

Moses presenting the ranking of evidence (true picture!)

Thou shall perform RCTs only!

Reminder: RCTs do have limitations, and may be of better/lower quality

- Won't identify rare effects (ex: LABAS and mortality in asthma)
- Not appropriate to identify long-latency AEs
- Exclusion of many groups of patients (elderly, smokers, persons 'at risk of pregnancy', …)
- Limited duration (weeks>months>years)
- Specific dosing (recommanded)
- Particular physicians/patients (« compliant »)
- …

High (+/-) internal validity
Low external validity

Potential role of the CP

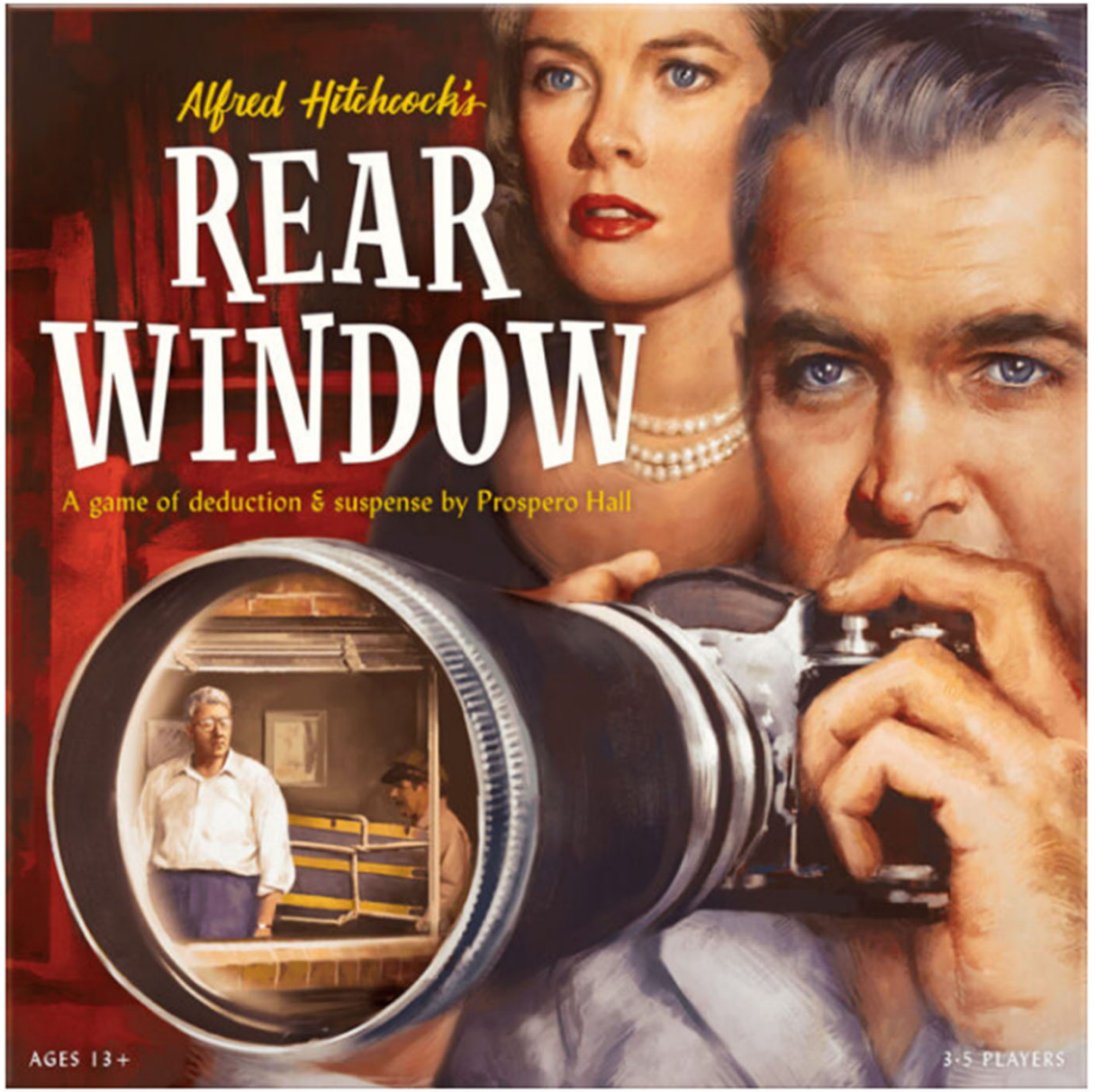
She/he is in a « key position »:

Intermediate step between the 'killer' (GP) and the 'victim' (patient)…

The murder has been scheduled (Rx)

BUT

it may still be 'prevented' by the CP, …& the CP was not 'involved' (neutral)


Alfred Hitchcock's
REAR WINDOW
A game of deduction & suspense by Prospero Hall
AGES 13+
3-5 PLAYERS

Availability of digital data

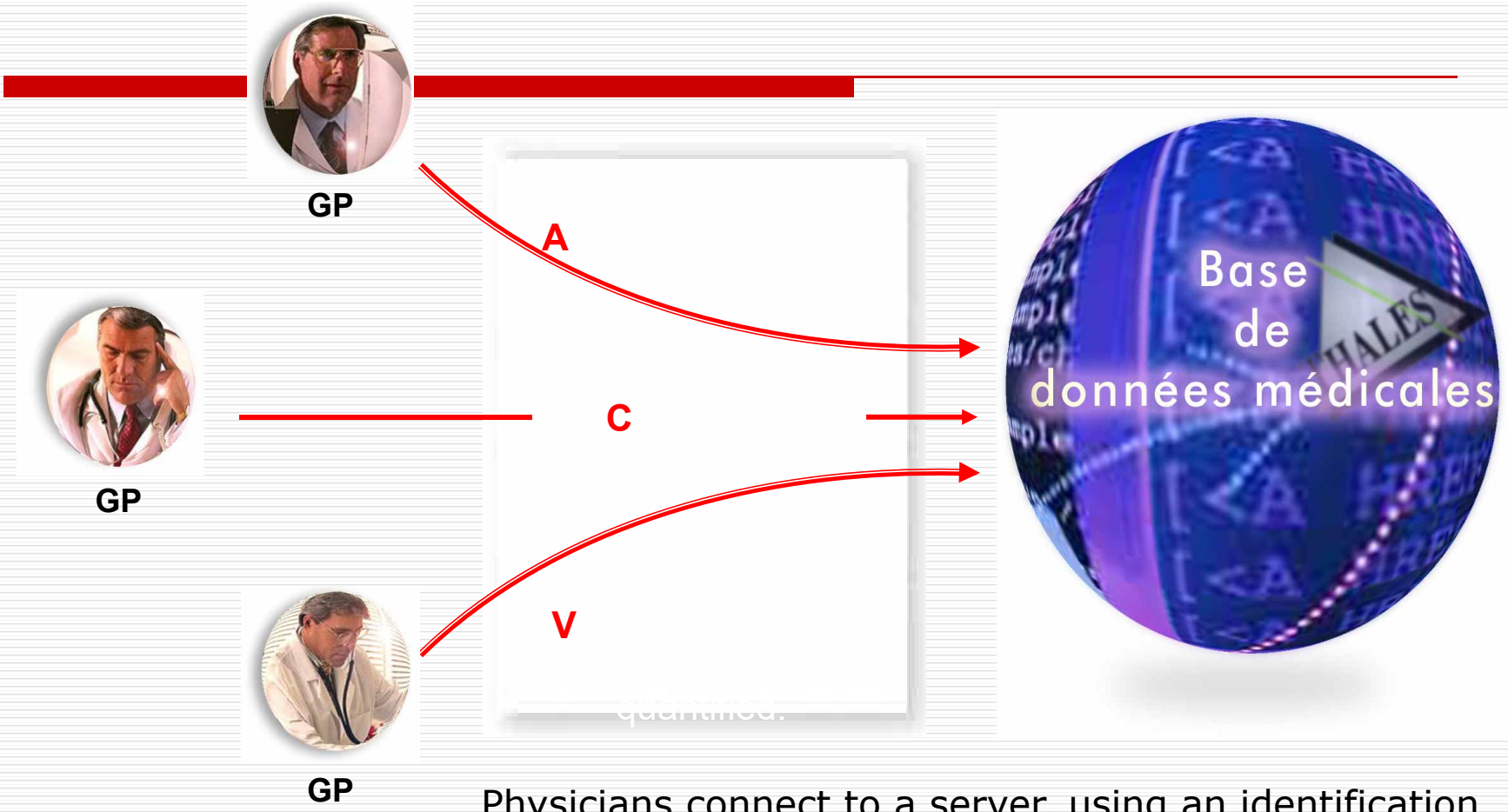
1. Prescribing Data
2. Refill Data
3. Claims Data
4. Linkage between digital data and other data sources
5. Illustrations

PRESCRIBING DATA

=Electronic Medical Records (EMRs)

