



Care Variation Webinar



About the Presenters

- **Graham Gilliland,**
B.S. in Biological Sciences
M.S. in Financial Risk
Management
- **Bradley Peterson,**
Co-Founder



Agenda

1. Learn **WHEN** it is best to use the Care Variation section
2. Tour of Template
3. Setting the Template
4. Walkthrough fixed table and column headings
5. Calculations / Proofs
6. Use cases and drilling



Learning Objectives

- After this Webinar you should be able to:
 - Recognize when using Care Variation can bring value to your hospital
 - Have the basics of navigating and interpreting the Care Variation Section
 - Have the foundation for further data exploration and mining
 - Be excited to start digging!



Alarm Bells

When?

- PEAK is huge! How to know when to use what is a big step
- FLAG:
 - Unexplainable increase in charges/cost between time periods
 - Large increases/decreases in charges/cost for a DRG that is normally routine
 - Questions about performance variation between high/low volume periods
 - Detecting differences in performance



Ways to Slice it

When?

- This change in performance can be represented in different ways at different levels

DRG	DRG Description
3	ECMO or trach w MV 96+ hrs or PDX exc face, mouth & neck w maj O.R.
4	Trach w MV 96+ hrs or PDX exc face, mouth & neck w/o maj O.R.
23	Cranio w major dev impl/acute complex CNS PDX w MCC or chemo implant
25	Craniotomy & endovascular intracranial procedures w MCC



DRG 4 Trach with MV 96+	
Cost Center	Cost Center Description
1	Routine
2	Lab
3	Pharmacy
4	Imaging & Diagnostic



Pharmacy		
Units per Patient Receiving	Base Charges per Patient in DRG	Service Description
1.333333	\$762.29	LOCM 100-199 MG 100ML
1.666667	\$643.57	OMNIPAQUE CONTRAST 350 100ML
20	\$8.57	LOW OSMLR CONTRST 300-399MG/ML
1	\$48.00	IV D 5-1/2 S 1000 CC
1	\$48.00	IV D 5 W 250
6.75	\$1,296.00	IV NORM SALINE 1000



Template Creation

Template

- When accessing Care Variation you will immediately be prompted to choose a **template**
- This is where you change what **time periods** you will compare
- May also compare different groups of physicians over different time periods



Template Example

Template

- Build two templates

Care Variation Performance

Select a Template

+ Add Template

Name	Base Profile	Performance Profile	DRG Type	Base Period	Performance Period	Service Unit	Actions
Worst 5 vs hospital	Worst 5 ortho	Ortho except for worst 5	TBS MS-DRG	Jan 1st, 2015 to Dec 31st, 2015	Jan 1st, 2015 to Dec 31st, 2015	CDM	View Edit Delete
Demo Plate 2	Hospital	Hospital	TBS MS-DRG	Jan 1st, 2015 to Jun 30th, 2015	Jul 1st, 2015 to Dec 31st, 2015	CDM	View Edit Delete
Infectious worst month vs best month	Hospital	Hospital	TBS MS-DRG	Jan 1st, 2014 to Jan 31st, 2014	Sep 1st, 2015 to Sep 30th, 2015	CDM	View Edit Delete
Vascular Surgery best vs worst month	Hospital	Hospital	TBS MS-DRG	Jun 1st, 2014 to Jun 30th, 2014	Mar 1st, 2015 to Mar 31st, 2015	CDM	View Edit Delete
Ortho Surgery Sep vs Oct 2015	Hospital	Hospital	TBS MS-DRG	Sep 1st, 2015 to Sep 30th, 2015	Oct 1st, 2015 to Oct 31st, 2015	CDM	View Edit Delete
Surgical--Multi	Surgical--Multi	Surgical--Multi	TBS MS-DRG	Jan 1st, 2014 to Dec 31st, 2015	Jan 1st, 2014 to Dec 31st, 2015	CDM	View Edit Delete

Care Variation Performance

Name *	<input type="text"/>
Base Period Profile *	Hospital ▼
Performance Period Profile *	Hospital ▼
DRG Type *	TBS MS-DRG ▼
Base Period *	From: January 2015 ▼ To: December 2015 ▼
Performance Period *	From: January 2015 ▼ To: December 2015 ▼
Type *	CDM ▼
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	



