

Hastings County Current status

Kyongsik Yun

Current status: Voice recognition

Current available training data are incomplete

Eleven mp3 files (~1min each) of paramedic audio and transcription have been provided. However, we don't know the relevance of the content of these files to the actual demo.

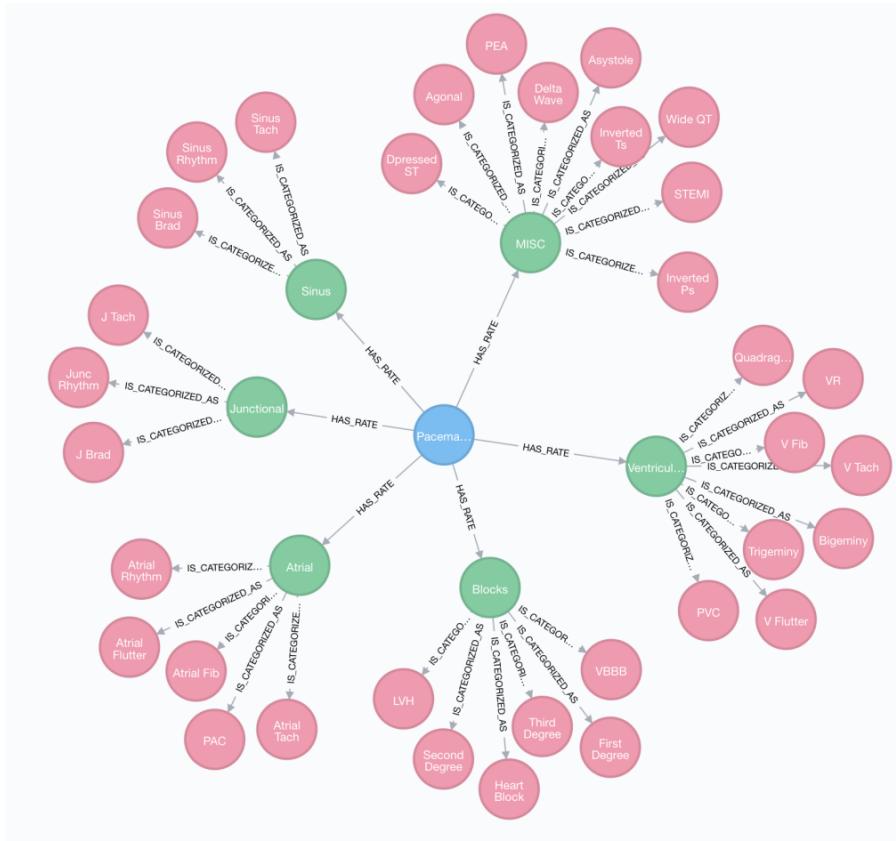
Please provide the demo scenario script and audio.

Current status: Medicine bottle character recognition

Current available training data are incomplete

We have 8 images of medicine bottles. Will these bottles be used in the actual demo? Do we need to recognize any other bottles? Please provide the actual medicine bottles to be used in the demo.