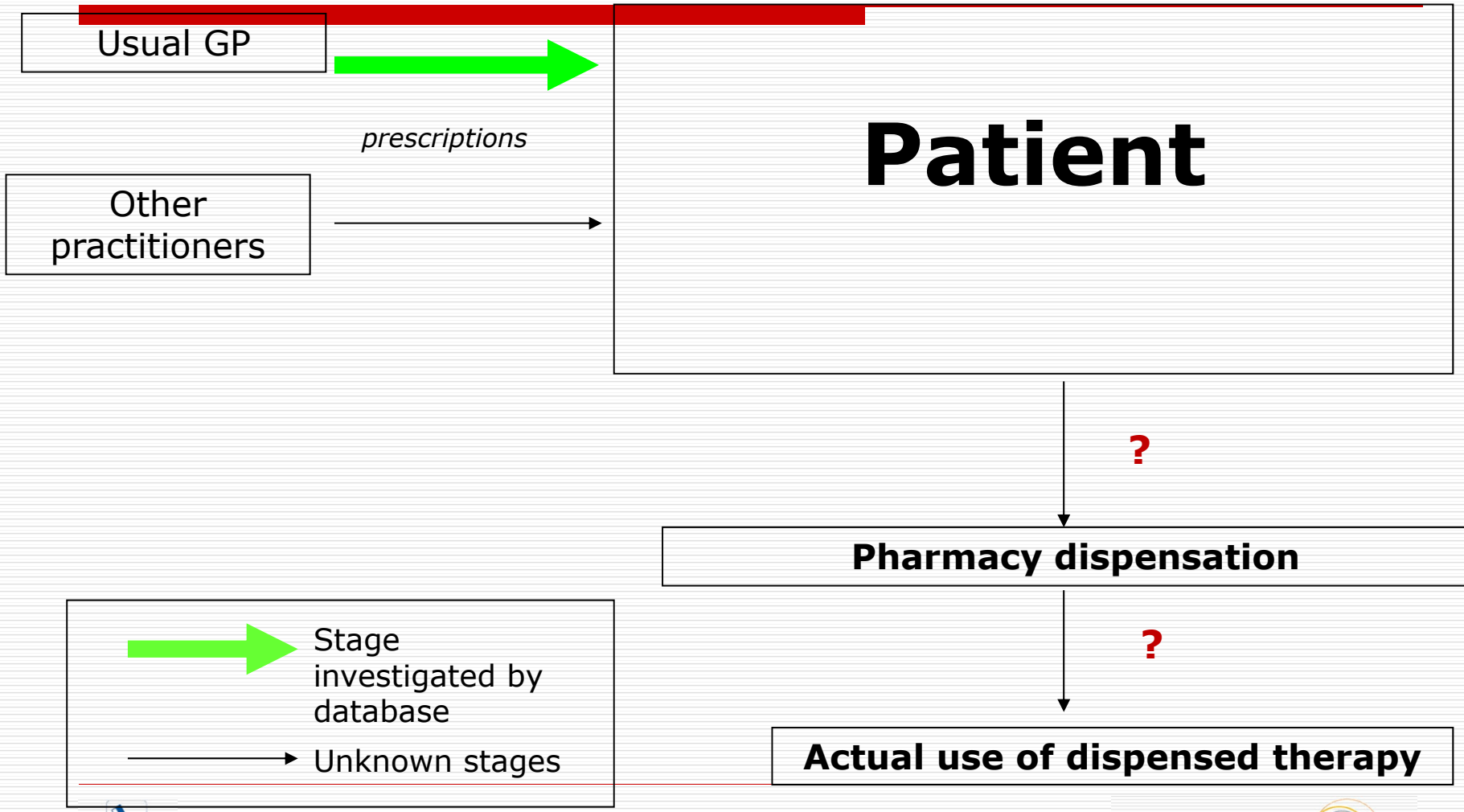
(Ex: Disease Analyzer, IQVIA)

Remote data transmission



Physicians connect to a server, using an identification number and a password. Then, they transmit the captured data to a software.

Prescribing data



Prescribing Data

Administrative	Observation	Prescriptions
Patient ID **DOB** **G**ender **O**ccupation: ?? **H**eight /Weight : ?? **B**P / pulse : ?? **V**accines: ??	**D**ate of visits **D**isease history **R**isk factors : Tobacco, alcohol HBP, diabetes Hyperlipidemia Allergy **6**.000 symptoms, signs **4**.000 diagnoses **G**enital Life : Contraception Pregnancy Menopause **W**orkers' Accident, professional disease	**D**rugs : (linked to a diagnostic) Scheme Treatment duration Cost **C**omplementary exams : Biology: ?? Technical investigations: ?? **Referrals** to specialists: ?? **S**ick leave: ?? **N**on-medical care

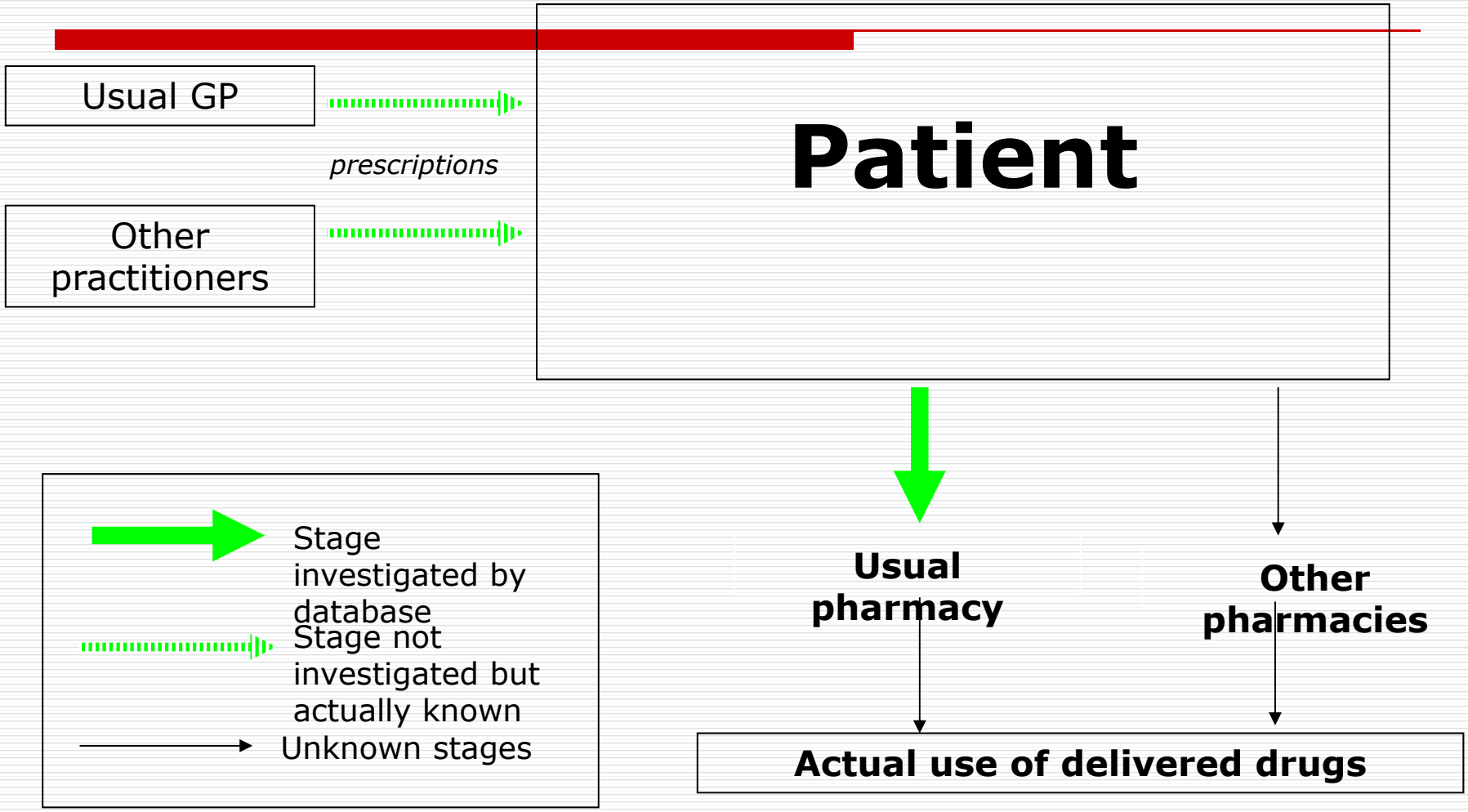
In theory, many data – practically, many fields are not updated: smoking, BMI,..

EHRs: usual areas of research

- "MARKETING": MARKET SURVEYS, PRICE APPLICATION, PRESCRIPTIONS FOLLOW-UP
- "SCIENCE"
  - Burden of disease ("unmet needs")
  - Quality of care
  - Drug Use studies, but…
  - Safety studies
  - Effectiveness studies (CER)
  - …

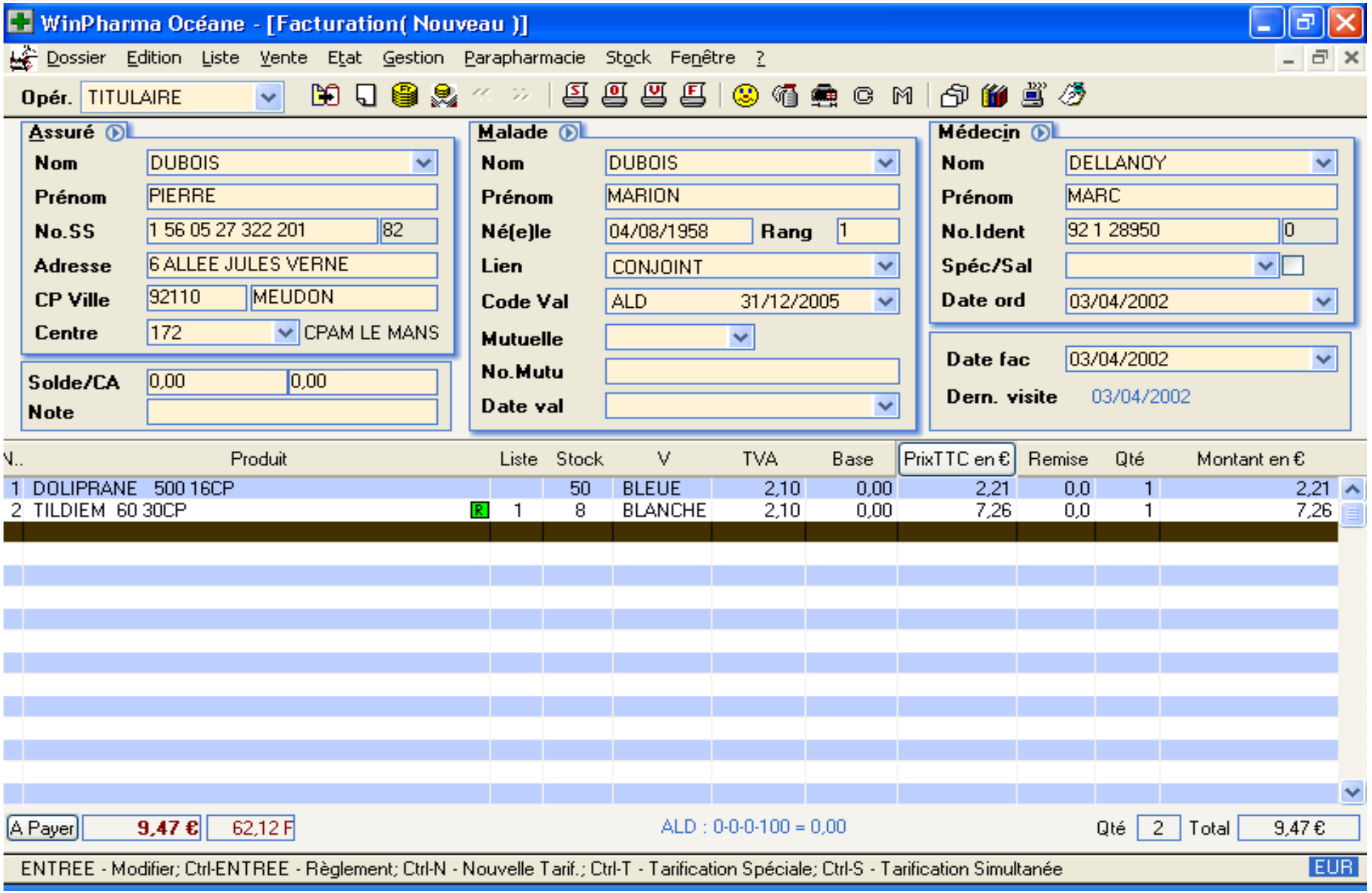
DISPENSING DATA

Refill data (pharmacies)



