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# Clinical pathway concept - a key to seamless care

Audrey Janoly-Dumenil, Hôpital Edouard Herriot, CHU Lyon

Marie-Camille Chaumais, Hôpital Antoine Bécclère, APHP



## Conflict of interest

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M-C Chaumais

- Bayer
- Daichi Sankyo
- Gilead

A. Janoly-Dumenil

- No conflict of interest

# Quiz



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1. The clinical pathway was developed to improve the outcome of patients
2. Clinical pathway is disease specific
3. The clinical pathway is a simple concept known to all healthcare professionals and widely implemented
4. Clinical pathway is simple to apply
5. Clinical pathway implementation is an opportunity for clinical pharmacists



## What is a clinical pathway?

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First used in 1985 by Zander et al. at the New England Medical Center  
 Generic term widely used and accepted in all healthcare management settings  
 However, not so simple to define ...

- ⇒ Many definitions
- ⇒ Regroups different notions
- ⇒ Uses different methodologies
- ⇒ Targets different goals

Also many alternative names:

Care pathway  
 Critical pathway  
 Integrated pathway  
 Care map  
 ...



# What is a clinical pathway?

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A 3-year literature review (2000-2003):  
 => 84 different definitions found in 82 articles



Bleser et al., Journal of nursing Management, 2006

# What is a clinical pathway?

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A 3-year literature review (2000-2003):  
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Clinical pathway		Nexus		Characteristic		Aim and outcome	
Definition	Concept	Process	Project				
Structure	Structure	Structure	Structure	Structure	Structure	Structure	Structure
Content	Content	Content	Content	Content	Content	Content	Content
Method	Method	Method	Method	Method	Method	Method	Method
Outcome	Outcome	Outcome	Outcome	Outcome	Outcome	Outcome	Outcome
Measurement	Measurement	Measurement	Measurement	Measurement	Measurement	Measurement	Measurement
Implementation	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation
Evaluation	Evaluation	Evaluation	Evaluation	Evaluation	Evaluation	Evaluation	Evaluation

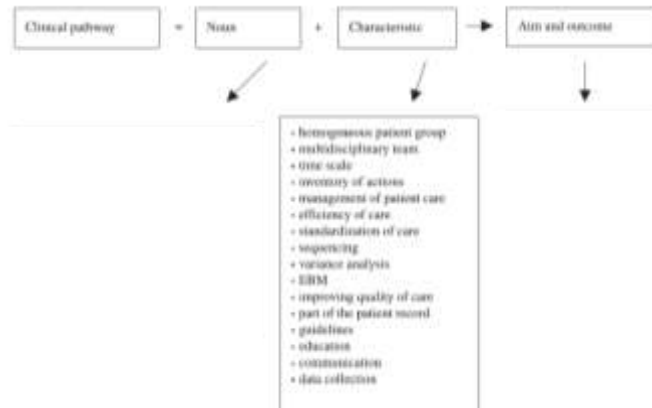


Bleser et al., Journal of nursing Management, 2006

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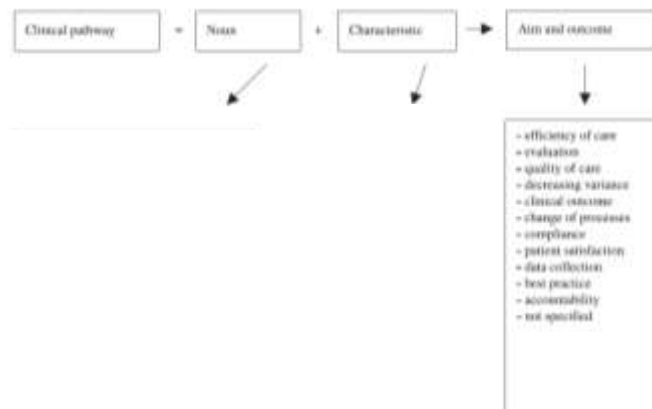