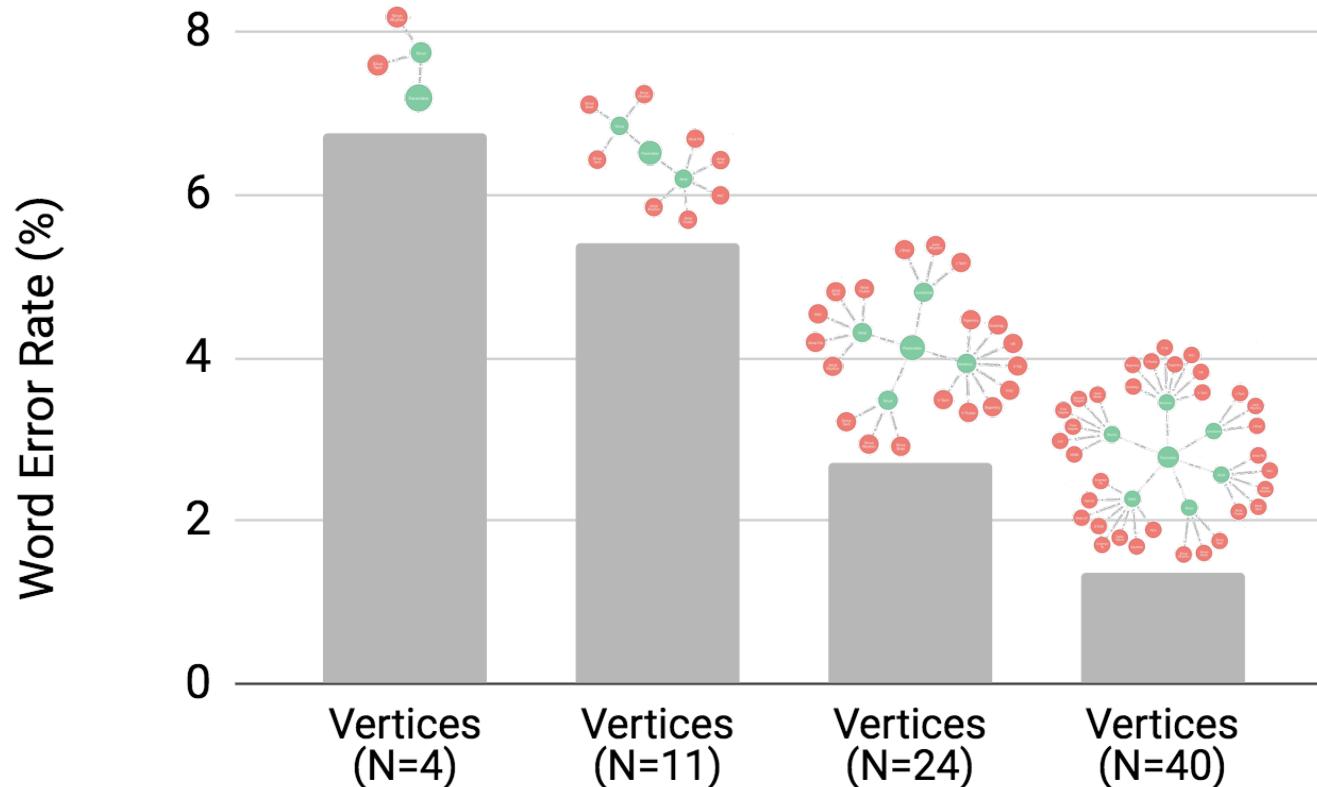
Graph Database of Terminology Used in Patching



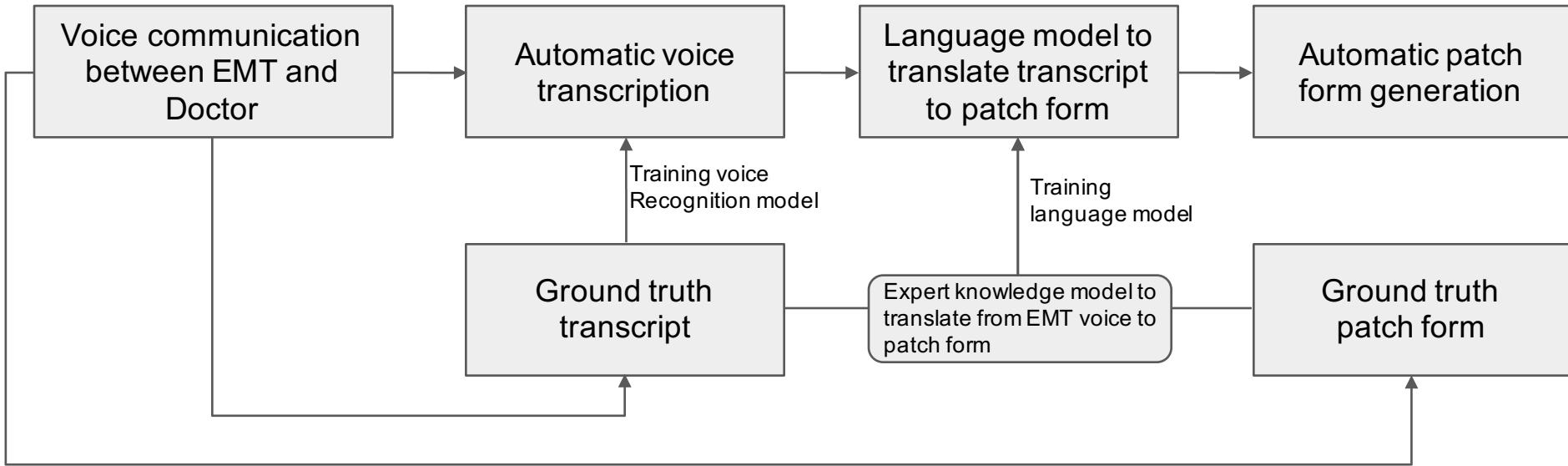
Combining subject matter expertise and deep neural networks

