



UNIVERSIDAD AUTÓNOMA DEL
ESTADO DE MORELOS



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DE AGUASCALIENTES

Design of a data repository to analyze inventory in the Mexican Healthcare System by means of Data Analytics. Case of study: Clinic in the southeast of Mexico

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➤ Objetive

Design and implement a data repository to optimize inventory for clinics in the public sector in the southeast of México

Databases of institutions in the Health care system

- Very large (big)
- Lot of tables (380 or more)
- Hard to get
- No digitalized
- No normalized

Sample table (Chan and Lan, 2001)

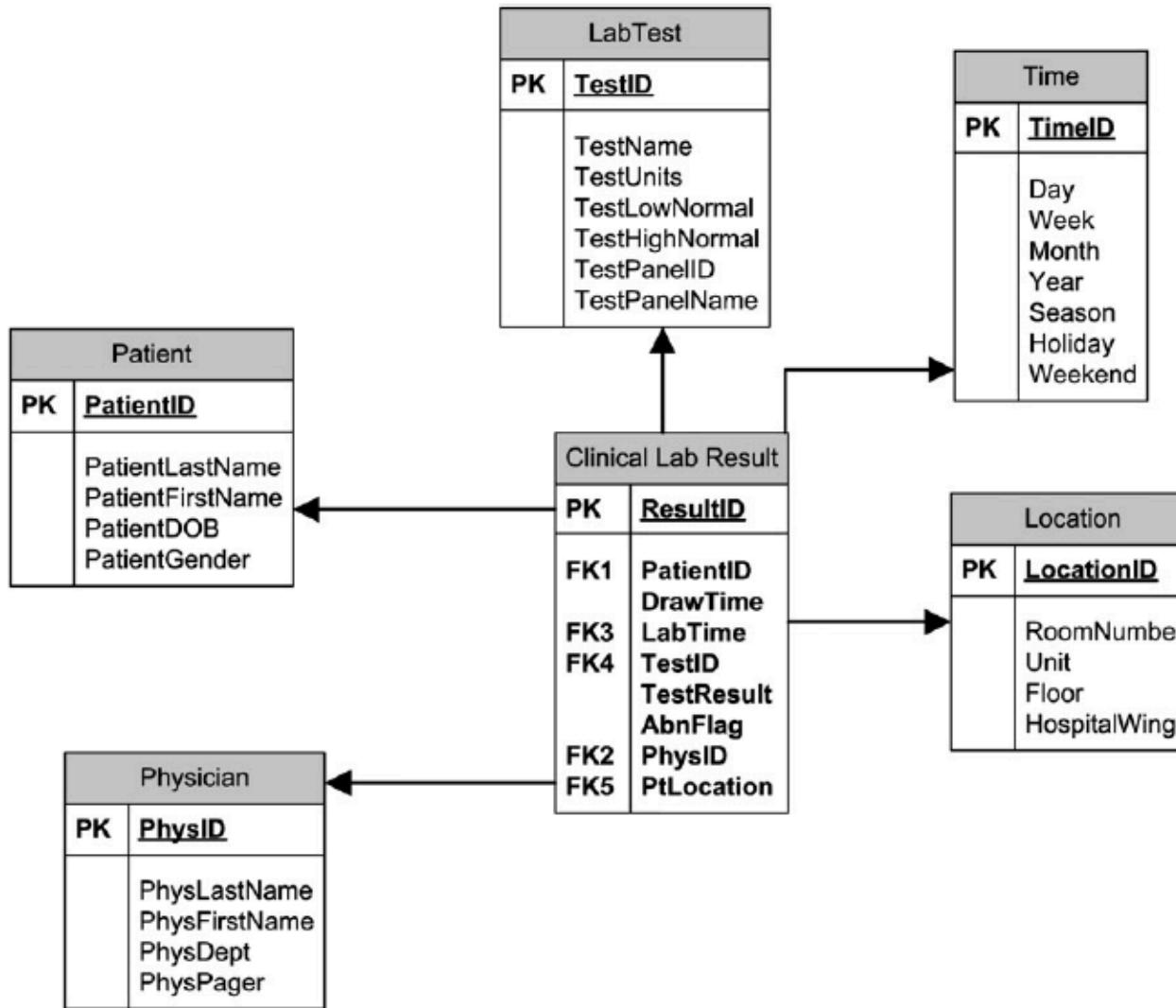
Table 1

Discriminating features identified in Chan and Lan (2001)