Bleser et al., *Journal of nursing Management*, 2006

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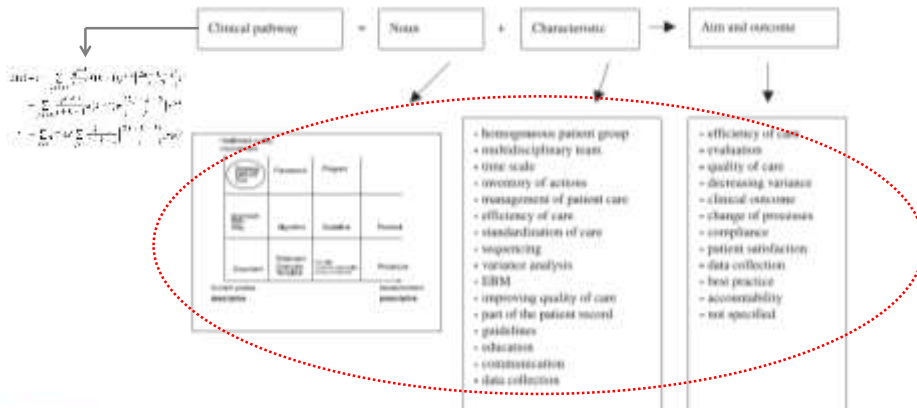


Bleser et al., *Journal of nursing Management*, 2006

# What is a clinical pathway?

9

A 3-year literature review (2000-2003):  
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Bleser et al., Journal of nursing Management, 2006

# What is a clinical pathway?

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## European Pathway Association



Association to support organisations and individuals who want to support

- The development
  - The implementation
  - The evaluation
- } clinical pathways

### Consensual definition

**Complex** intervention for the mutual decision making and organisation of care processes for a well-defined group of patients during a well-defined period.



# What is a clinical pathway?

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## Consensual definition



### Care pathway characteristics includes:

- clear **goals/key elements statement** : evidence-based care, best practice, patient's characteristics/expectations;
- **facilitation of communication** amongst team members and with patients and families;
- **coordination of care process** : role coordinating/activity sequencing of the multidisciplinary care team, patients and their relatives;
- documentation, monitoring, and evaluation of **variances and outcomes**;
- **identification of appropriate resources**.

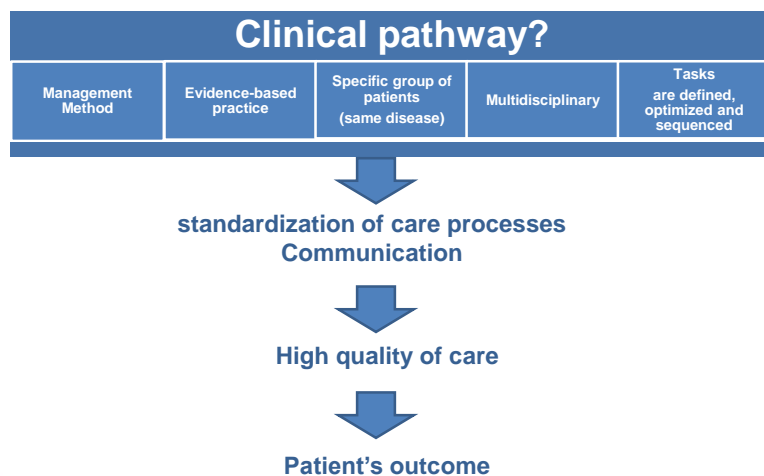
### The aim is:

- to enhance the **quality of care** across the continuum by improving risk-adjusted patient outcomes, promoting patient safety, increasing patient satisfaction, and optimising the use of resources.



# What is a clinical pathway?

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# Why are clinical pathways needed?

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Centered on the healthcare Professional activities and not on the patient

- Increased complexity
- Lack of standardization
- Lack of communication
- Orientation issues
- Different training levels

**Variable outcomes**



# Clinical pathway representations

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**The perfect clinical pathway**



**Clinical Pathway in real life**



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# Clinical Pathway and health authorities

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## In France



Provide the reimbursement  
 CP = need to see your general practitioner first



Develop the clinical pathway with healthcare professionals involved in the disease

