LYNXCARE

health community

Big Data *4* Better Outcomes

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health community

"Every hospital should follow every patient it treats long enough to determine whether the treatment has been successful, and then to inquire "if not, why not" with a view to preventing similar failures in the future.“

- Ernest Armory Codman, M.D., Harvard Medical 1914

We verzamelen vandaag

<10% van de data

om outcomes te verbeteren

Dit kost ziekenhuizen reeds

2 FTE

per department

Available data
in healthcare

Actionable information
& insights

Source: G. A. Ebenezer, S. Durga, Big Data Analytics in Healthcare: A Survey, ARPN J. Eng. Appl. Sci. 10 (2015) 3645–3650.

Belang outcome data

	Volume-Based	->	Value-Based
Financiering	Fee-for-Service		Outcome Based
Incentief	Volume		Outcomes/Cost (Value)
Focus	Acute episodes		Populatie
Rol van de provider	Single episode		Care Continuum
Informatie	Retro/Prospectief		Real-time & Predictief

1

Aantoonbare kwaliteit & uitkomst gedreven beslissingen (LVZ)

2

Healthdata.be en internationale organisaties verzoeken dit

ICHOM

sciensano

3

Innovatie binnen farma en medical devices

NOVARTIS

Medtronic

J&J

ICHOM, Registers,... vs. REALITEIT

CATEGORY(e.g., demographics)	Variable ID	ITEM
	N/A	Patient ID
Demographic factors	DOB	Date of birth
	SEX	Patient sex
	EDUCATION	Education level
Baseline clinical status	DXHX_RH	Joint specific history (right
	DXHX_LH	Joint specific history (left
	DXHX_RK	Joint specific history (rig
	DXHX_LK	Joint specific history (lef
	SURGHX_B_RH	Joint specific surgical hi
	SURGHX_B_LH	Joint specific surgical h
	SURGHX_B_RK	Joint specific surgical h
	SURGHX_B_LK	Joint specific surgical
Case-mix factors	HEIGHT	Height
	HEIGHTUNIT	Height units
	WEIGHT	Weight
	WEIGHTUNIT	Weight units
	LIVING	Living condition
	LATERALITY	Laterality of affec
	SURGHX	History of surger
	EXERCISE	Physical activity

sciensano healthdata.be

ICHOM

Klinische outcomes

OPERATION PERFORMED: Bicompartmental knee replacement with
replacement with Mako, MCK size 2 femur and 3 tibia. Also
replacement using Mako trochlea and 26-mm patellar button.

INDICATIONS: The patient is an active female who presented
week after traveling in Europe. Her physical exam, x-ray,
the medial meniscus; however, significant medial compartme
well preserved lateral compartment. Based on this, she ele
and further medial patellofemoral joint understanding any
her knee worse. No further surgery may be required in the

Attention was then turned to the patellofemoral joint, whi
patellofemoral joint replacement was carried out in the fo

PROMS

HOOS HIP SURVEY

Symptoms

These questions should be answered thinking of your hip symptoms and difficulties during the **last week**.

S1. Do you feel grinding, hear clicking or any other type of noise from your hip?

Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always ☐

S2. Difficulties spreading legs wide apart

None ☐ Mild ☐ Moderate ☐ Severe ☐ Extreme ☐

S3. Difficulties to stride out when walking

None Mild Moderate Severe Extreme

Verzamel **100%** outcome data

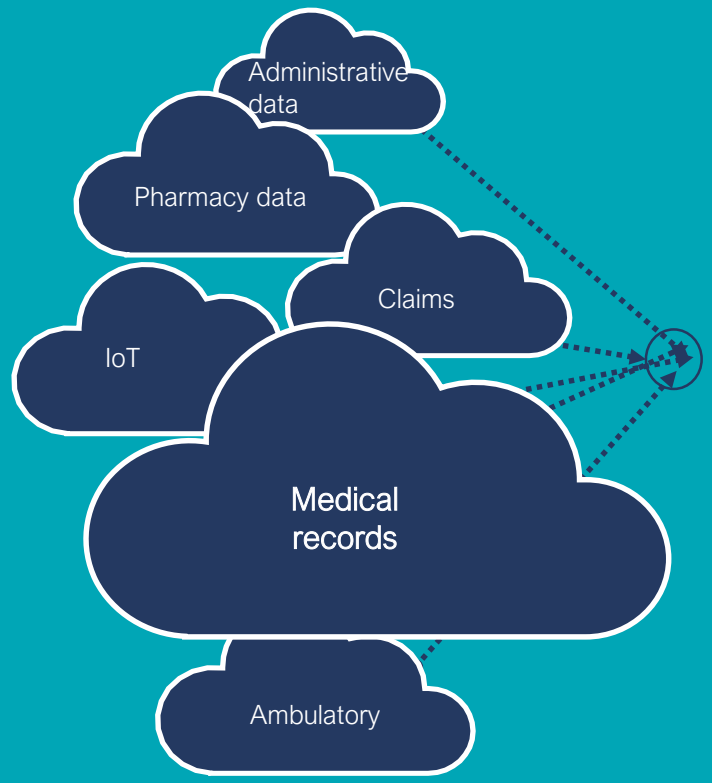
Text Mining (NLP) & AI

Volledig geautomatiseerd

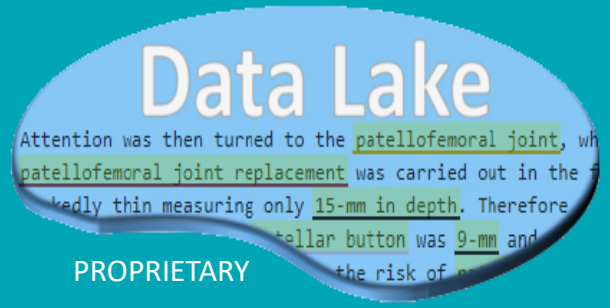
Actionable information & insights

Outcome data platform

Hospital Information System



LynxCare – Text mining & AI



Data from hospital applications is on a real-time basis ingested into a data lake. Text mining & AI extracts specific data points needed to improve outcomes, lower admin costs and result driven optimisation.

API's

QOC

CPW optimization

Research & Disease discovery

Use Case

Microsoft | Microsoft News Centre

Healthcare with heart

48,000,000 data points real-time
& continuously mined from the hospital information system

15 YEARS
Manual work

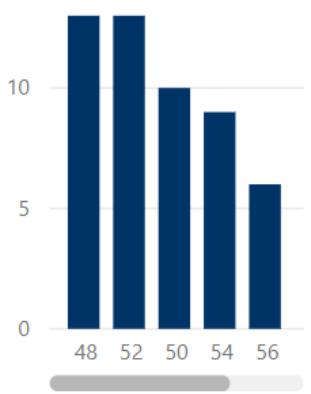
3 DAYS
LynxCare

"We are no longer relying solely on lessons learned from scientific studies, we now base our decisions on deep, well-thought-out real-time data."
- Dr. K. Dujardin, cardiologist

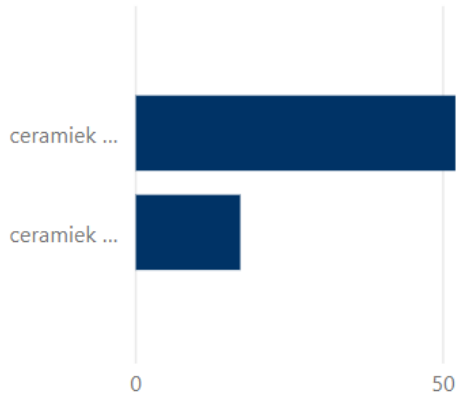
Read our reference case, published by Microsoft international: https://news.microsoft.com/europe/features/healthcare-with-heart/

Clinical KPI monitoring

Count of person_id by lyn...



Count of person_id by lynx_data.wrijvingskoppel



Grade I-II
112

Grade III - IV
6

Nb of Re-admission
8

Nb of Revisions
3

Gradel-II
0
1

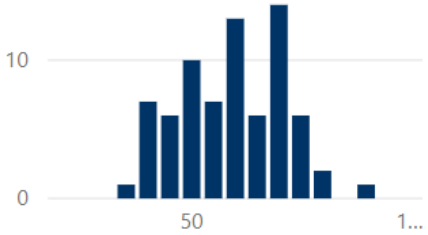
GradeII-III
0
1

Gr III/IV Rate 1Y PO:
1,128 %/ patient
0,979% / implant

Re-admission Rate:
0,015 % / patient
1,305% /implant

Revision rate:
0,564 %/ patient
0,489% / implant

Count of person_id by AgeAtOperatio...