* If delivered by usual pharmacy

Pharmacy data



Missing data (but…)

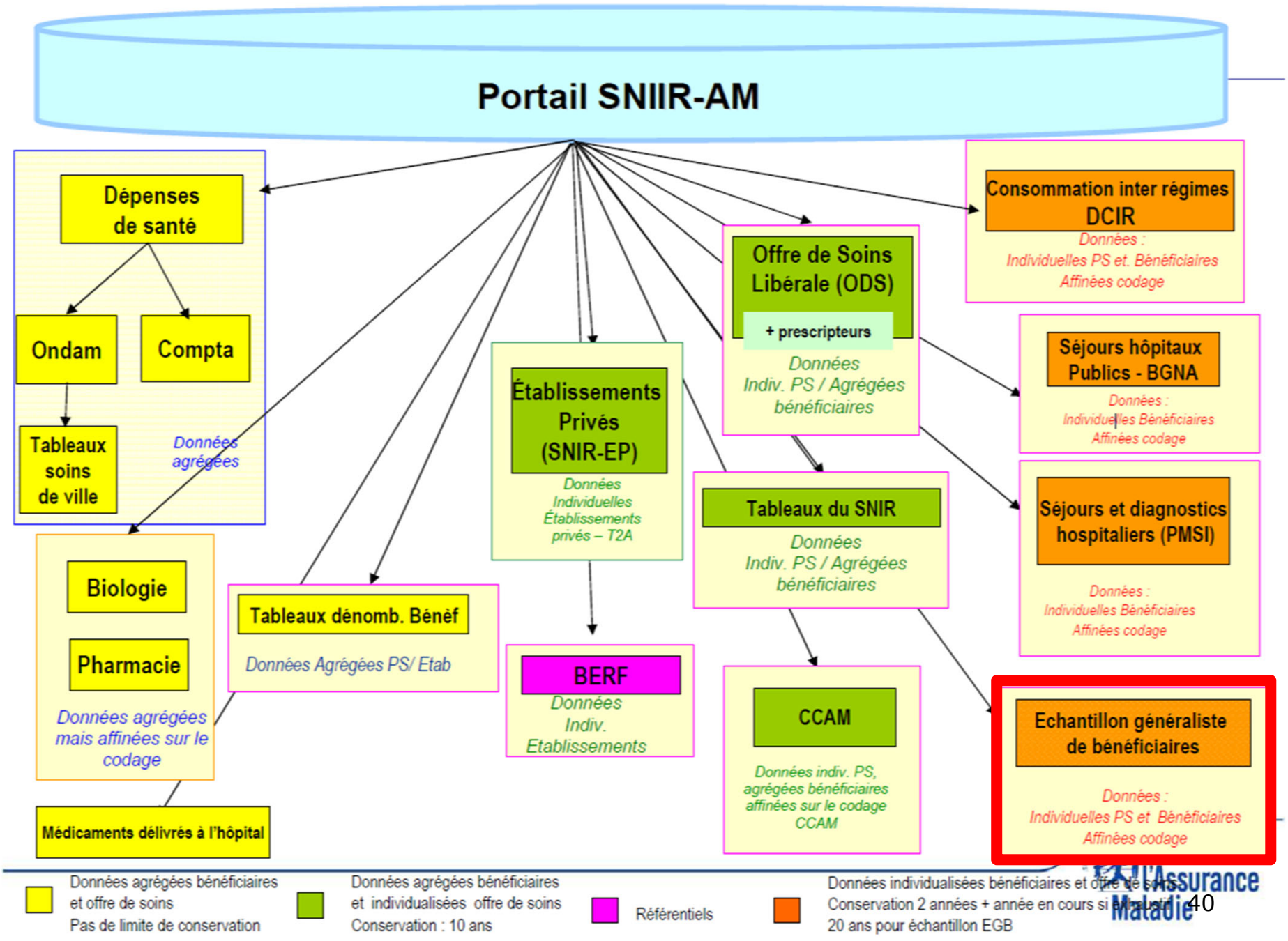
- Medical history (I and II care)
- Diagnosis (validity?)
- Patient reported data (PROs, PREMs): « disease control », « satisfaction », quality of life, adherence,…
- Patient's characteristics: SES, family life, income, smoking, BMI, diet…
- Patient's "health behaviour": health literacy,…

Information may/must be added<linkage to Q or other data

CLAIMS DATA

Example : « French NHS »

- Context :
  - Centralized organization of the National Health System (“France”)
  - **All** reimbursed health care (Medical Resource Utilization) for **all** residents (exhaustivity!)
- Structure :
  - Système National d’Information Inter-Régimes de l’Assurance Maladie (SNIIR-AM) with a linkage of I and II care at individual level


Portail SNIIR-AM
Dépenses de santé
Ondam
Compta
Tableaux soins de ville
Données agrégées
Biologie
Pharmacie
Données agrégées mais affinées sur le codage
Médicaments délivrés à l'hôpital
Tableaux dénomb. Bénéf
Données Agrégées PS/ Etab
Établissements Privés (SNIR-EP)
Données Individuelles Établissements privés – T2A
BERF
Données Indiv. Etablissements
Offre de Soins Libérale (ODS)
+ prescripteurs
Données Indiv. PS / Agrégées bénéficiaires
Tableaux du SNIR
Données Indiv. PS / Agrégées bénéficiaires
CCAM
Données indiv. PS, agrégées bénéficiaires affinées sur le codage CCAM
Consommation inter régimes DCIR
Données : Individuelles PS et. Bénéficiaires Affinées codage
Séjours hôpitaux Publics - BGNA
Données : Individuelles Bénéficiaires Affinées codage
Séjours et diagnostics hospitaliers (PMSI)
Données : Individuelles Bénéficiaires Affinées codage
Echantillon généraliste de bénéficiaires
Données : Individuelles PS et Bénéficiaires Affinées codage
Données agrégées bénéficiaires et offre de soins
Pas de limite de conservation
Données agrégées bénéficiaires et individualisées offre de soins
Conservation : 10 ans
Référentiels
Données individualisées bénéficiaires et offre de soins
Conservation 2 années + année en cours si actualisé
20 ans pour échantillon EGB

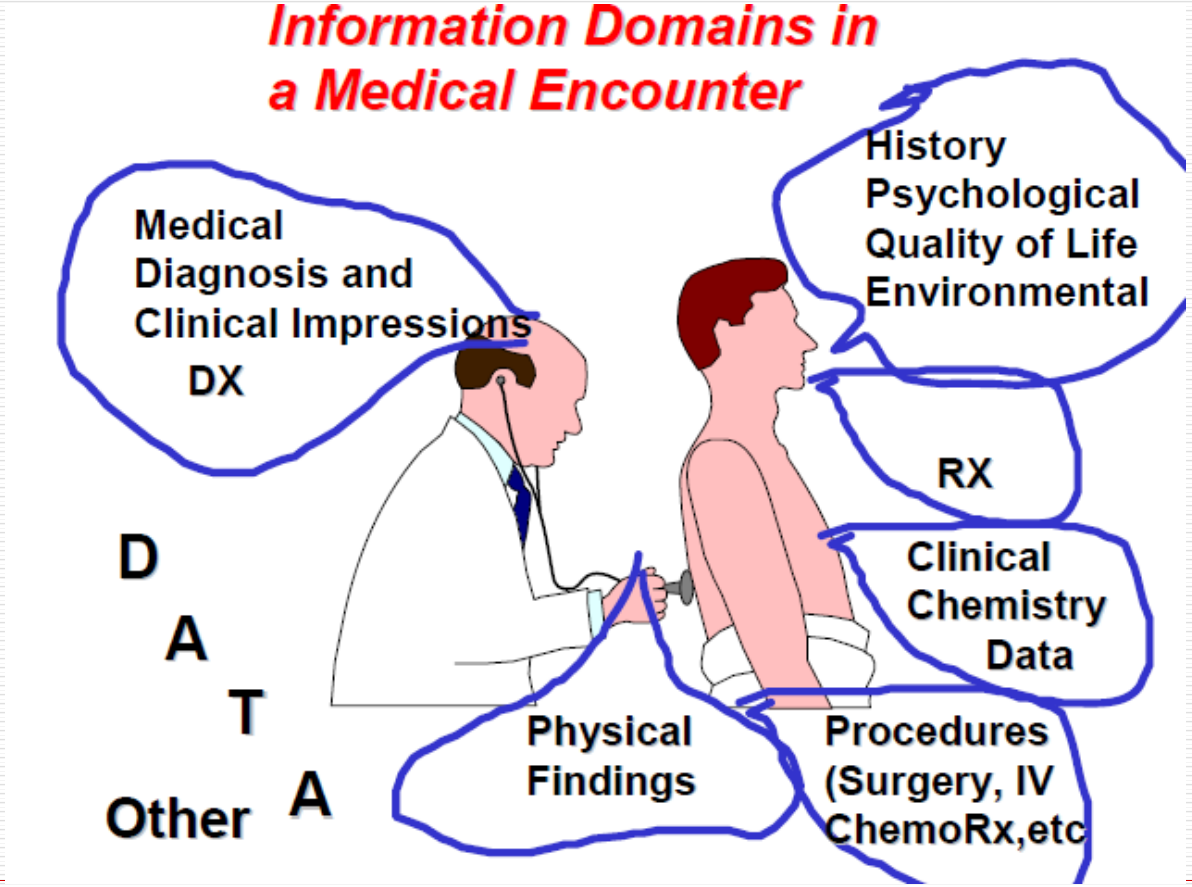
Available data (SNIIRAM claims)

- On **Beneficiaries** (individual, anonymized) information, ie medico-administrative (LTD number, number of occupational diseases, discharge diagnoses from hospitals in ICD-10, date of pregnancy, …)
- On **Benefits**: detailed identity of all acts, dates, and costs
- On **HCPs** (individual, anonymized): unique ID, gender, age, medical specialty, type of practice, conventional status, region
- On **Hospitals**: all resource use in hospitals, with details (ex: successive wards) and diagnoses (DRGs)