A lot of progress have been made from the National Health Authorities

In 2007: CP for PAH Patients

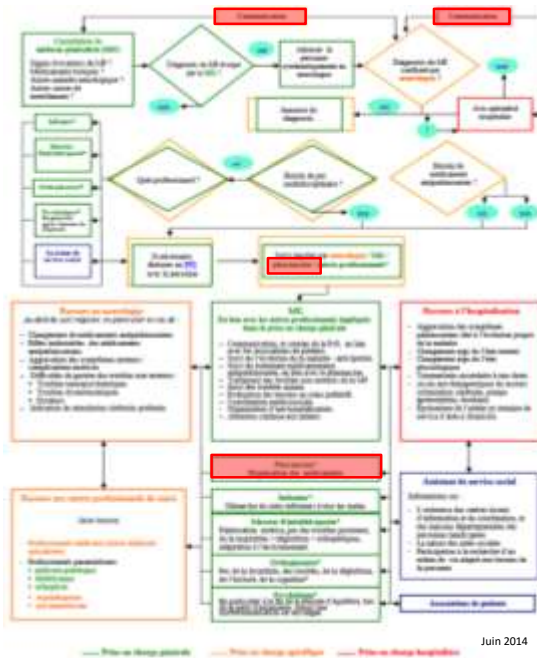
- None-validated process
- Just a list of healthcare professionals
- Systematic absence of the pharmacist and other healthcare professionals



Clinical pathway for Parkinson's disease

Communication between hospital and community

Pharmacists : ever-increasing CP involvement



Juin 2014

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## Clinical Pathway and health authorities

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What about in your countries?

- What is the position of your healthcare authorities?
- Has the CP been widely implemented?



## Impact of CP for pharmacists

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- Opportunity for the pharmacist to set up or formalize clinical activities
- Highlight the Pharmacists' clinical responsibilities
- Leads to the interprofessional communication
- Improves the community-hospital links

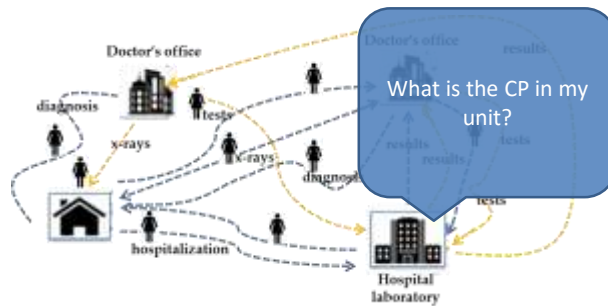


# How to make CP come true?

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CP is complex, requiring a lot of experience and is difficult to measure

=> Possibility to focusing on specific stages of a CP or patients with specific drugs



## CP: Example 1

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### Pharmaceutical counselling for patient with oral anticoagulant

- Since 2009
- Structured methodology to train pharmacists

	2010	2011	2012	2013	2014
Number of counsellings	43	52	80	82	48

29% of eligible patients



What is the real process?



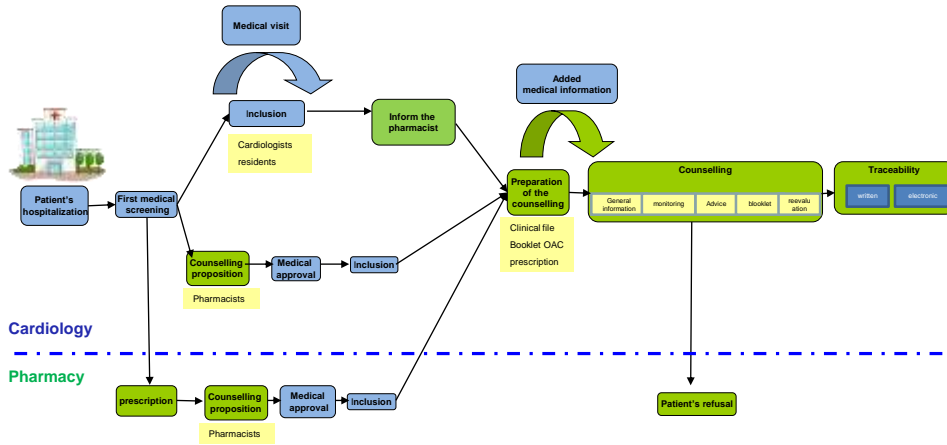


# CP: Example 1



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## Pharmaceutical counselling for patient with oral anticoagulant