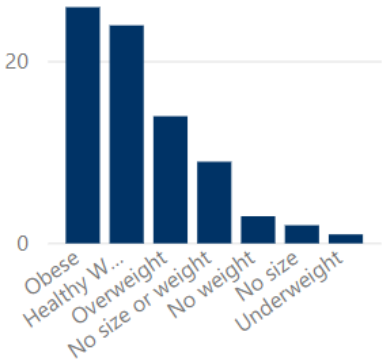


59.80
Mean Age

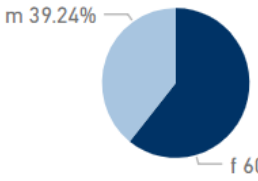
27.9
Mean BMI

58.93
Mean OR Time

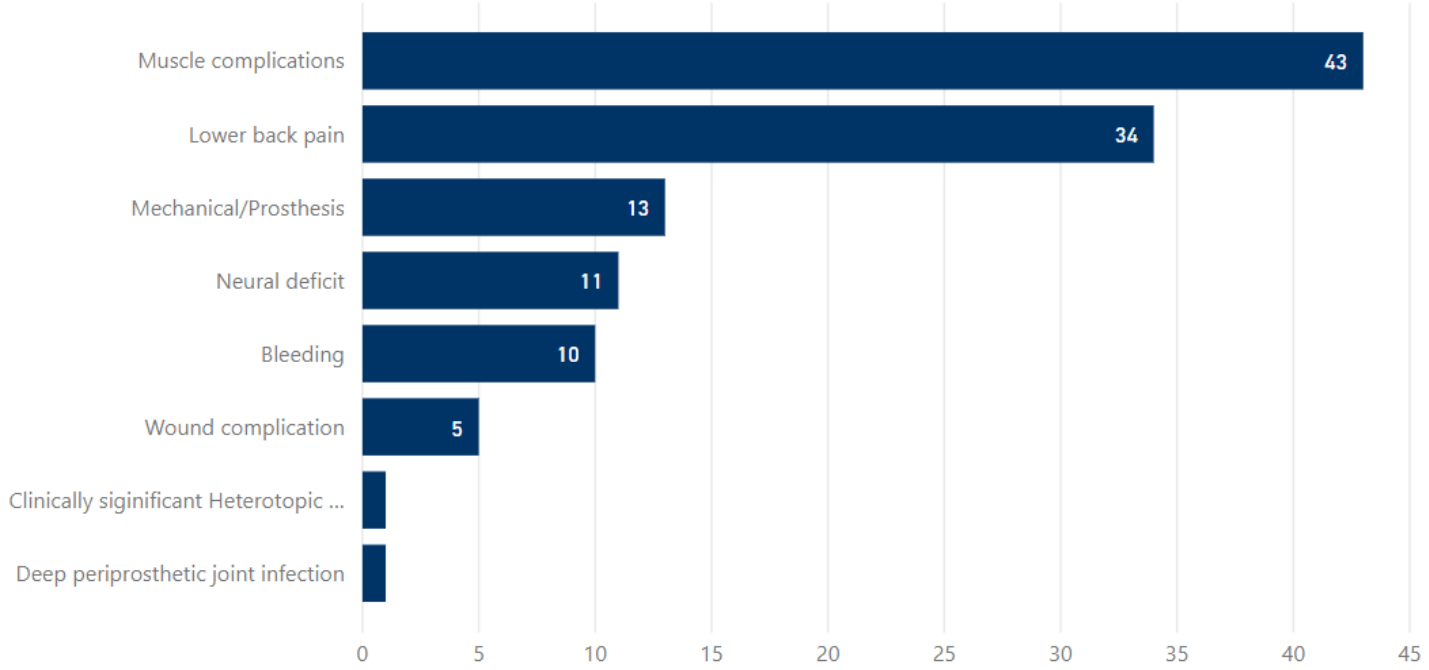
Count of person_id by BMI_type



%GT Count of person_id by gender_concept_id



Count of userprofileguid by Group_Problem



Contact us:

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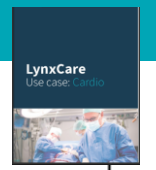
QOC Benchmarking with Dutch Centers



azdelta
Uw ziekenhuis

Dr. Willem-Jan Acou
Dr. Wim Anné
Dr. Bernard Bergez
Dr. Michel de Ceuninck
Dr. Karl Dujardin
Dr. Rik Haspeslagh
Dr. Geert Hollanders
Dr. Herman Nachtergaele
Dr. Peter Pollet
Dr. Francis Stammen
Dr. Stefaan Van de Walle

