



### 3-Dimensional Pharmacy Management: Thinking Out of the Box, but in the CUBE




Christopher Lowe, PharmD  
Assistant Director  
Clinical Pharmacy Services  
Novant Health



### Disclosure

- I have no real or perceived conflicts of interest pertaining to this presentation.
  - This is good for the audience, as you can take solace in fact that you are receiving unbiased information
  - This is bad for me, because “conflict” usually equals “money” ...  
...and I like money.



### Objective

- Describe a unique tool developed by Novant Health for the analysis of medication utilization data.

### Rationale/Background

- Limited usage reporting capabilities
- Need for real time data
- Ability to populate scorecard and understand utilization variances
- Goal for health system to establish internal benchmark data

### The CUBE

- Enables guided exploration of drug utilization data
- Online analytical processing object
  - Stores data from multiple sources in a pre-aggregated form
- Generates virtual data warehouse
  - Clinical, demographic and geographic information from various sources
    - Pharmacy Drug Master
    - Invision (clinical/financial information system)
  - Daily data refresh

### Extractable Dimensions/Measures

- Drug
  - AHFS classification, drug class, manufacturer, formulary status, generic name, dosage form, route, units dispensed, cost
- Patient
  - Diagnosis related group, length of stay
- Location
  - Facility, nursing unit

### Nursing Unit Filter

Rows: [ICU3] [Drugs] Columns: [Last 4 Years] Context Filter: [Forsyth Medical...] [Drugs]

Filters are applied. See the Properties pane for more details.

Drug Cost	2007	2008	2009	Last 4 Years
Anti-infectives	\$62,951	\$142,965	\$65,593	\$271,510
Antihistamines	\$40	\$114	\$10	\$172
Antineoplastics	\$103	\$2,632	\$0	\$2,735
Autonomic Drugs	\$21,862	\$26,511	\$17,885	\$66,259
Blood Derivatives	\$5,823	\$20,821	\$41,321	\$68,365
Blood Formation, Coagulation	\$28,333	\$42,996	\$41,294	\$112,532
Cardiac Drugs	\$6,960	\$4,656	\$3,638	\$15,253
Central Nervous System Drugs	\$27,391	\$58,645	\$19,526	\$105,563
Diagnostic Agents	\$552	\$1,158	\$569	\$2,278
Electrolytes	\$34,391	\$10,188	\$37,369	\$112,147
Enzymes	\$5,615	\$927	\$927	\$6,542
Eye, Ear, Nose and Throat	\$791	\$1,716	\$1,179	\$3,685
More				
Drugs	\$272,909	\$454,084	\$284,926	\$1,011,999

### Drug Class Drill Down

Rows: [ICU3] [ANTIBACTERIALS...] Columns: [Last 4 Years] Context Filter: [Forsyth Medical...] [Drugs]

Filters are applied. See the Properties pane for more details.

Drug Cost	2007	2008	2009	
BACITRACIN		\$120	\$52	\$91
BACITRACIN/POLYMYXIN	\$40		\$182	\$78
CLINDAMYCIN 300 MG/DSW 50 ML			\$209	
CLINDAMYCIN 600 MG/DSW 50 ML	\$65			\$11
CLINDAMYCIN 900 MG/DSW 50 ML			\$54	\$579
CLINDAMYCIN PHOS	\$3			
DAPTOMYCIN	\$3,523		\$4,371	\$795
LINEZOLID 600 MG/300 ML	\$11,501		\$23,045	\$9,580
VANCOMYCIN 500 MG/NS 100 ML			\$41	
VANCOMYCIN 500 MG/NS 500 ML			\$13	
VANCOMYCIN HCL	\$1,268		\$2,994	\$1,716
VANCOMYCIN HCL 1 GM/NS 250 ML	\$552		\$2,349	\$1,566
VANCOMYCIN HCL SUSP	\$3			\$101
ANTIBACTERIALS, MISCELLANEOUS	\$17,073			\$14,517

5 seconds

### Single Drug Drill Down

Rows: [ICU3] [LINEZOLID 600 M...] Columns: [2008] Context Filter: [Forsyth Medical...]

Filters are applied. See the Properties pane for more details.

Drug Cost	2008 Q 1	2008 Q 3	2008 Q 4	2008
600 MG	\$1,985	\$13,637	\$7,423	\$23,045
LINEZOLID 600 MG/300 ML	\$1,985	\$13,637	\$7,423	\$23,045

3 seconds

### DRG Top Dollar Down

Rows: [127 - HEART FAILURE & SHOCK] [Drugs (depth 2)] Columns: [2008] Context Filter: [Forsyth Medical...]


Drug Cost	2008 Q 1	2008 Q 2	2008 Q 3	2008 Q 4	2008
ENDOPARIN NA	\$22,094	\$16,771	\$10,373	\$16,127	\$65,365
NEBIBITIDE 6 MG/ML IN DSW	\$7,443	\$17,388	\$5,458	\$6,451	\$36,721
INSULIN LISPRO (HUMAN LOG)	\$5,784	\$5,515	\$3,849	\$5,067	\$19,415
SPORTIN ALFA	\$5,504	\$6,293	\$1,430	\$4,667	\$17,894
ALBUMIN HUMAN 25%	\$5,400	\$4,104	\$108	\$2,484	\$12,096
CEFTRIAZONE 1 GM/ISO 50 ML	\$3,768	\$3,641	\$1,528	\$2,928	\$11,865
FLUTICASON/SALMETEROL 250-50	\$3,100	\$3,194	\$2,763	\$2,204	\$11,261
INSULIN GLARGINE (LANTUS)	\$2,956	\$2,490	\$1,867	\$2,170	\$9,482
ARGATROBAN 1 MG/ML NS DILUTION	\$8,284				\$8,284
ADENOSINE	\$2,745	\$2,483	\$1,307	\$1,307	\$7,842
PIPER/FAZOD 3.375 GM/NS 50 ML	\$2,908	\$2,800	\$889	\$1,667	\$7,464
ALBUTEROL/PIRATROPIUM INHALER	\$1,714	\$1,238	\$1,143	\$762	\$4,857
More					
Total	\$105,651	\$99,425	\$53,179	\$80,772	\$339,026

### Length of Stay by Drug

Rows: [Combination] Columns: [2008]

Filters are applied. See the Properties pane for more details.

Avg Length of Stay	2008 Q 1	2008 Q 2	2008 Q 3	2008 Q 4	2008
LINEZOLID	13.0	15.5	13.2	16.3	14.6
DAPTOMYCIN 500 MG INJ	19.0	31.5	17.8	18.8	21.1
Total	19.9	26.7	16.9	18.9	20.4



**UNDER CONSTRUCTION**

### Conclusions

- The Cube is a useful tool for the comprehensive monitoring of drug utilization data in a large health system

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Novant Health