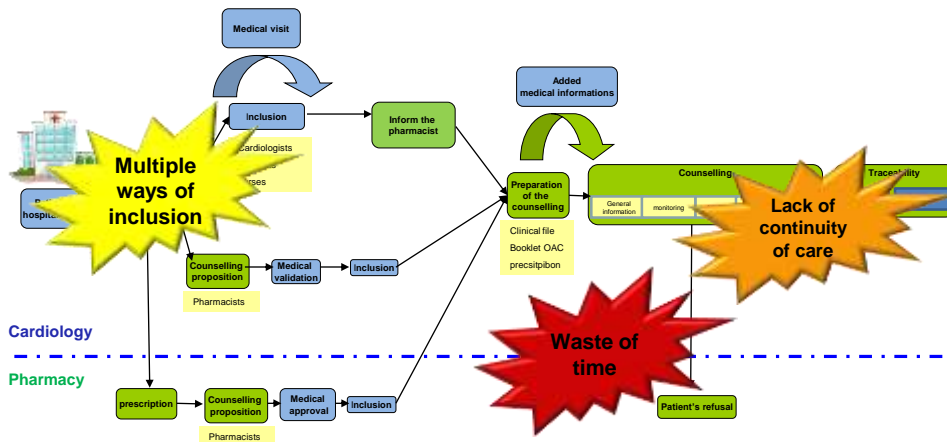


# CP: Example 1



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## Pharmaceutical counselling for patient with oral anticoagulant



# CP: Example 1

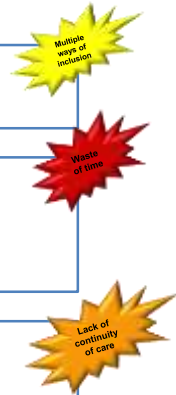
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## Pharmaceutical counselling for patient with oral anticoagulant

### Improvement propositions



- Multiple ways of inclusion**
  - Implementation of a unique inclusion pathway : screening of OAC prescriptions by pharmacists
- Waste of time**
  - Medical approval not needed
  - Definition of inclusion and exclusion criteria
  - Written consent
  - History of OAC treatment: Pre-evaluation of patient's knowledge
- Lack of continuity of care**
  - Transmission of the overview of the counselling to the patient's community pharmacist and general practitioner
  - Evaluation of the relevance of transmitted overview

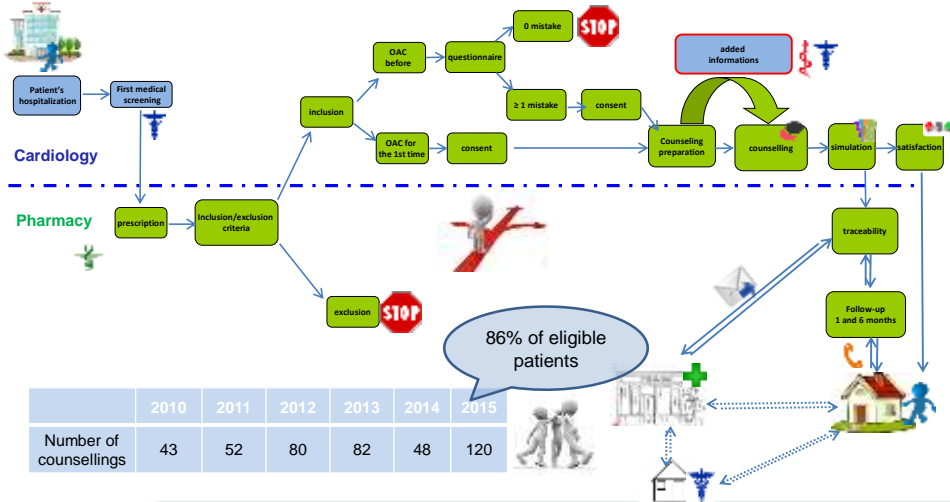


# CP: Example 1



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## Pharmaceutical counselling for patient with oral anticoagulant

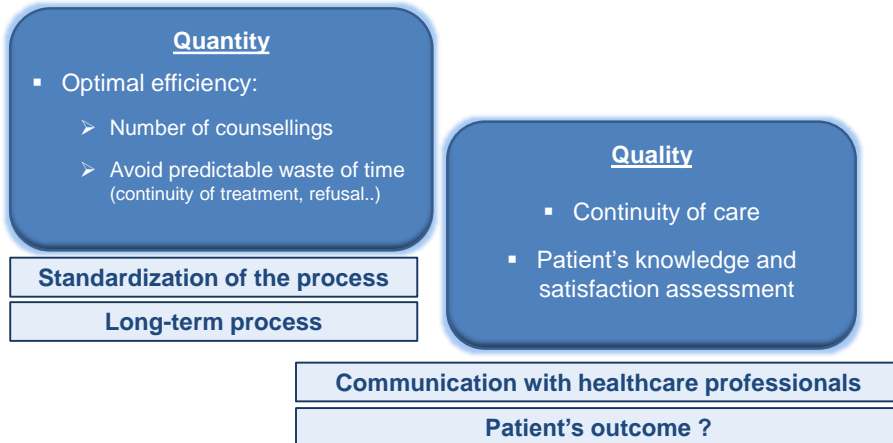


# CP: Example 1

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## Pharmaceutical counselling for patient with oral anticoagulant

Since implementation of the new process...