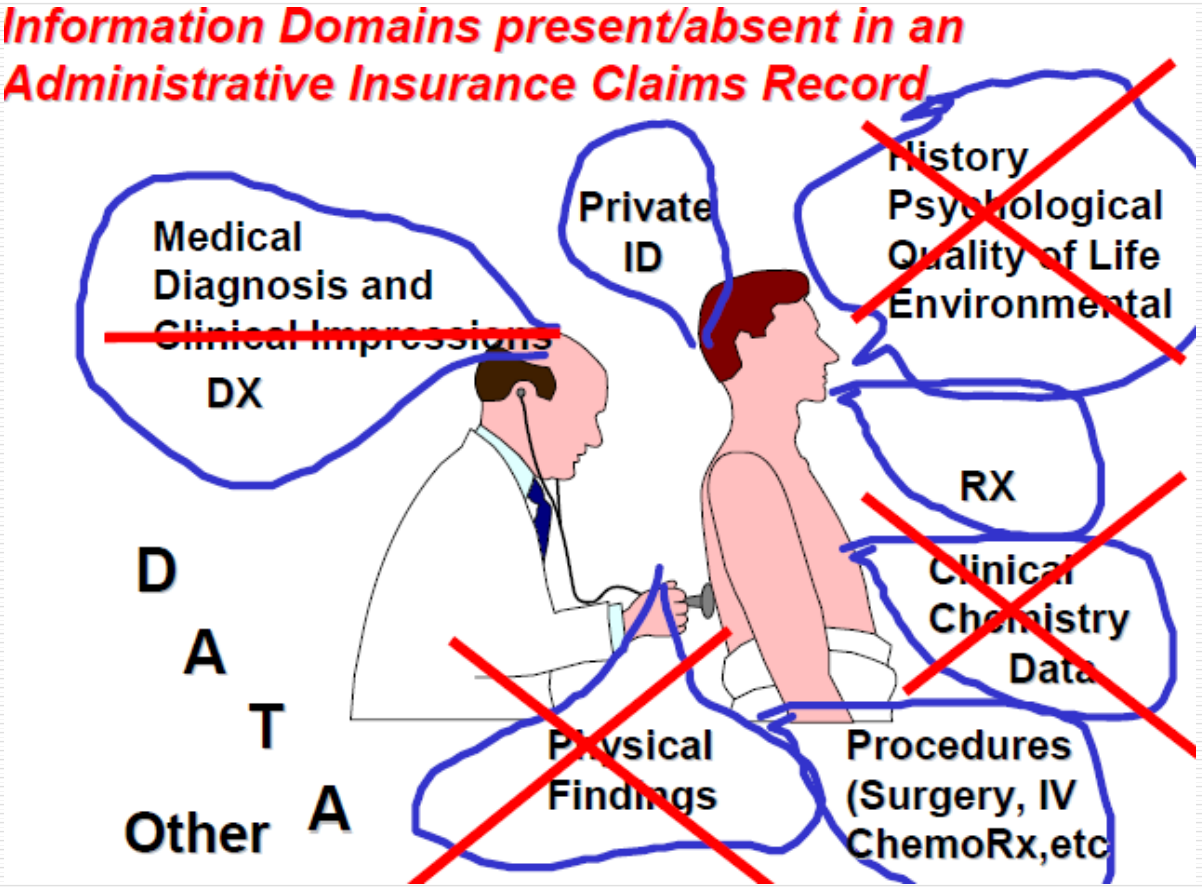
Quick comparison

- Electronic Health Records
- Claims (& pharmacy, ie a subset)

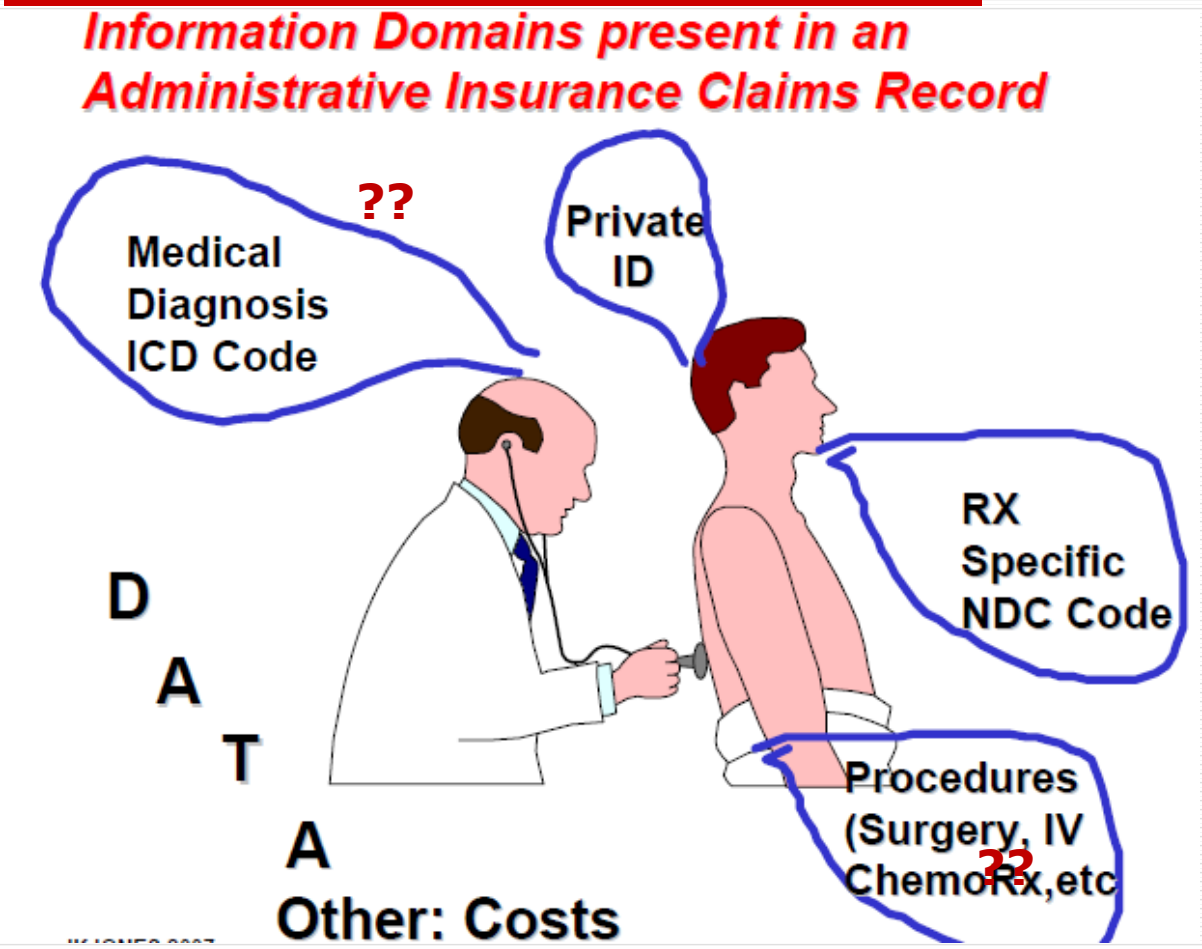
Electronic Health Record (EHR)



Claims Data


Information Domains present/absent in an Administrative Insurance Claims Record
Medical Diagnosis and Clinical Impressions DX
Private ID
History Psychological Quality of Life Environmental
RX
Clinical Chemistry Data
Procedures (Surgery, IV ChemoRx,etc
Physical Findings
D A T A
Other

Pharmacy Data



Linkages !! to
-Q (PROs, PREMS,…)
-measures (PEFR, glycemia, BP,…)
-EHRs (Scotland)
=

ENRICHMENT

Summary : some pros of digital data

- Valid recording of the use of therapy over long periods : **no recall bias**
- Valid trt use info(**claims/dispensing>prescribing**)
- Large numbers!
- Identification of **difficult-to-reach patients** (elderly people, self-care conditions, nomadism…)
- **Long term follow-up** (cancer: delayed effects of treatments)
- **Accessibility** (costs, time, resources)
- **Exhaustivity/external validity** (claims, some EHRs, some pharmacy networks)
- **"Non-suspect"** data (collected before the study hypothesis is made)