Feature name

1. Case Type
 2. Department Type
 3. Patient Type
 4. Partial Payment Type
 5. Drug Days
 6. Physician Gender
 7. Drug Fee
 8. Diagnosis Fee
 9. Examination Fee
 10. Drug Administration Fee
-

Star schema clinical laboratory (Lyman et al., 2008)



Medimetricx, Brazil, Study case: Urgencies

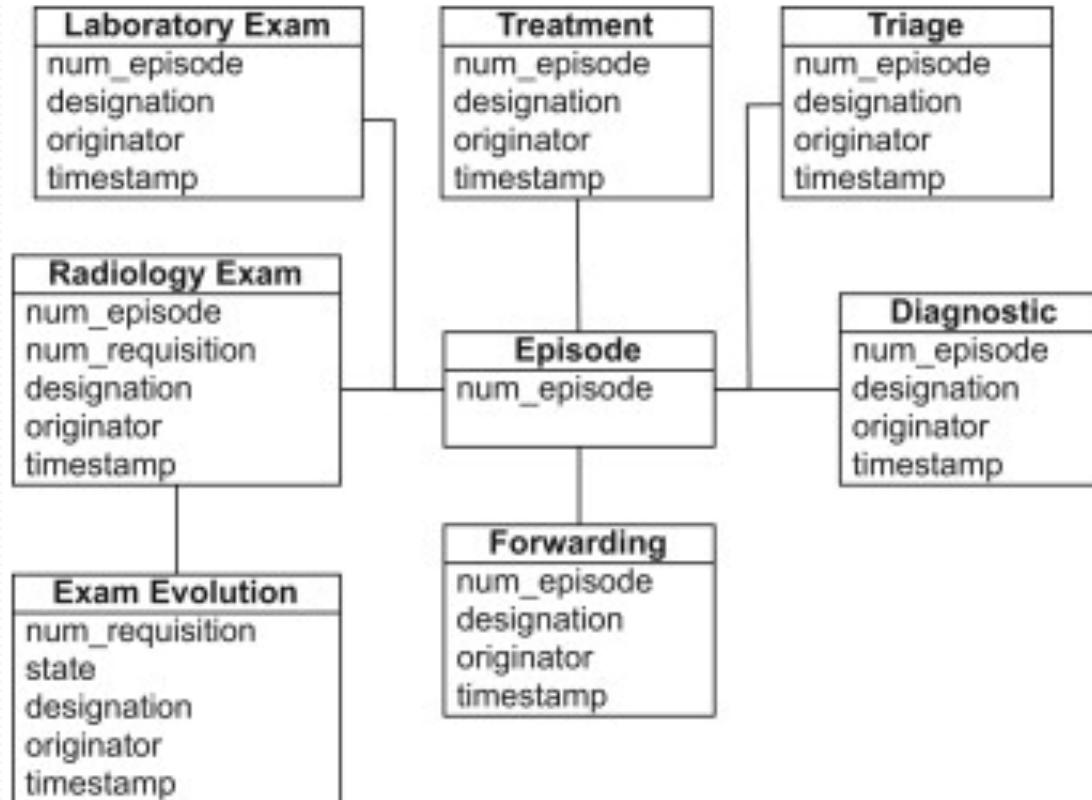


Fig. 6.
Database for the case study.

Inventory of high-price medicines (LaForgia, 1990) cited in (Ditella y Savedoff, 2001)

- Amount of subtracted = (Existence at the beginning of the day – Existence at the beginning of the next day) – Medicines supplied by doctor (with evidence)
- Stolen inventory= $(100 - 90) - 7 = 10 - 7 = 3$

Di Tella, R., & Savedoff, W. D. (2001). *Diagnosis corruption: fraud in Latin America's public hospitals*. Idb.

Stolen supplies(Ditella y Savedoff, 2001)

- Surgical supplies
- Medicines
- Equipment
- 10% approx..