Roeselare

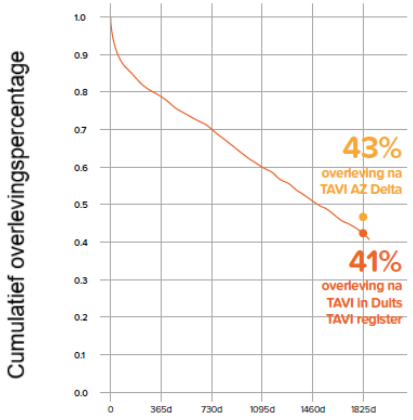
Ons kenmerk:
Betreft:

Geachte Collega,

Uw patiënt verbleef op de dienst cardiologie van

Medische voorgeschiedenis :

1. Operatie voor anale fistel in 1988.
2. Maart 1987: hypertrofische obstructieve cardiomyopathie.
3. Sigmoidvolvulus mei 1990.
4. Diabetes mellitus type 2 sedert 1990.
5. Maart 2000: gekende hypertrofische obstructieve cardiomyopathie met licht gemengd aortakleplijden waarvoor Inderal.
6. Endocarditis profylaxie.
7. Sigmoidvolvulus september 2001 gevolgd door operatie.
8. Plots gehoorverlies links Dr. Melvits 2010.
9. Rookstop 1950.
10. Juli 2009: VKF.
11. 2011: opname wegens hypoglycemische coma.
12. chronische nierinsufficientie GFR 55
13. Mei 2012: Aortaklepvervanging omwille van ernstige aortaklepstenose. Plaatsen Perimount 23 met Morrowprocedure procedure.
14. Februari 2015: VVI pacemaker implantatie omwille van chronische VKF



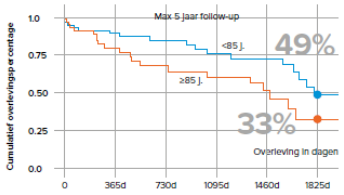
Figuur 11.
Langetermijnoverleving van totale TAVI populatie van 27 hartcentra die deelnemen aan het Duitse TAVI register, de 5-jaars mortaliteit was 59,1% (2).

0 365d 730d 1095d 1460d 1825d

*Risico gecorrigeerd voor: eerder CVA, eerdere hartoperatie, geslacht, leeftijd, linkerventrikelfunctie, mitralisklepinsufficiëntie, nierinsufficiëntie en interventiejaar. Antonius (p=0,041) en Erasmus (p=0,013) verschillen significant in 'langetermijnoverleving' van UMCU.

Figuur 10.
Langetermijnoverleving van totale TAVI populatie van de 14 Nederlandse hartcentra Meetbaar Beter 2016

Langetermijnoverleving TAVI AZ Delta 2010-2017
Volgens leeftijd <85 j. en ≥85 j. Max. 5-jaars follow-up



Figuur 12.
Langetermijnoverleving van totale TAVI populatie sinds start van het programma in AZ Delta in 2010, trend voor betere overleving van <85 j..

	MST	MUMC	OLVG	RADBOUD	UMCG	UMCU	AZ DELTA	TOTAAL
15	'11-'15	'12-'15	'14-'15	'11-'15	'11-'15	'11-'15	'10-'17	
9	130	272	82	375	316	427	119	4296
%	1,5%	3,3%	2,4%	2,4%	3,2%	0,9%	0,8%	
%	5,4%	6,6%	4,9%	5,3%	10,4%	3,5%	6,7%	
%	6,2%	10,3%	9,8%	8,8%	14,6%	6,1%	9,2%	
%	2,3%	2,6%	2,5%	1,9%	4,2%	3,3%	2,5%	
%	4,1%	5,2%	17,9%	11,0%	18,2%	13,4%	15%	
%	4,1%	5,9%	12,8%	11,7%	17,4%	19,6%	10,1%	
%	12,3%	7,0%	19,5%	4,5%	14,2%	12,2%	16,8%	
%	20,8%	31,3%	25,6%	20,3%	24,4%	17,6%	18,4%	
%	36,9%	43,0%	45,1%	48,5%	45,9%	44,5%	46,4%	
%	33,8%	23,2%	24,4%	22,4%	27,2%	33,5%	46,2%	
%	4,6%	8,7%	8,5%		5,4%	6,6%	3,3%	
%	30,8%	31,3%	43,9%	26,7%	31,6%	35,8%	-	
%		9,8%	13,2%	9,4%			19%	
	16,9%	11,6%	19,8%	9,6%	52,4%	18,3%	25,2%	
%	56,2%	57,7%	54,9%	50,9%	50,6%	57,6%	50,4%	

No physician should treat or do surgery on a patient without knowing the outcomes.

health community

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