- Motivation
 - Lack of data
 - Slow to train deep neural networks from scratch
 - Defining model based boundaries to deep neural networks
- Results as adding more knowledge
 - $5/74=6.76\%$ word error rate
 - $4/74=5.41\%$
 - $2/74=2.70\%$
 - $1/74=1.35\%$

Graph database improves word error rate



Overall patch form generation process



1. Generate ground truth voice transcript from communication between EMT and Doctor
2. Generate expert knowledge model (doctor's mental logic) to translate from EMT voice (ground truth transcript) to patch form
3. Train automatic voice transcription model using ground truth transcript
4. Train language model to translate transcript to patch form using expert knowledge model
5. Generate automatic patch form



REGIONAL PARAMEDIC PROGRAM
FOR EASTERN ONTARIO

Patch Form # 3- 3069

Date: 28/11/2018 Time: 20:28 Paramedic #: 31848 ACP PCP
p.m.

Pt Age: 78 yrs Sex: M F Weight: _____

History: 6:30 p.m. → chest pain

78 years old - Male patient

No past medical Hx - ?? Atrial

Fibrillation - sever chest pain

Past Med History: and sweating -

12 lead ECG at ST Elevation

Anterior lead - No

changes in Inferior lead

Allergies: * Nitroglycerin Given

Physical Examination: For Ang pain -

But patient still Having

sever pain

Treatment(s) provided by Paramedic and Response:

order Given To Give Morphine 2mg

Then Another 2mg as needed While

B.P. maintaining)

Physician Orders:

* 30 min away From KGH

OHIP No: [REDACTED]

Paramedic Repeated Orders

Please Review (explain on back):

Receiving Hospital: KGH ETA

MD Name (Print)	CPSO #	MD Signature
<u>Zainab Al-Alawi</u>	<u>BHP 801</u>	<u>[Signature]</u>