# CP: Exemple 2

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## Stroke Clinical Pathway

**Is it a stroke? Check these signs FAST!**

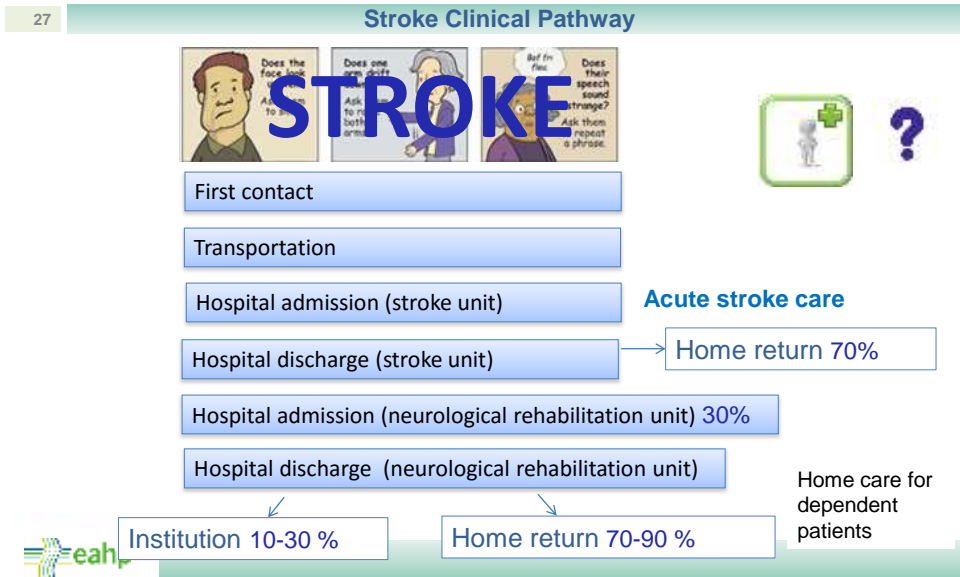
<p><b>F</b> <b>Face</b></p> <p>Does the face look uneven? Ask them to smile.</p>	<p><b>A</b> <b>Arm</b></p> <p>Does one arm drift down? Ask them to raise both arms.</p>	<p><b>S</b> <b>Speech</b></p> <p>Does their speech sound strange? Ask them to repeat a phrase.</p>	<p><b>T</b> <b>Time</b></p> <p>Every second, brain cells die. Call 9-1-1 at any sign of stroke!</p>
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**Act FAST. Call 9-1-1 at any sign of stroke!**

Massachusetts Department of Public Health



# CP: Exemple 2



# CP: STROKE

28 **Stroke Clinical Pathway : Is a clinical pharmacist useful?**

**Before....  
To prevent stroke and other cardiovascular diseases**

« PHARMACIST INTERVENTION HYPERTENSION »

200 publications From 1983 to 2015

Year	Number of Publications
2005	3
2006	10
2007	2
2008	11
2009	8
2010	25
2011	17
2012	17
2013	23
2014	22
2015	22

# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?

Before....  
To prevent stroke and other cardiovascular diseases



**Effect of pharmacist intervention on control of resistant hypertension (HT)**

20 patients

- 8 had a severe HT
- 5 had a moderate HT
- 7 had a mild HT

- Decrease of mean blood pressures for patients with severe, moderate, and mild HT
- Positive impact of pharmacist intervention

**30 years ago :**

Not a controlled randomized trial

Few patients

But...it works!

**Clinical pharmacist is useful**



Morse et al - J HOSP PHARM 1986; 43:905-9.

# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?

