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Philips Speech Recognition Systems

„Nouvelles ergonomies,
nouveaux usages“

HIT 2008 Paris
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Documenter, oui ! mais comment ?

- La documentation des actes médicaux forme une activité essentielle parmi les processus de santé

L'information médicale existe mais

- sous forme papier
- périssable
- redondante
- chère
- souvent illisible
- liée au lieu de stockage
- "inerte"



Quelques réponses

- **Solutions actuelles :**
 - Dossier patient informatisé
 - Intégration des bases de données pharmaceutiques
 - Logiciels d'aide à la décision médicale
 - Code-barres etc.

REGULAR DRUGS			Date →	
DRUG APPROVED NAME	Route	Frequency	Time	Dose
DIGOXIN	PO	QD	0700	62.5 mcg
Prescribers Signature	Date written	Date Cancelled	1200	
	12/7/07		1400	
Other Directions	Pharmacy	S127	1700	
	W.		2200	
DRUG APPROVED NAME	Route	Frequency	Time	Dose
HUMICOR	SLC	BD	0700	260
Prescribers Signature	Date written	Date Cancelled	1200	
	13/7/07		1400	
Other Directions	Pharmacy		1700	160
			2200	
DRUG APPROVED NAME	Route	Frequency	Time	Dose
Humalog	SLC	BD	0700	26 units
Prescribers Signature	Date written	Date Cancelled	1200	
	15/7		1400	
Other Directions	Pharmacy		1700	16 units
			2200	BR

- **Mais cela signifie :**
 - **Stopper** la documentation manuscrite
 - Produire une documentation de **qualité**

« ergon » (travail) et « nomos » (lois)

- Le langage naturel est-il une interface ergonomique pour saisir l'information ?
 - Une interface régit par des codes linguistiques est très peu ergonomique car **arbitraire**, générateur de **malentendus**, **complexe** et **diverse**.

- Une solution ergonomique se doit de :
 - **Structurer l'information**
 - **Standardiser la terminologie**



- L'information standardisée est par nature **non arbitraire**, **sans ambiguïté**, **simple** et **universelle**.

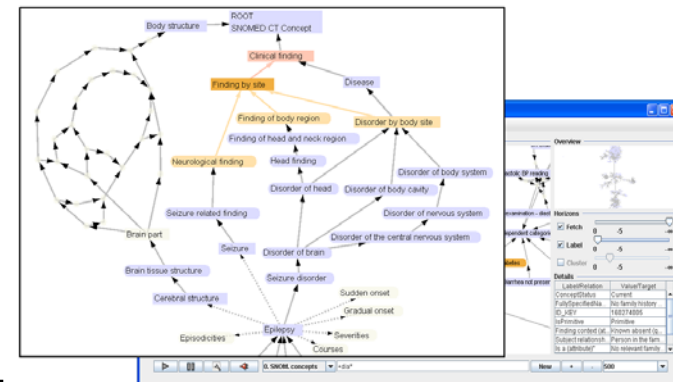
Enjeux

- Créer des outils flexibles qui autorisent la **dictée libre** et fournissent un **support fiable** permettant la prise de décision médicale.