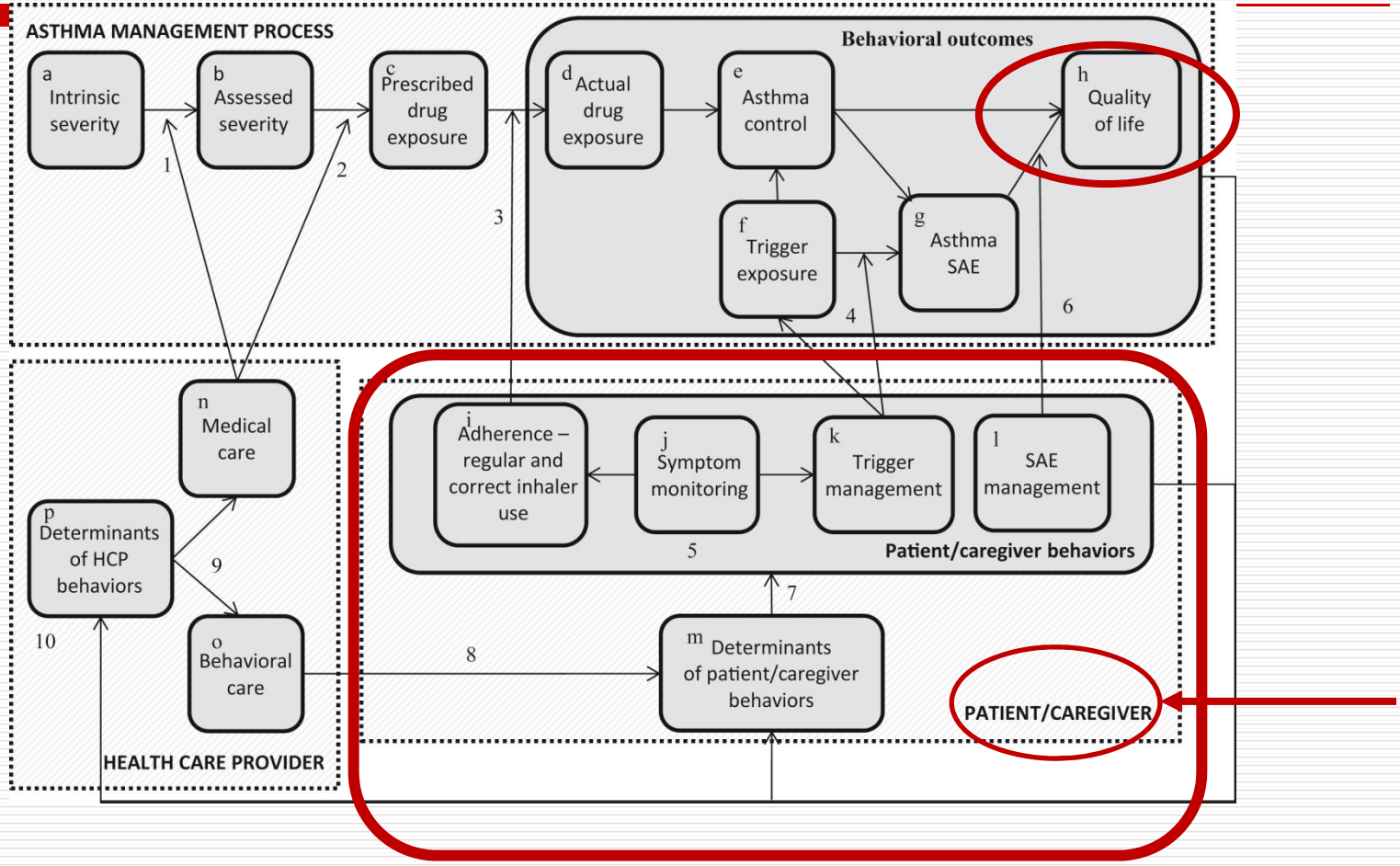
Summary : some cons of digital data

- Do not necessarily account for «true» patients' consumption (cf drug circuit)
- Limited info on important patients' characteristics (ex: SES, smoking, diet, weight,…), either < not recorded, **or not updated** (!)
- Potential **selection bias** (in the US: few 'general population' databases), ie external validity??
- Sometimes **incomplete** data (missing/aberrant data), particularly for prescribing data (EHRs)

Summary : some cons of digital data

- Use of **VALID proxies** for specific conditions (no diagnosis or doubtful diagnosis) or for specific outcomes when no ad hoc data are recorded (ex: exacerbation of asthma=OCS)…
- Originally designed for *administrative, financial, or organisational purposes*, and not for research (quality? missing info?...): **complex data management (claims)**

CAVE: before starting a project, make efforts to 'understand' the condition… -list the stakeholders, processes, determinants of outcomes- Ex: Asthma



Illustrations

- **Observational study** : all 3 types of datasets and linkage with PROs: **the RATIO project**

- **Interventional study** in asthma: **the Pharmasthma II project**

RATIO project

RELATIVE EXPOSURE TO INHALED CORTICOSTEROIDS

Background

- Irregular use of inhaled corticosteroids in asthma (ICS) is a common cause of poor control and adverse outcomes (OCS… A&E…)

- In claims data, the "ICS-to-total-asthma-therapy" ratios (R) have shown interest to identify asthmatics more at risk of exacerbations, as a result of **insufficient exposure to ICS for their level of severity**. As a result, subjects with ratios > 0.5 had fewer exacerbations.

Objectives

- Objective: to look at the distribution (%) of the ratios of asthmatic patients, and to link individual ratios to individual outcomes

- Three studies of R in EU:
  - 1/ **Validation** of ratios and thresholds in France, « Pharmasthma I data »
  - 2/ **Claims** data in France
  - 3/ **Prescribing** data (FR & UK)

Methods

Exposure

Ratio = N dispensed units ICS / N dispensed units asthma therapy

Outcomes

- **Markers of asthma exacerbations (MAEs):** asthma-related hospitalizations, visits to GPs, use of oral steroids (OCS) or antibiotics (ATB)

Analyses

The outcomes were studied during a 12-month period in:

- Non ICS users (R=0%)
- Low-ICS-ratio group (0<R<50%)
- High-ICS-ratio group (R≥50%).

PHARMASTHMA I study (survey, validation)

PHARMACOEPIDEMIOLOGY AND DRUG SAFETY 2014; 23: 958–964
Published online 19 June 2014 in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/pds.3668

ORIGINAL REPORT

Relative exposure to controller therapy and asthma exacerbations: a validation study in community pharmacies†

Laurent Laforest[1], Idlir Licaj[1], Gilles Devouassoux[2], Gérard Chatté[3], Manon Belhassen[1], Eric Van Ganse[1,2]* and Geneviève Chanba[4]

[1]Lyon Pharmaco-Epidemiology Unit, UMR 5558 CNRS, Claude Bernard, Lyon 1 University, Lyon, France
[2]Respiratory Medicine, Croix-Rousse University Hospital, Lyon, France
[3]Calluire et Cuire, France
[4]Pharmakeion, Lyon, France

Asthma Control (Asthma Control Test) and perception of disease/therapy according to ratio values (n=919)

	R = 0% N=86	0%<R< 50% N=456	R ≥ 50% N=344	p
Inadequate control (ACT global score, %)	**48.8%**	**66.4%**	**47.1%**	**<0.0001**
Limitation in daily activities most/all the time	3.3%	**11.4%**	8.8%	0.046
Breathlessness ≥ daily	30.0%	**36.2%**	26.3%	0.01
Nocturnal awakenings ≥ twice a week	17.1%	**26.7%**	17.1%	0.0022
Use of rescue therapy ≥ daily	34.1%	**36.7%**	23.5%	0.0003
Self-perception of poor control	7.8%	**10.6%**	6.5%	0.12
Patient perception of disease/therapy				
Asthma is a major concern/handicap	32.9%	**49.8%**	37.2%	0.0002
Perception of adverse events attributed to asthma therapy	40.0%	**65.5%**	58.5%	<0.0001

Laforest L, Licaj I, Devouassoux G, Chatté G, Belhassen M, Van Ganse E, Chanba G. Relative exposure to controller therapy and asthma exacerbations: a validation study in community pharmacies. *Pharmacoepidemiol. Drug Saf.* 2014; 23: 958–964.

CLAIMS RATIOS : results


ORIGINAL ARTICLE
ASTHMA

Asthma drug ratios and exacerbations: claims data from universal health coverage systems

Laurent Laforest[1], Idlir Licaj[1], Gilles Devouassoux[2], Gérard Chatte[3], Jennifer Martin[1] and Eric Van Ganse[1,2]

Table 1: Reimbursed medical resource use (2007) according to ratio R= ICS-to-total-asthma-therapy value (n=2,162)

	R = 0% N=404	0%<R< 50% N=792	R ≥ 50% N=966	p
≥ 1 asthma-related hospitalisation	0.50%	**1.89%**	0.21%	0.0007
≥ 1 dispensing of oral corticosteroids (%)	34.6%	**53.3%**	42.2%	<0.0001
Units of oral corticosteroids (mean)	0.5	**1.2**	0.9	<0.0001
≥ 1 dispensing of antibiotics(1) (%)	56.1%	**71.1%**	61.9%	<0.0001
Units of antibiotics(1) (mean)	2.1	**3.4**	2.9	<0.0001
Medical visits (mean)	5.4	**7.0**	5.7	<0.0001

(1) Beta-lactams, cephalosporins (first to third generations), macrolides and fluoroquinolones

Ability to detect patients at increased risk of AE !...

PRESCRIBED RATIOS (EMRs): Results

Prescription levels of oral corticosteroids & antibiotics, and medical visits according to ratio R= ICS-to-total-asthma-therapy (n=4,587)

	R = 0% N=1176	0%<R< 50% N= 1358	R ≥ 50% N= 2053	p
≥ 1 prescription of oral corticosteroids (%)	21.9%	**36.1%**	30.4%	<0.0001
Units of oral corticosteroids (mean)	0.6	**1.2**	0.8	<0.0001
≥ 1 prescription of antibiotics(1) (%)	46.5%	**55.7%**	53.0%	<0.0001
Units of antibiotics (mean)	1.3	**2.2**	1.7	<0.0001
Medical visits (mean)	5.3	**6.5**	5.6	<0.0001

(1) Beta-lactams, cephalosporins (first to third generations), macrolides and fluoroquinolones

Low prescribing of ICS to patients by GPs may increase the risk of exacerbations! …Ability to assess QOC at individual practices (prerequesite for interventions)

Laforest L, Licaj I, Devouassoux, Caillet P, Chatte G, Eriksson I, Belhassen M, Van Ganse E. Asthma therapeutic ratios may be easily computed in Electronic Medical Records : one step closer to the truth. BMC Family Practice 2015

INTERVENTIONAL STUDY

Impact of community pharmacists' interventions on asthma control and perception of therapy and disease

Laurent Laforest[1], Eric Van Ganse[1], Mélanie Broquet[1], Geneviève Chamba[2]

Affiliations:
[1] Pharmacoepidemiology, CHU- Lyon, France
[2] Pharmakeion, Lyon, France