Jaen y Paravisini en (Ditella y Savedoff, 2001)

WAGES, CAPTURE AND PENALTIES IN VENEZUELA'S PUBLIC HOSPITALS

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Table 3.7 Measures of Theft in Public Hospitals

	Share stating that theft occurs (%)	Share of supplies stolen (%)
Surgical supplies	67.0	10.1
Medicines	64.4	13.4
Equipment	50.1	5.7
Food	42.3	12.2
Others	28.2	3.4

Source: Survey of hospital staff.

Real data

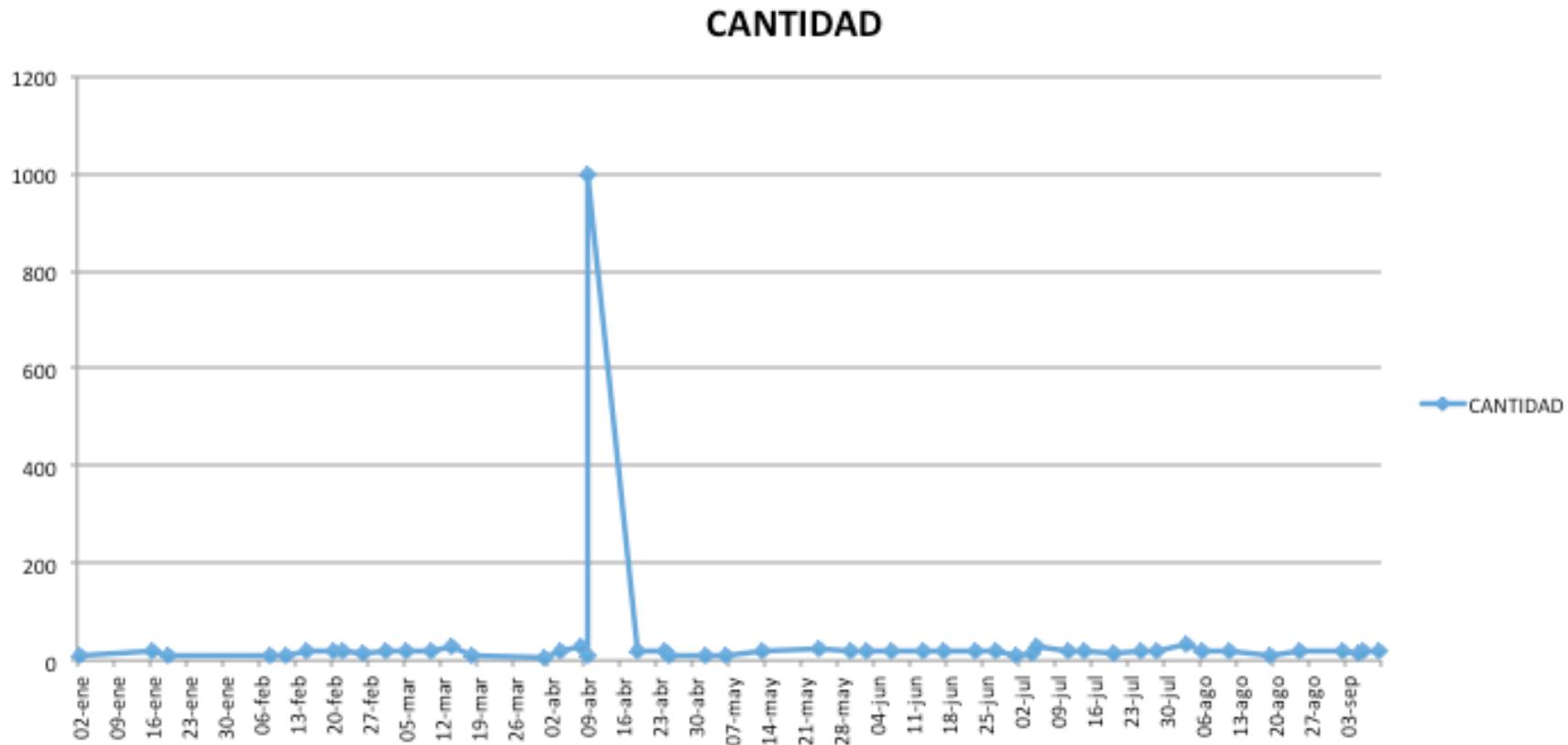
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FECHA	AREA	CANT	MATERIAL SOLICITADO	NOMBRE	EXIST	OBSERVACIONES
19 Sept.	Limp Recop	1	pq vejo desech.	Miche		
		-	pq hojas Kromagnate.	Mony		
		-	hojas memb			
		10	DVD			
		30	sobre p/CD		/	
		50	sobre memb ultra		/	
		1	pq torjetas		/	
		1	dineros Samsun		/	
		1	libro floriente		/	
		5	Frescoplano est		/	
		5	Angia tubo		/	
	Lab.	1	tubo oro	Carlos.		
		4	tubo nio		/	
		3	tubo 10g		/	
		2	A suig monovette.		/	
		2	torndos		/	
		20	vejo capro		/	
		40	Frescoplano est.		/	
		20	hisopo est.		/	
		5	lanceta microtainer		/	Lanceta microta
		10	espejo vaginal		/	
20	Sept. TAC	2	Jeringa p/Inyector	Victor.		
		10	llave 3 vías		/	
		3	Conectores temo		/	
		3	Inyector azul 22G		/	
		3	Inyector amarillo 24G		/	
		1	Teng		/	
	Rx	1	pq hojas opalina	Rosy		
	Lab	1	Indio Sustento Clínico	Eva		
		1	Sens Trimet c/sufla		/	Sens Trimet s/u
			Nifrofrent.		/	Nifrofrent s/u
		1	Corloendrina			Corloendrina
		1	Cefotaxima		/	Cefotaxima
		2	Cetadipina			
		1	Cxacolina		/	
		1	Pencyolina		/	
		1	Norfloxacina		/	Norfloxacina
		1	Multistix	Carlos		
		10	Hem - Screen			Home - Screen
	Henry	1	tubo 10g			
		1	Arija monovette.		/	
	Johnson	3	DVD			Luz de la luna