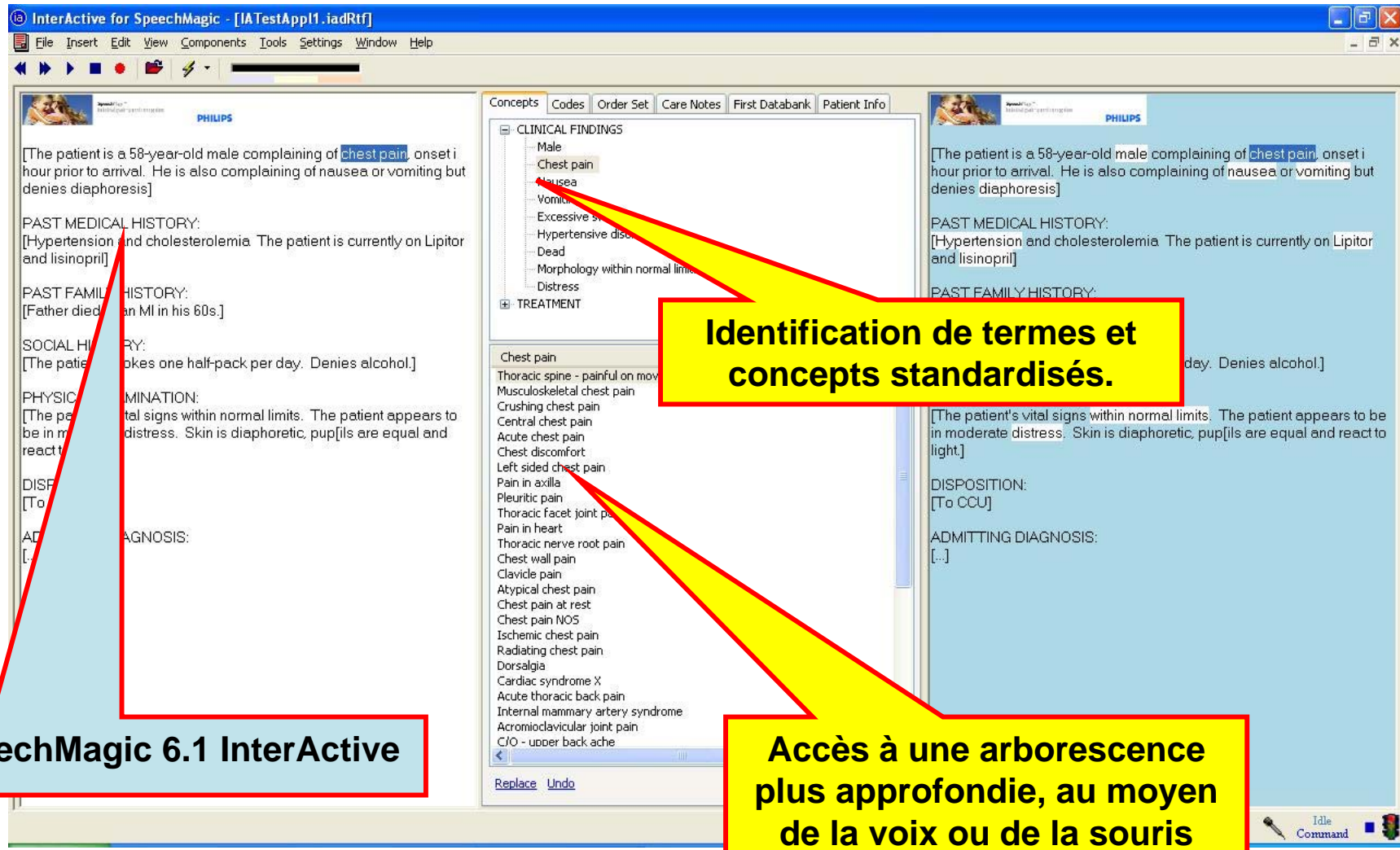
– Solution : Associer la reconnaissance vocale aux bases de données médicales pour **structurer le contenu et standardiser la terminologie**

– En d'autres termes : **SpeechMagic**

associé, par exemple, à **CIM10, CCAM, SNOMED**



Interop – Standardisation de la terminologie



SpeechMagic 6.1 InterActive

Identification de termes et concepts standardisés.

Accès à une arborescence plus approfondie, au moyen de la voix ou de la souris

Interop – Bases de données pharmaceutiques

InterActive for SpeechMagic - [IA TestApp11.iadRtf]

File Insert Edit View Components Tools Settings Window Help

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[The patient is a 58-year-old male complaining of chest pain, onset 1 hour prior to arrival. He is also complaining of nausea or vomiting but denies diaphoresis]

PAST MEDICAL HISTORY:
[Hypertension and cholesterolemia. The patient is currently on Lipitor and lisinopril]

PAST FAMILY HISTORY:
[Father died of an MI in his 60s.]