Context

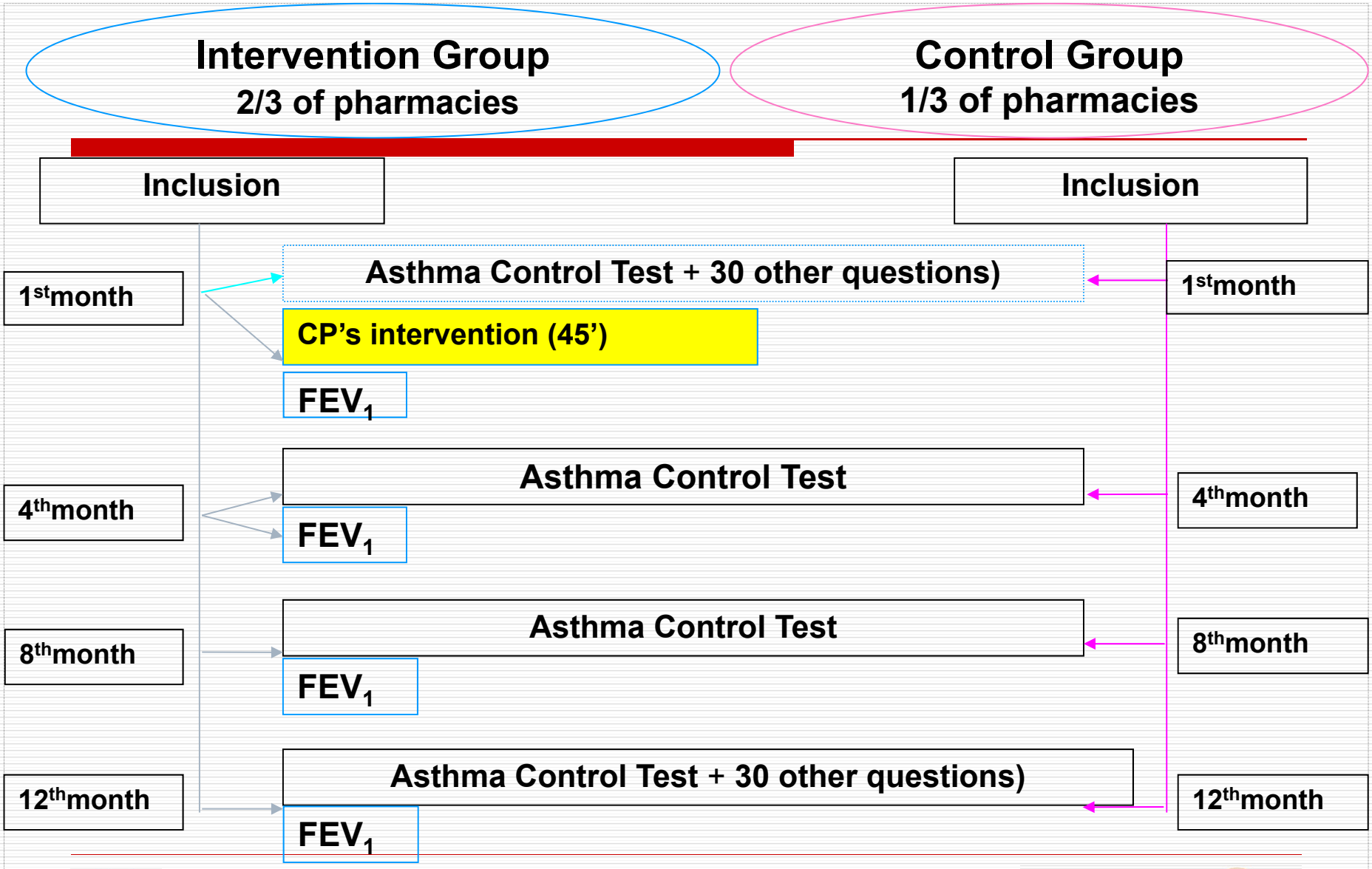
- Community Pharmacists (CPs) have regular contacts with ‘chronic patients’
- CPs are well positioned to detect inadequate management of patients suffering from chronic diseases, such as asthma (eg, adherence)
- In regions where there is a “shortage” of family practitioners, or no Self-Care Training, CPs could help manage asthma

Study design

- A prospective evaluative pharmacy-based study was conducted in 2006 in France. Pharmacies were **randomised** in two groups (Intervention and Reference groups)

- In the intervention group, pharmacists were trained for educational intervention with asthma patients

OVERALL STUDY DESIGN



CPs' intervention (1)

- In the intervention group, patients received at inclusion a (45') educational training from the pharmacist, focused on fundamentals of asthma, action of therapy, and asthma self-care

- The action of asthma therapy was explained ("inflammatory condition, anti-inflammatory therapy") together with the need for regular use of controller (maintenance) therapy

CPs' intervention (2)

- Management of triggers and exacerbations, interpretation of perceived symptoms, and identification of early signs of asthma crises and emergency situations were discussed
- Then, specific suggestions corresponding to each patient's situation were provided, along with educational material
- Pharmacists also instructed the patient how to use inhaler devices properly

Data collected

- Each patient completed a self-questionnaire at inclusion (T0) and 12 months afterwards

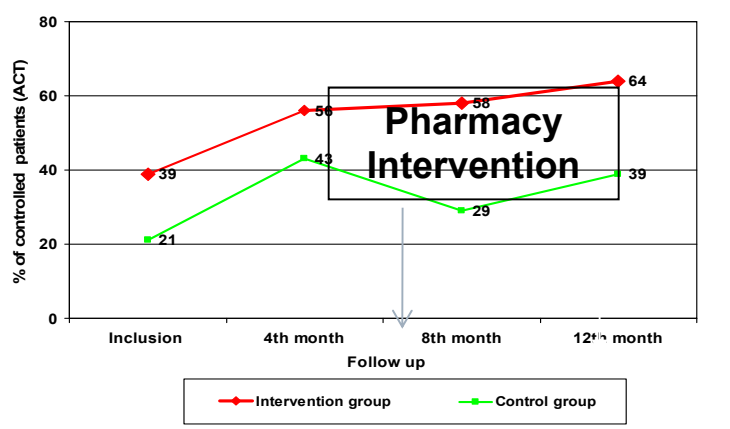
- Questions referred to patients' characteristics, Asthma Control Test (ACT), declared adherence to ICS, understanding and perception of disease and therapy, LOC, and medical resource utilisation

Results

- Analyses were conducted in 125 and 28 patients in the Intervention and Control groups, respectively

- 76 out of 125 patients in the Intervention group had inadequate control at inclusion (61%). They were 22 out of 28 in the Control group (79%)

Change in control status (all patients)



« Contamination »… CPs in the control group were unhappy to be there, and CPs « speak with each others »…

125 patients in the Intervention group and 28 in the Control group

Future = linkage between recorded digital data and other datasets

- DD rarely include PROs/PREMs

- A linkage allows to study prescription or drug refill according to personal or medical characteristics: disease control, quality of life, patients' satisfaction (including therapy), …

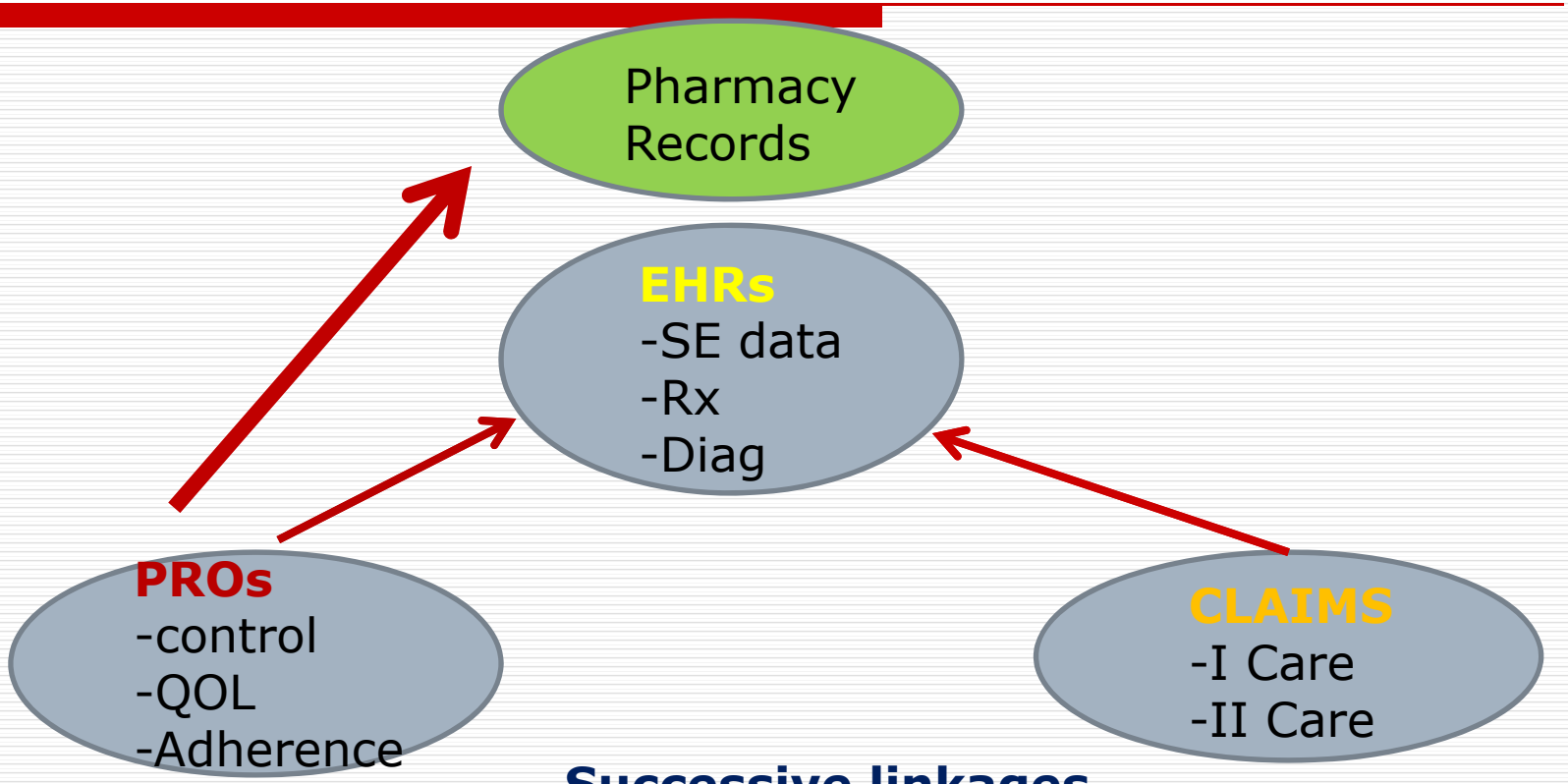
Linkage between health care DD and other data

- In practice
  - Treatments obtained from database (no recall bias!)
  - Other data are collected < questionnaires, ideally filled online and linked to the treatment database

- In practice

  The number of available patients is limited by logistical factors – Cave the quality of **sampling** (external validity) and the quality of **linkage** and **regulatory approvals** !(CH!!)

Data linkage: a possible approach



Successive linkages

Ideal entry doors= GPs (EHRs)
Or…
CPs (conditions…)

Community Pharmacists, Health Care (Digital) Data, and… Research

- As a rule, QOC is not optimal (‘*Menschen sind Menschen*‘)
- The patients should be at the center of care (education, empowerment)
- CPs are ideally placed to observe (Papagenos) and to intervene

Community Pharmacists, Health Care (Digital) Data, and… Research

- There is a need for:
  - Data (high quality digital data, high quality studies)
  - Training/Expertise (internal, external)
  - HCP networks (CPs, GPs, SPEs, nurses,…) to collect complementary data
  - Public Health objectives, to be supported by 1 or more stakeholders (public> academia> regulators> payors industry>…)
  - Motivation!