Patch Form # 3-3069

January 28, 2018 20:20

6:30pm

73 years old

Suffocating feeling in her throat

No pacemaker

Diabetes

High blood pressure

96% on room air

Morphine

Blood pressure is 165 over 82

Heart rate is 65

Morphine 5mg

Chest pain

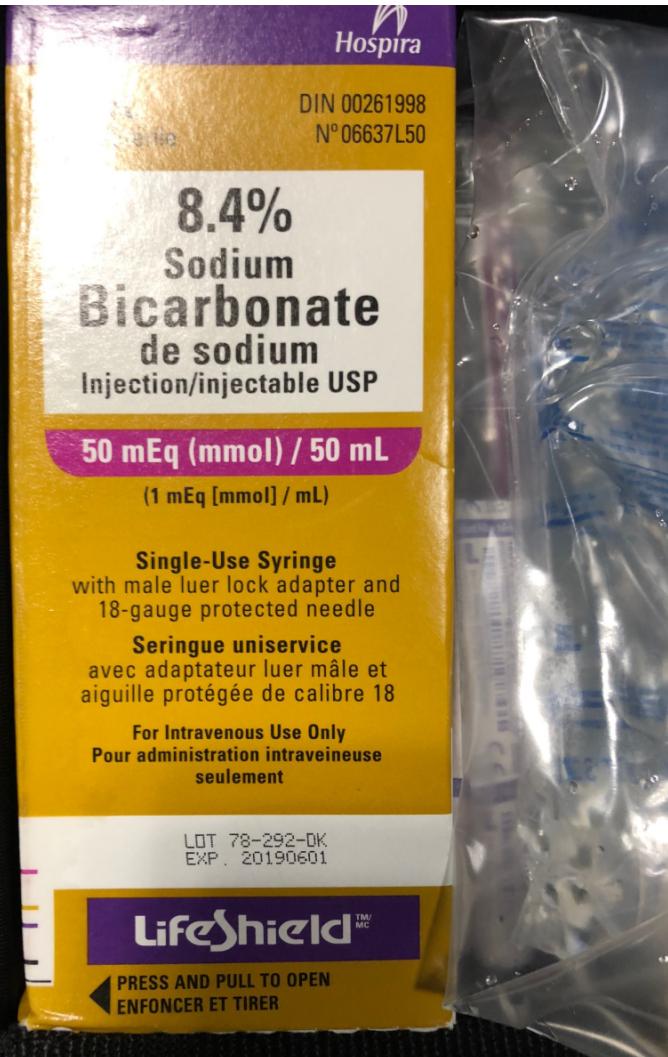
October 9, 1939

Doctor number: 801

Patch number: 3069

Medicine container character recognition

- Paramedic taking a picture of medicine container
- Send picture to a designated number (Twilio)
- Preprocessing (Rotation, Segmentation)
- OCR ($35/478=7.3\%$)
- Language model ($28/478=5.8\%$)
- Final output



Hospira
DIN 00261998
N° 06637 L50
8.4%
Sodium
de sodium
50 mEq (mmol)/50 ml
Injection/injectable USP
(1 mEq [mmol] /mL)
Single-Use Syringe
with male luer lock adapter and
18-gauge protected needle
Seringue uniservice
avec adaptateur luer mâle et
aiguille protégée de calibre 18
For Intravenous Use Only
Pour administration intraveineuse
seulement
LIT 8-292-0
EF 201gne01 → EXP 20190601

DIN 00261998 Sodium
Bicarbonate

DIN 00261998

All Videos Maps Images Shopping More Settings Tools

About 10,400 results (0.34 seconds)

Sodium Bicarbonate Injection 8.4% (December 09, 2011) - Recalls ...

healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2011/10376r-eng.php

Jan 9, 2012 - DIN, NPN, DIN-HIM, DIN 00261998. Dosage form. Solution. Strength. 84 mg/mL. Lot or serial number. 04454DK. Companies. Recalling Firm ...

Sodium Bicarbonate Inj 8.4% (2017-06-14) - Recalls and safety alerts

healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2017/63650r-eng.php

Jun 19, 2017 - Wholesalers, pharmacies and hospitals across Canada. Affected products. Sodium Bicarbonate Inj 8.4%, DIN, NPN, DIN-HIM, DIN 00261998 ...

8.4% 1MEQ/ML 50 ML Vial - Injectables

<https://www.pfizerinjectables.ca/en/product-detail/product:52/subprod92> ▾

Dosage form : Solution. Storage temperature : 20 to 25°C. Refrigeration required : No. Prevent from freezing : Yes. DIN : 00261998. Product code : 06625050 ...



Hospira
UIN 00710814
-N°04921 L10
1x 10 mL DIN 00710814
| Sterile/Stérile N°04921 L10
Sterile/Stérile
N 04921
t6iiie/Stérile
Epinephrine Epinephrine Epinephrine
Epinephrine Eninéhrin | EnInéhrine
pinephrine Epinephrine
Injection/injectable USP Injection/injectable USP
Injection/injectable USP
1 mg/10 mL
(0.1 mg/mL)
Single-Use Syringe
with male luer lock adapter and
20-gauge protected needle
Seringue uniservice
avec adaptateur luer mâle et
aiguille protégée de calibre 20
LOT 81-413-DK
EXP. 20190601

Hospira
DIN 00710814
N°04921L10
1 x 10 mL
Sterile/Stérile
N°04921L10

Hospira
DIN 00710814
N°04921L10
1 x 10 mL
Sterile/Stérile
N°04921L10

Epinephrine
Épinéphrine
Injection/injectable USP
1 mg/10 mL
(0.1 mg/mL)

Epinephrine
Épinéphrine
Injection/injectable USP
1 mg/10 mL
(0.1 mg/mL)