Before....  
To prevent stroke and other cardiovascular diseases



**Impact of physician-pharmacist collaboration on uncontrolled hypertension**

- Randomized control trial
- During 12 months

- Prescriptions analysis
- Exploration of life habits
- Exploration of barriers of medication adherence
- Adverse effects
- Dosage Schedule optimisation
- Administration modalities optimization
- Physician- pharmacist contact and collaboration



Hunt et al - J Gen Intern Med 2008; 23 (12): 1966-72

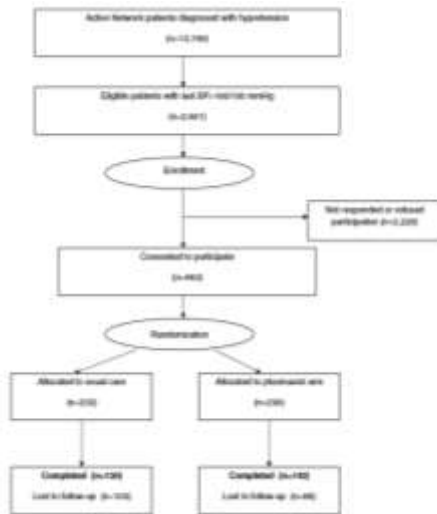


Figure 1. Patient population eligibility, participation, and randomization flow diagram.

- Subjects receiving the intervention achieved significantly lower systolic (p=0.007) and diastolic (p=0.002) blood pressures compared to control (137/75 mmHg vs. 143/78 mmHg)
- The intervention group received more total office visits (7.2 vs. 4.9, p<0.0001), however had fewer physician visits (3.2 vs. 4.7, p<0.0001) compared to control. Intervention subjects were prescribed more antihypertensive medications (2.7 vs. 2.4, p=0.02)



Improve of blood pressure control  
Clinical pharmacist is useful



Hunt et al - J Gen Intern Med 2008; 23 (12): 1966-72



## CP: STROKE

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### Stroke Clinical Pathway : Is a clinical pharmacist useful?



First contact

Transportation

Hospital admission (stroke unit)





# CP: STROKE

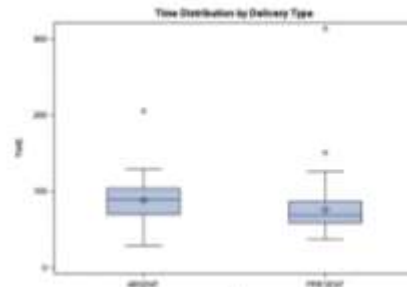
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## Stroke Clinical Pathway : Is a clinical pharmacist useful?

### Pharmacist impact on ischemic stroke care in the emergency department (ED)

To compare the accuracy of rtPA dosing, mean door-to-rtPA time and identification of CI to rtPA therapy when a pharmacist was present versus absent in the ED

- Retrospective study
- Jan 2008 to oct 2012
- 105 patients



Door-to-recombinant tissue plasminogen activator time (min) for pharmacist-absent and pharmacist-present groups (p=0,0027)



Pharmacist may have a beneficial effect on door to rtPA time and patient care



Gosser et al - J EMERG MED 2016, 50 : 187- 93



# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?



First contact

Transportation

Hospital admission (stroke unit)



# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?

- Medication reconciliation on hospital admission
- Medication records checking during the hospital stay regularly



- Prospective study
- Jan 2011 to June 2011
- Patients with TIA or ischemic stroke
- who were taking 2 or more drugs during hospital stay and at discharge



- 68 % of patients presents 1 DRP\*or more (105/155)
- 271 DRP = 1,8 /patient
- Pharmacist's interventions
  - 89% were adopted by the physicians

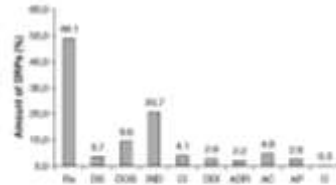


Fig. 1 Distribution of the DRPs coded with AFS One in percent (%). Rx drug, DD dosage form/dose strength, DDO dosage, DDI interaction, CI contraindication, DD drug-drug interaction, ADP adverse drug reaction, AD administration/complaints, AP approval

\*DRP = drug related problem



Clinical pharmacist is useful



Hohman C et al - Int J Clin Pharm. 2012;34:828-31

# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?



- First contact
- Transportation
- Hospital admission (stroke unit)
- Hospital discharge (stroke unit)

Acute stroke care



# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?