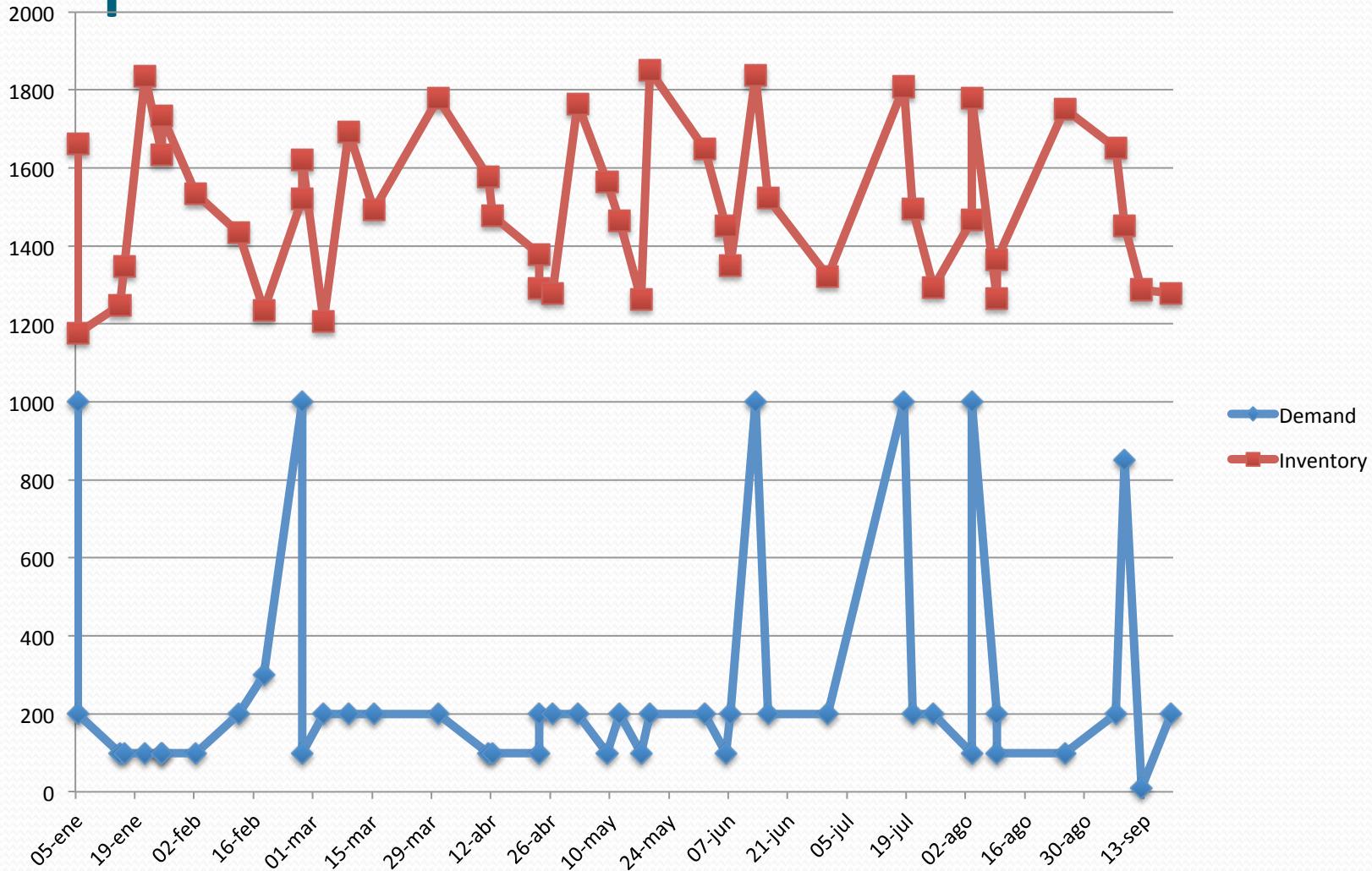
Modeling in Excel

FECHA	ÁREA	CANTIDA	MATERIAL SOLICITADO	NOMBRE	EXI	OBSERVACIONE
19-sep	Limp	1	Paquete vaso desechable	Meche		
19-sep	Recep	1	Hojas kromacote	Mony		
19-sep	Recep	1	Hojas membretadas	Mony		
19-sep	Recep	10	DVD	Mony		
19-sep	Recep	30	Sobre para CD	Mony		
19-sep	Recep	50	Sobre memb ultra	Mony		
19-sep	Recep	1	Paquete tarjetas	Mony		
19-sep	Recep	1	Toner samsung	Mony		
19-sep	Recep	1	Libro Florette	Mony		
19-sep	Recep	5	Frasco para orina est	Mony		
19-sep	Recep	5	Funda lub	Mony		
19-sep	Lab	1	Tubo oro	Carlos		
19-sep	Lab	4	Tubo rojo	Carlos		
19-sep	Lab	3	Tubo lila	Carlos		
19-sep	Lab	2	Aguja monovette	Carlos		
19-sep	Lab	2	Banditas	Carlos		
19-sep	Lab	20	Vaso copro	Carlos		
19-sep	Lab	40	Frasco para orina est	Carlos		
19-sep	Lab	20	Hisopo est	Carlos		
19-sep	Lab	5	Lanceta microtainer	Carlos		
19-sep	Lab	10	Espejo vaginal	Carlos		
20-sep	TAC	2	Jeringa para inyectar	Victor		
20-sep	TAC	10	Llave 3 vias	Victor		
20-sep	TAC	3	Conectores temo	Victor		
20-sep	TAC	3	Insyte azul 22G	Victor		
20-sep	TAC	3	Insyte amarillo 24G	Victor		
20-sep	TAC	1	Sobre tang	Victor		
20-sep	Rx	1	Paquete hojas opalina	Rosy		
20-sep	Lab	1	Frasco sustrato quim	Eva		
20-sep	Lab	1	Sens trimet c/ sulfa	Eva		
20-sep	Lab	1	Nitrofrent	Eva		
20-sep	Lab	1	Corloencilina	Eva		
20-sep	Lab	1	Cefotoxima	Eva		
20-sep	Lab	2	Cetilotina	Eva		
20-sep	Lab	1	Oxacilina	Eva		
20-sep	Lab	1	Penicilina	Eva		
20-sep	Lab	1	Nurfloxacina	Eva		

Discovering of deviations, Time series, Tongue depressors



Proposal



References

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Some questions?