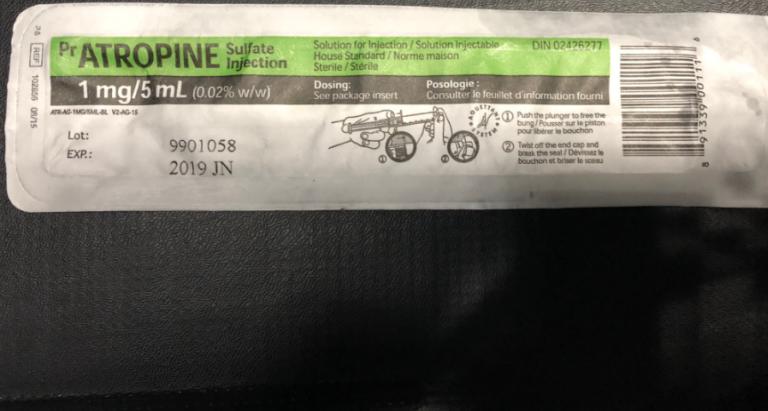
Epinephrine
Épinéphrine
Injection/injectable USP
1 mg/10 mL
(0.1 mg/mL)

Single-Use Syringe
with male luer lock adapter and
20-gauge protected needle
Seringue uniservice
avec adaptateur luer mâle et
aiguille protégée de calibre 20
LOT 81-413-DK
EXP. 20190601

Single-Use Syringe
with male luer lock adapter and
20-gauge protected needle
Seringue uniservice
avec adaptateur luer mâle et
aiguille protégée de calibre 20
LOT 81-413-DK
EXP. 20190601

Single-Use Syringe
with male luer lock adapter and
20-gauge protected needle
Seringue uniservice
avec adaptateur luer mâle et
aiguille protégée de calibre 20
LOT 81-413-DK
EXP. 20190601

LIT 141
LOT 81 3DK
LIT 21-413-
EXP. 1190601
EXP. 20101
LifeShield
0
EP. 20190601
LifeShield
PRESS AND PULL TO OPEN
ENFONCER ET TIRER



Sulfate
njéctionSterile /Stérile
Solution for Injecon/Solution injectable
House Standard/Norme maison

DIN 02496277

1 mg/5 mL (0.02% w/w)

Dosing:

See package insert

nsulter le feuillet d'information fourni

ET

ATR-AG-1MG/SML-BL V2-AG-15

① Push the plunger to free the
e A. bung / Pousser sur le piston
ERMNIIIIIIlinjM

Lot:

STE

pour libérer le bouchon

9901058

2019 JN

② Twist off the end cap and

EXP:

break the seal / Dévissez le
bouchon et briser le sceau

Do not refrigerate. Ne Pas Réfrigérer

Information

Lot No.:

66-290-EV
EXP. 2020

P EN

Hospira

1 x 5 mL
Sterile Solution
Solution stérile

DIN 00436208
N° 04903L05

2% Lidocaine
Hydrochloride Injection USP
Chlorhydrate de
lidocaïne à 2%
injectable USP

100 mg / 5 mL

(20 mg / mL)

For Intravenous Use
Pour administration
intraveineuse

Single-Use Syringe
with male luer lock adapter and
20-gauge protected needle

Seringue uniservice
avec adaptateur luer mâle
verrouillable et
aiguille protégée de calibre 20

Preservative-Free
Sans préservateur

LOT 87-320-DK
EXP. 20200301

LifeShield™

PRESS AND PULL TO OPEN
ENFONCER ET TIRER



1 x 5 mL
Sterile Solution
Solution stérile

DIN 00436208
N° 01323L01

2% Lidocaine
Hydrochloride
Injection USP
Chlorhydrate de
lidocaïne à 2%
injectable USP

100 mg / 5 mL

(20 mg / mL)

For Intravenous Use
Pour administration
intraveineuse

Ansyry™

Single-Use Syringe
with male luer lock
adapter

Seringue uniservice
avec adaptateur luer
mâle verrouillable

LOT 78-182-EV
EXP. 20190601

Preservative-Free
Sans préservateur

PRESS AND PULL TO OPEN
ENFONCER ET TIRER

Hydrochloride Injection USP

Chlorhydrate de
lidocaïne à 2%
injectable USP
2% Lidocaine
Hydrochloride
Injection USP
1

lel Chlorhydrate de
100 mg/5 mL
(20 mg /mL)

For Intravenous Use

Pour administration
intraveineuse
inject. nie USP

100 mg/5 mL

(20 mg/mL)