- Detailed information on medication upon hospital discharge
  - Effect of a structured medication report as part of the discharge letter on GP adherence to discharge medication



Table 2. Adherence to the Recommended Medication 3 Months After Discharge

	Control Group	Intervention Group	P Value
	Median (IQR)	Median (IQR)	*
Entire medication report	n=135 patients 83.3 (71.4–100%)	n=146 patients 90.9 (75.0–100%)	0.01
	n (patients)	n (patients)	†
Antithrombotic drugs	119/142 (83.8%)	137/149 (91.9%)	0.033
Statins	90/129 (69.8%)	123/138 (87.7%)	<0.001

➡ Clinical pharmacist is useful



Hohman C et al - Stroke 2013;44:522-24



# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?



First contact

Transportation

Hospital admission (stroke unit)

Hospital discharge (stroke unit)

Acute stroke care

Home return 70%

Hospital admission (neurological rehabilitation unit) 30%

Hospital discharge (neurological rehabilitation unit)



# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?

- Impact of Pharmaceutical Care on Health-Related Quality of Life after Ischemic Stroke
  - Randomized clinical trial
  - Patients assigned to either an intervention (IG) or a control group (CG)
  - First intervention at hospital discharge - next interventions by community pharmacist/one year following



Table 2: Score distribution of the SF-36 (2 summary measures) at hospital and after 12 months (per-protocol analysis)

SF-36 Scales	Time	IG (n = 64)	CG (n = 139)	After 12 months Between group comparison p-Value †
		mean (s.d.)	mean (s.d.)	
PCS	Hospital	41.8 (s. 9.8)	41.2 (s. 10.8)	0.898
	After 12 months	41.5 (s. 11.8)	38.1 (s. 11.6)	
	p-Value † Differences between baseline and after 12 months	0.813	0.023*	
MCS	Hospital	49.5 (s. 10.4)	49.6 (s. 11.7)	0.677
	After 12 months	48.3 (s. 11.1)	45.0 (s. 10.9)	
	p-Value † Differences between baseline and after 12 months	0.821	0.001***	

➔ Clinical pharmacist is useful



HOHMANN C et al - Health Qual Life Outcomes 2010, 8:59



# CP: STROKE

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## Stroke Clinical Pathway : Is a clinical pharmacist useful?

### What works best

- Brief interventions
- Repeated interventions
- Long term follow up
- Interprofessional collaboration and communication
- Pharmaceutical expertise

**GO!**



# CP: STROKE

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Stroke Clinical Pathway

## ADMED-AVC

### A randomised clinical trial In 6 french university hospitals



# CP: STROKE

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ADMED-AVC



- ADMED-AVC project is a randomized controlled trial (RCT) consisting in a patient - centered, pluriprofessional, and structured intervention, coordinated around the patient, targeting secondary preventive treatments adherence after ischemic stroke
- Two groups (intervention group versus control group) of inpatients will be recruited into stroke unit or neurological rehabilitation unit following stroke