Aknowledgements

- PEL, then PELyon, 15 persons headed by Manon Belhassen
- ETP-asthme Croix Rousse, 4 people
- Many trustful patients
- Colleagues: Respirologists, GPs, **and … CPs!!**

Exemples d'études réalisées en Pharmacie (méthodes & résultats)

Pr Geneviève CHAMBA
Pharmacienne, PharmaKeion
Dr Eric Van GANSE
Pharmaco-épidémiologiste,
Faculté de Médecine Lyon Sud

Paris, 24 avril 2007

2 types d'études en officine

Etude observationnelle

- Etat des lieux de la prise en charge globale des patients
  - Cerner les besoins
  - Repérer les lacunes
  - Identifier les points d'action potentiels

Etude interventionnelle

- Mise en place de procédure de suivi de patients

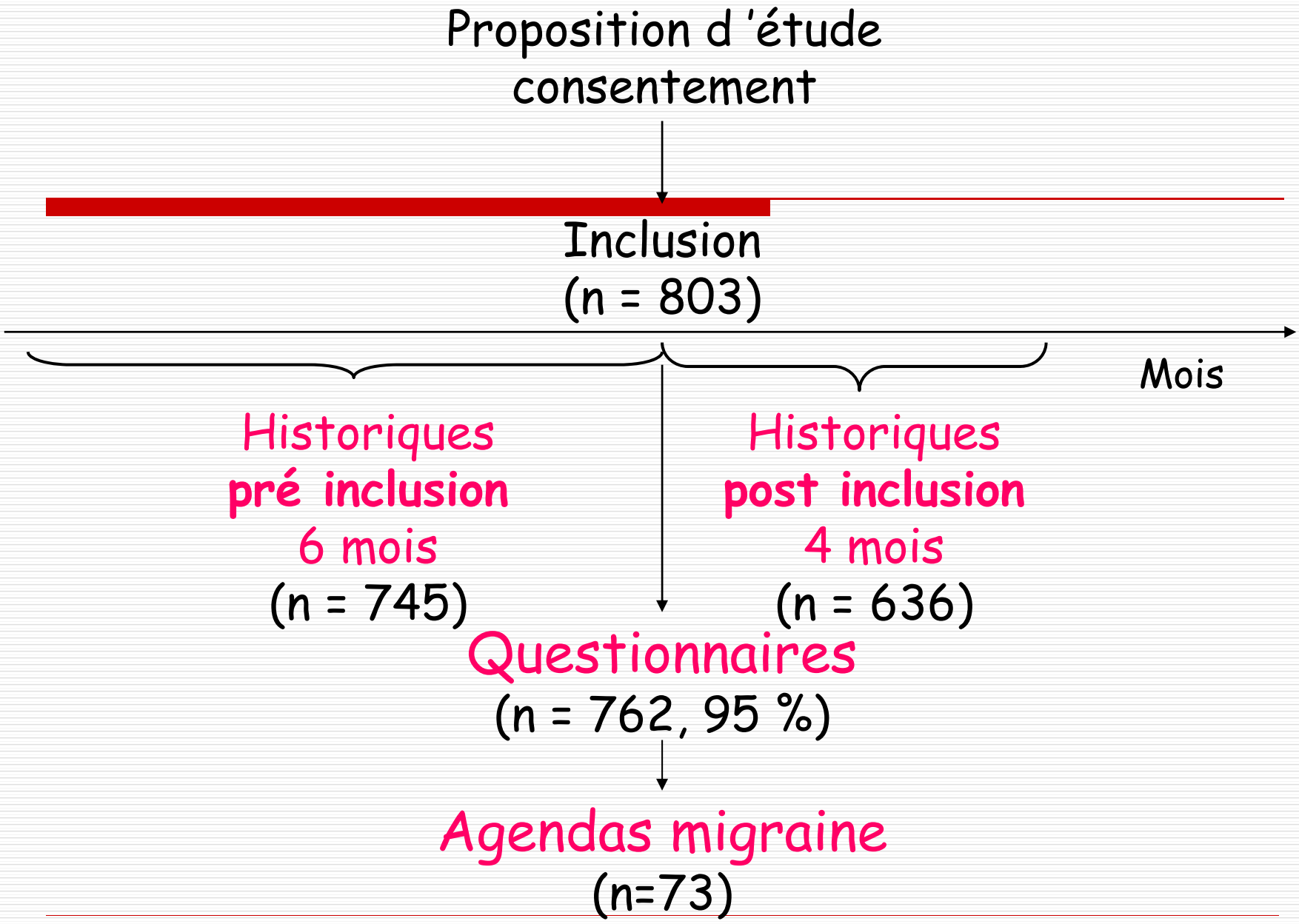
Etudes observationnelles : des thèmes variés

- **Conseils pour pathologies hivernales** (2001)
- **Diabète de type 2** (2001-2002)
- **Migraines et céphalées** (2002-2003)
- **Asthme** (2003-2004)
- **Traitement par anticoagulants** (2004-2005)
- **Personnes âgées polymédiquées** (2004-2005)
- **Prévention du risque cardiovasculaire chez la personne en surpoids** (2005-2006)

La migraine à l' officine

- Pathologie fréquente et invalidante
- Pathologie sous diagnostiquée : traitement par auto médication et grand nombre de patients vus exclusivement à l'officine
- Approche de la consommation médicamenteuse
- Peu d'études réalisées à l'officine

(Lantéri-Minet et al., Rev Neurol, 2004)


Proposition d 'étude
consentement
Inclusion
(n = 803)
Mois
Historiques
pré inclusion
6 mois
(n = 745)
Historiques
post inclusion
4 mois
(n = 636)
Questionnaires
(n = 762, 95 %)
Agendas migraine
(n=73)

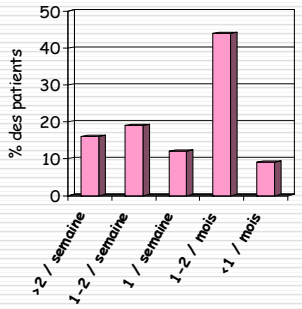
Questionnaires patients

- Histoire de la maladie, vécu du patient
- Prise en charge médicale, médicamenteuse
- Hygiène de vie
- Information , connaissance

Consommation médicamenteuse

- Médts antalgiques non spécifiques
- Médts antalgiques spécifiques
- Médts de traitement de fond
- Médts hors prescription

Fréquence des crises (n = 745 patients)



Près d'1 patient traité
sur 2 souffre d'
1 crise ou + par semaine

➔ **Insuffisance de prise en charge ?**

Pour 84 patients (11 %),
douleurs en permanence
± crises

➔ **Céphalées par Abus Médicamenteux ?**

Quelques champs d'action potentiels identifiés…

- **Insuffisance d'information** des patients sur la gestion optimale des crises, sur l'existence des TTT spécifiques
- **Insuffisance de l'évaluation de l'efficacité** des traitements prescrits
- Trop de prescriptions d'antalgiques sans limite
- Choix pas toujours pertinent des spécialités en conseil

Rôle du pharmacien différent selon les patients

- Pour les patients suivis médicalement : renouvellement des médicaments chaque mois ➔ suivi pharmaceutique

- Pour les patients vus exclusivement à l'officine : automédication et/ou demande de conseils ➔ optimiser la prise en charge

Pourquoi l'asthme ?

- Pathologie fréquente (2 à 3 M de patients)
- Pathologie sous traitée malgré prise en charge codifiée
- Pathologie grave (> 1000 décès/an)
- Qualité de vie médiocre malgré des soins coûteux

(Etude réalisée en 2003-2004 sur plus de 1500 patients à partir de 350

Méthodologie

Proposition d 'étude

Information/consentement

Inclusion des patients

Mois

Historique médicamenteux 6 - 12 mois

Bilans de prise en charge *(faits à l'officine)*

Questionnaires

Questionnaires patients

- Histoire de la maladie, vécu du patient
- Prise en charge médicale, médicamenteuse
- Suivis biologique et clinique
- Hygiène de vie

Consommation médicamenteuse

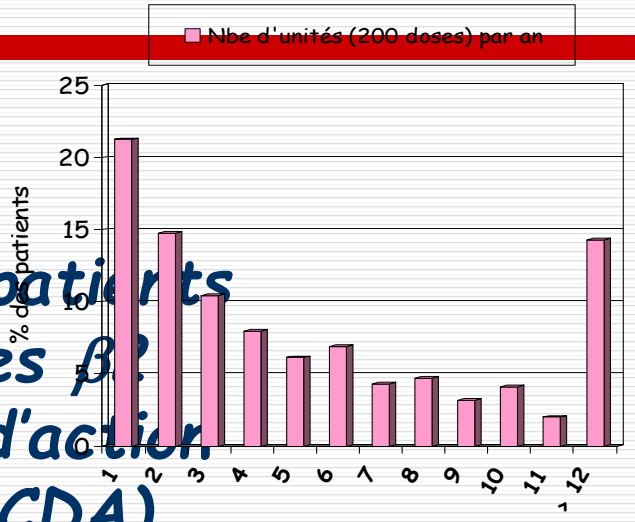
- Médts de l'asthme
- Médts de pathologies chroniques associées
- Médts d 'affections intercurrentes
- Médts hors prescription

Résultats de l'Asthma Control Test (n = 1479)

- 28 % des patients correctement contrôlés
- Gêne dans les activités quotidiennes *:* **40%**

  'quelquefois' ou *'la plupart du temps'*
- Essoufflement quotidien : **25 %**
- Réveils nocturnes > 2 *à 3 nuits /semaine :* **32 %**
- Utilisation quotidienne de β agonistes : **29 %**

Traitements de la crise (n = 1489 P)



71 % des patients utilisent des β2 agonistes d'action rapide (BACDA)

M = 7,2 unités/an

AntiCh + BACDA: 10 %

En résumé, sur les traitements…

- Prescriptions d'anti-inflammatoires : 90 % des P
- Utilisation de β2 agoniste d'action courte : 80 %
  - forte consommation, en moyenne 7,2 U/mois, (corrélée positivement à la consommation déclarée)
  - **14 %** des P utilisent plus d'un flacon par mois
- Episode(s) d'exacerbation de l'asthme : > 40 %

- La prise d'antitussifs (26 %) et de mucomodi-ficateurs (50 %) reliée à un mauvais contrôle de l'asthme (p<0,001).
- L'utilisation d'antihistaminiques (61 %) n'est pas reliée à un meilleur contrôle de l'asthme (p=0,419).
- Consommation médicamenteuse (hors TTT de l'asthme) importante :
  - médts anti-reflux (29 %),
  - psychotropes (30 %),
  - antalgiques (64 %)