SOCIAL HISTORY:
[The patient smokes or 1/2 pack per day. Denies alcohol.]

PHYSICAL EXAMINATION:
[The patient's vital signs are in normal limits. The patient appears to be in moderate distress. He is diaphoretic, pupils are equal and reactive to light.]

DISPOSITION:
[To CCU]

ADMITTING DIAGNOSIS:
[Acute myocardial infarction]

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Concepts Codes Order Set Care Notes First Databank Patient Info

Chest Pain, Acute: Ad - Emergency

Admission

Condition (Instructions: Select ANY order item)

Code status (Instructions: Select ANY order item)

- Full code status
- Do not resuscitate (DNR)
- Healthcare power of attorney

Precautions (Instructions: Select ANY order item)

- Aspiration precautions
- Fall precautions

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[The patient is a 58-year-old male complaining of Thoracic facet joint pain, onset 1 hour prior to arrival. He is also complaining of nausea or vomiting but denies diaphoresis]

PAST MEDICAL HISTORY:
[Systolic hypertension and cholesterolemia. The patient is currently on Lipitor and lisinopril]

PAST FAMILY HISTORY:
[Father died of an MI in his 60s.]

SOCIAL HISTORY:
[The patient smokes or 1/2 pack per day. Denies alcohol.]

PHYSICAL EXAMINATION:
[The patient's vital signs are in normal limits. The patient appears to be in moderate distress. He is diaphoretic, pupils are equal and reactive to light.]

DISPOSITION:
[To CCU]

ADMITTING DIAGNOSIS:
[...]

Idle Command

SpeechMagic 6.1 Interactive

Interop – La codification

The screenshot shows the 'InterActive for SpeechMagic' application window. The main text area on the left contains a medical transcription of a patient's history. The central window displays a coding system with columns for 'Concept', 'SNOMED', 'ICD9', and 'ICD10'. The right side of the interface shows the same transcription with some words highlighted in red, indicating they have been selected for coding. Two yellow callout boxes with red borders point to the coding system and the highlighted text.

Concept	SNOMED	ICD9	ICD10
Male	248153007		
Chest pain	29857009	786.50	
Nausea	73879007		
Vomiting	15387003		
Excessive sweating	52613005	780.8	
Hypertensive disorder	38341003	401.9	
Dead	419099009		
Morphology within normal li...	125112009		
Distress	69328002	796.4	
Lipitor			
Lisinopril			
IN			

Système de codification (Snomed, CIM10...)

Sélections insérées dans le CR final

Associer la reconnaissance vocale à SNOMED7/CIM10 - **Bénéfices**

- Reconnaissance vocale en ligne / documentation instantanée
- Interactivité
- Input libre - output structuré
- Retour instantané
- Assistance sur le lieu de la dictée
- Utilisation des terminologies standards (e.g. SNOMED)
- Utilisation des bases de données pharmaceutiques



Focus sur le marché médical

Nous participons activement à l'amélioration des processus de santé

Partenariats mutuels et profitables dans :

Editeur de logiciels de dictée

Editeurs de RIS/PACS

De l'Europe de l'Ouest vers

les USA

l'Europe Centrale

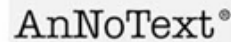
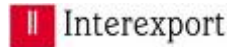
l'Amérique latine

le Proche Orient



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Nos Partenaires



powered by
SpeechMagic™

SpeechMagic™ Languages



English UK



Brazilian Portuguese



Danish



Greek



Spanish - North America & Caribbean



English US



Austrian German



Canadian French



German



Spanish - South America



Flemish



Norwegian



Canadian English



French



Catalan



Portuguese



Italian



Dutch



Swedish



Slovenian



Finnish



Hungarian



Spanish

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La simplicité c'est agir en toute confiance

www.philips.com/speechrecognition