#### **Primary outcome**

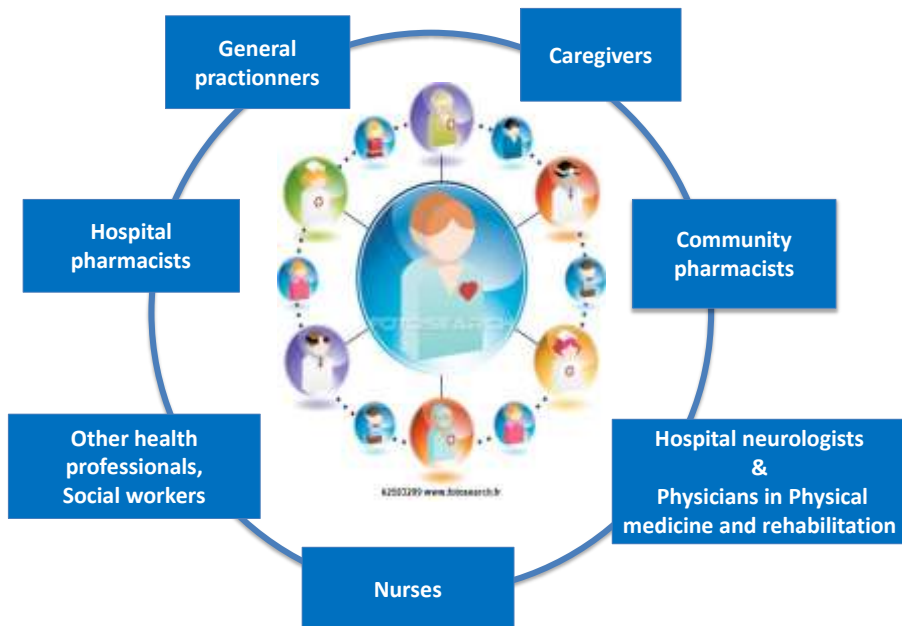
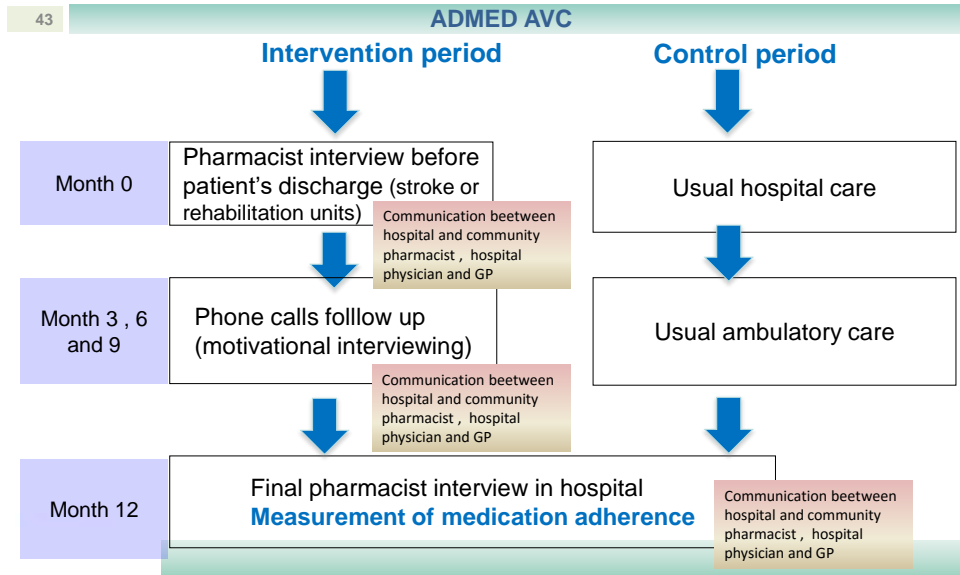
- Overall adherence to secondary preventive treatments:
  - Antiplatelets or anticoagulants with antihypertensive agents and/or statins
  - at one year after hospital discharge

#### **Secondary outcomes**

- Adherence to each drug
- Iatrogenic events
- Recurrent stroke or any cardiovascular event
- Hospital readmissions
- Quality of life
- Patient satisfaction
- Professionals satisfaction



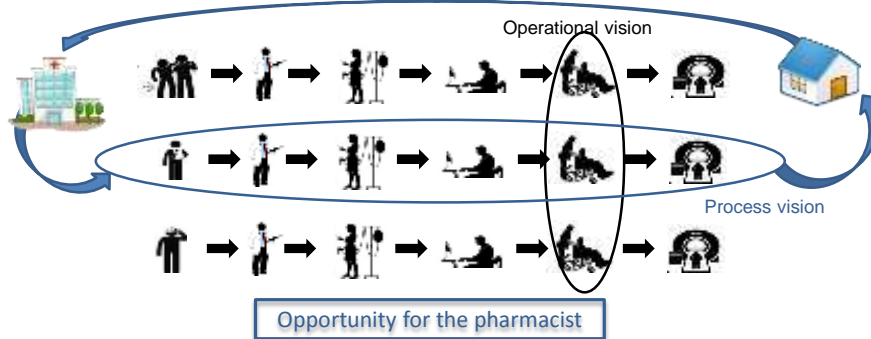
# CP: STROKE



# Conclusion

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Process vision: Clinical Pathway => seamless care



Need an interprofessional communication

Need to analyse your environment before ( $\neq$  diseases /  $\neq$  patients /  $\neq$  units ...)

**Don't forget your aim: improve the patient's outcomes**



## Quiz



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1. The clinical pathway was developed to improve the outcome of patients 
2. Clinical pathway is disease specific 
3. The clinical pathway is a simple concept known to all healthcare professionals and widely implemented 
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# Thank you for your attention

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[mariecamille.chaumais@aphp.fr](mailto:mariecamille.chaumais@aphp.fr)

[audrey.janoly-dumenil@chu-lyon.fr](mailto:audrey.janoly-dumenil@chu-lyon.fr)