- **Champs d'action non médicaux**
- **Mauvais contrôle de l'asthme** ➔ surconsommation de β2-agoniste :
  - inobservance des traitements de fond, effets indésirables, insuffisance de médt ?
- **Information des patients** :
  - sous estimation de la gravité de la pathologie, méconnaissance des objectifs attendus…
- **Traitements non évolutifs ?**
- **Hygiène de vie** : tabagisme, allergènes…

- LAFOREST L., VAN GANSE E., DEVOUASSOUX G., CHRETIN S., BAUGUIL G., PACHECO Y., CHAMBA G. Quality of asthma care: results from a community pharmacy based survey. Allergy 2005, 60(12):1505-10.
- LAFOREST L, VAN GANSE E., DEVOUASSOUX G., CHRETIN S., OSMAN L., BAUGUIL G., PACHECO Y., CHAMBA G. Management of asthma in patients supervised by primary care physicians or by specialists. Eur Respir J. 2006 , 27(1):42-50.
- MEHUYS E., VAN BORTEL L., ANNEMANS L., REMON J.P., VAN TONGELEN I., VAN GANSE E., LAFOREST L., CHAMBA G., BRUSSELLE G. Medication use and disease control of asthmatic patients in Flanders: A cross-sectional community pharmacy study. Respir Med. 2006, 100:1407-1414
- LAFOREST L., VAN GANSE E., BOUSQUET J., DEVOUASSOUX G., CHRETIN S., BAUGUIL G., PACHECO Y., CHAMBA G. Influence of patients' characteristics and disease management on asthma control. Eur Respir J. 2006, 27: 1071
- LAFOREST L., KITIO B., VAN GANSE E., BOUSQUET J., MASSOL J., BAUGUIL G., PACHECO Y., CHAMBA G. Asthma patients' poor awareness of inadequate disease control: a pharmacy-based survey. Annals of Allergy : Asthma and Immunology, in press
- LAFOREST L., VAN GANSE E., BOUSQUET J., MASSOL J., BAUGUIL G., PACHECO Y., CHAMBA G. Patient-reported adverse events under asthma therapy : a community pharmacy-based survey. Clinical Pharmacology Therapeutics, in press

ICS use before and after Asthma Related Hospitalization

Original Paper

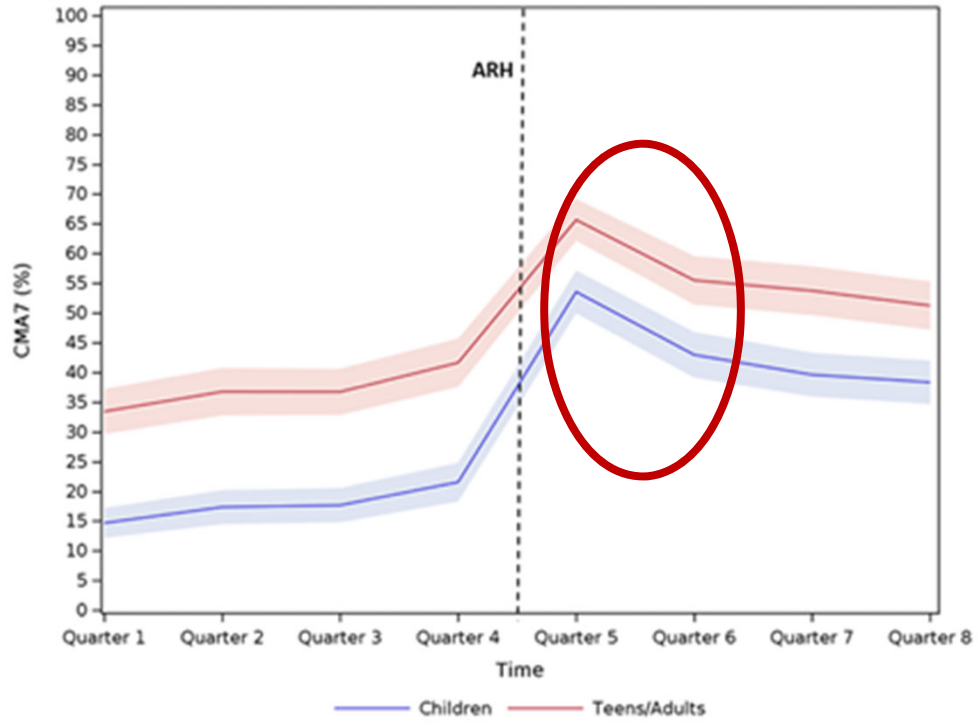
Trajectories of Controller Therapy Use Before and After Asthma-Related Hospitalization in Children and Adults: Population-Based Retrospective Cohort Study

Manon Belhassen[1], PhD; Maeva Nolin[1], MSc; Flore Jacoud[1], MSc; Claire Marant Micallef[1], PhD; Eric Van Ganse[1,2,3], MD, PhD

« Clustering on big data»

Use of ICS : pre/post

CMA-7 before & after ARH

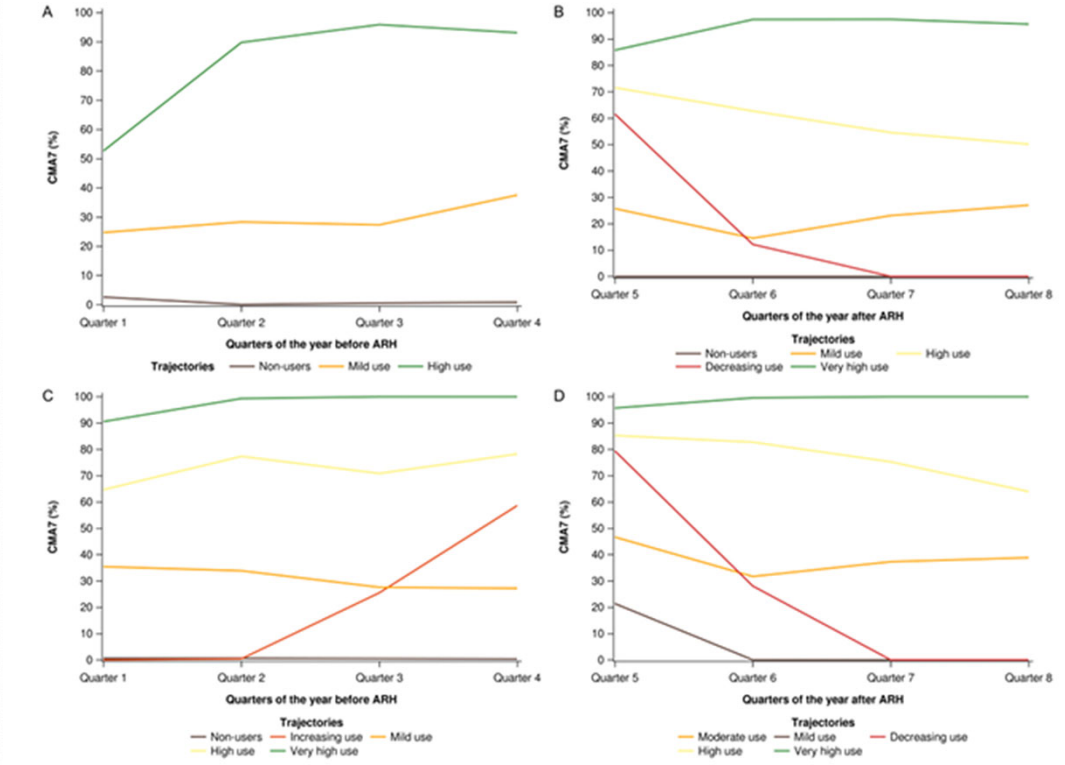


Unexpected Trajectories

Kids

Adults

Figure 3. Inhaled corticosteroid trajectories of children (n=447) and teens/adults (n=416), before (A and C, respectively), and after (B and D, respectively) asthma-related hospitalization (ARH). CMA7: Continuous Measures of Medication Acquisition-7.



PRE-H **POST-H**

Hôpitaux de Lyon

Université Claude Bernard Lyon 1

Understanding of asthma therapy (1)

	INTERVENTION GROUP (n=125)			REFERENCE GROUP (n=28)		
	Inclusion	M12	p (1)	Inclusion	M12	p (1)
"Regular use of ICS affects therapeutic efficacy?" (% "No")	56 %	68 %	0.039	54 %	46 %	0.53
"Antibiotics are needed in case of a common cold associated with asthma?" (% "No")	53 %	70 %	<0.001	37 %	44 %	0.75

(1) Mc Nemar test

Understanding of asthma therapy (2)

	INTERVENTION GROUP (n=125)			REFERENCE GROUP (n=28)		
	Inclusion	M12	p (1)	Inclusion	M12	p (1)
"In case of exacerbation, which drug class must be introduced or increased in priority? " (% single answer: "ICS")	21 %	32 %	0.024	23 %	12 %	0.45
"Which therapeutic class requires a long term use in asthma? " (% single answer: "ICS")	35 %	51 %	0.004	41 %	33 %	0.69

(1) Mc Nemar test

Perception of asthma

	INTERVENTION GROUP (n=125)			REFERENCE GROUP (n=28)		
	Inclusion	M12	p (1)	Inclusion	M12	p (1)
Asthma is a concern in my life (yes vs. no)	70 %	54 %	0.004	70 %	70 %	1.00
Locus of Control (mean, Standard Deviation) (0-100%)	52.6 (±29.7)	63.2 (±27.4)	0.0004	55.4 (±32.2)	53.2 (±25.6)	0.99

(1) Mc Nemar test

Declared behaviours toward ICS during the past 3 months

	INTERVENTION GROUP (n=125)			REFERENCE GROUP (n=28)		
	Inclusion [a]	M12	p [1]	Inclusion [a]	M12	p [1]
Any spontaneous cessation?	26 %	20 %	0.10	15 %	12 %	1.00
Any change in ICS dosing?	18 %	22 %	0.50	19 %	11 %	0.69
Continuous use of ICS	75 %	76 %	0.85	78 %	74 %	1.00

(1) Mc Nemar test

Medical resource utilisation

	INTERVENTION GROUP (n=125)			REFERENCE GROUP (n=28)		
	Inclusion (a)	M12	p (1)	Inclusion (a)	M12	p (1)
Past hospital admissions (past 12 months)	3 %	5 %	-	7 %	7 %	1.00
Use of antibiotics after asthma exacerbation (past 12 months)	19 %	14 %	0.29	21 %	18 %	1.00
Use of oral corticosteroids after asthma exacerbation (past 12 months)	22 %	20 %	0.55	36 %	25 %	0.38
Any lost work-days due to asthma (past 12 months)	13 %	4 %	0.01	15 %	12 %	1.00

(1) Mc Nemar test