Single-Use Syringe
with male luer lock adapter and
20-gauge protected needle

Seringue uniservice
avec adaptateur luer mâle
verrouillable et
aiguille protégée de calibre 20

Preservative-Free

Sans préservateur

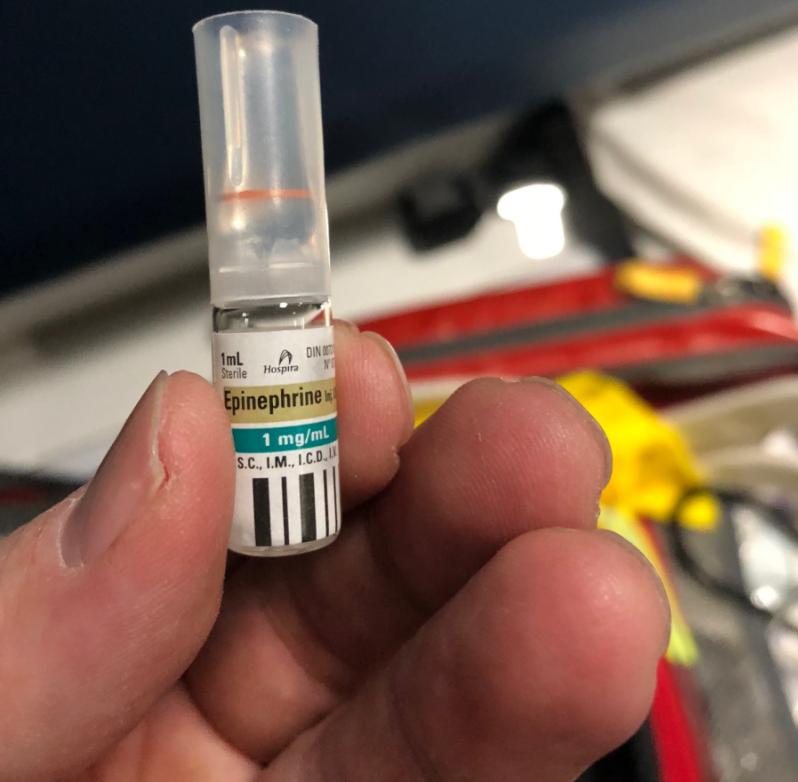
For Intravenous Use

Pour administration
intraveineuse
Ansyr

TM

Single-Use Syringe
with male luer lock
LOT D

Sterile Hospira N
inephrine
1 mg/ml
I.M
"





DIN OOT
Hospira
rile
inephrinen
1 mg/ml
S.C.

2 mL

DIN: 02393042

Code: L0010224

Sterile/ Stérile

NALOXONE

HYDROCHLORIDE

INJECTION

COOE1474/V03 (LATE

omega

Montreal, Canada H3M 3A2

(01)10801500112241

LOT

DIN: 02393042 2 mL

Code: L0010224

Sterile / Stérile

NALOXONE

HYDROCHLORIDE

INJECTION

Omega Standard

See leaflet. Voir le feuillet.

COOE1474 / V-03



omega

Montreal, Canada H3M 3A2



(01)10801500112241

LOT: 6M578



DIN 0211441 i
HOSPITAL T

Nitrolingua
Pumpspray/p
Pumpspray mpe
Nitroglycerin **suble**
spray / Pulvérusat
sublingual de nit ycérine i
dose maybe
ntenals ho
per me
mg e mesurée en
Anti-anginal **agen**
Antiangineux
par do
Keep
PoHL. Bo AMP
Exp. on
75 doses

MYLAN-NITRO

SUBLINGUAL SPRAY

Nitroglycerin Sublingual Spray, Mfr. Std.

Pulvériseur sublingual de nitroglycérine, Norme-fabricant

0.4 mg

Per Metered Dose
par dose prém surée

 Mylan 20 doses

CAUTION
ATTENTION

YLAN-NITRO

SUBLINGUAL SPRAY

Read end

Product

Nitroglycerin Sublingual request Spray, Mfr. Std.St

DONOT

Pulverisateur sublingual de um nitroglycérine,

Norme-fabricant Coen

POSOLOGE

0.4 mg

Per Metered **Dose** mts

par dose prém surée desti

Mond

Mylan **2 doses**

Conserve

NE PAS

CAUTION

ATTENTION