Calculations and Column Values

- Columns separated by APR-DRG and SOI

Care Variation Performance

Selected Template: Demo 1

Report Type: [Full Report](#)

Template Settings

Base Period Profile: Hospital

Performance Period Profile: Hospital

DRG Type: APR-DRG

Charges/Costs: [Charges](#)

Practice Condition Percent: 60

Base Period: Jul 1st, 2011 - Jun 30th, 2012

Performance Period: Jul 1st, 2012 - Jun 30th, 2013

SOI: [CDM](#)

Service Unit: CDM

Full Report

Base Period			DRG	DRG Description	SOI	Performance Period			Change	
Patient Count (DRG)	Charges per Patient in DRG	Total Charges				Patient Count (DRG)	Charges per Patient in DRG	Total Charges	Total Change	% Change
85	\$33,749	\$2,868,682	139	Other Pneumonia	3	298	\$32,434	\$9,665,185	\$6,796,504	236.92%
66	\$21,081	\$1,391,332	139	Other Pneumonia	2	242	\$33,062	\$8,001,080	\$6,609,748	475.07%
77	\$61,756	\$4,755,222	302	Knee Joint Replacement	1	169	\$58,232	\$9,841,240	\$5,086,018	106.96%
59	\$49,256	\$2,906,126	174	Percutaneous Cardiovascular Procedures W Ami	1	125	\$54,372	\$6,796,532	\$3,890,407	133.87%
8	\$144,942	\$1,159,538	163	Cardiac Valve Procedures W/O Cardiac Catheterization	2	30	\$163,363	\$4,900,885	\$3,741,347	322.66%
22	\$139,217	\$3,062,770	166	Coronary Bypass W/O Cardiac Cath Or Percutaneous Cardiac Procedure	3	47	\$143,035	\$6,722,648	\$3,659,878	119.50%
6	\$290,587	\$1,743,524	165	Coronary Bypass W Cardiac Cath Or Percutaneous Cardiac Procedure	4	20	\$270,115	\$5,402,299	\$3,658,776	209.85%
7	\$186,836	\$1,307,850	174	Percutaneous Cardiovascular Procedures W Ami	4	39	\$125,792	\$4,905,897	\$3,598,047	275.11%
112	\$72,497	\$8,119,647	302	Knee Joint Replacement	2	168	\$66,326	\$11,142,751	\$3,023,104	37.23%
15	\$183,895	\$2,758,418	710	Infectious & Parasitic Diseases Including Hiv W O.R. Procedure	4	27	\$211,625	\$5,713,867	\$2,955,449	107.14%
21	\$71,736	\$1,506,458	173	Other Vascular Procedures	2	50	\$89,144	\$4,457,220	\$2,950,762	195.87%



Layout Of Care Variation

- Base period vs Performance Period

Care Variation Performance

Selected Template: Demo Plate 2

[Switch Template](#) | [Edit Template](#)

Report Type: [Full Report](#)

Template Settings

Base Period Profile: Hospital

Performance Period Profile: Hospital

DRG Type: TBS MS-DRG

Charges/Costs: [Charges](#)

Practice Condition Percent: 60

Base Period: Jan 1st, 2015 - Jun 30th, 2015

Performance Period: Jul 1st, 2015 - Dec 31st, 2015

Service Unit: CDM

[Full Report](#) » MS-DRG: 4 - Trach w MV 96+ hrs or PDX exc face, mouth & neck w/o maj O.R.

Patients in DRG in Base Period: 7

Patients in DRG in Performance Period: 6

Base Period			Cost Center	Cost Center Description	Performance Period			Change		Change Due To			
Patient Count (Cost Center)	Charges per Patient in DRG	Total Charges			Patient Count (Cost Center)	Charges per Patient in DRG	Total Charges	Total Change	% Change	Practice	Condition	Volume/Mix	Price Change
7	\$196,298	\$1,374,086	1	Routine	6	\$170,158	\$1,020,947	\$-353,139	-25.70%	\$-187,086	\$27,020	\$-193,073	\$0
7	\$191,593	\$1,341,149	7	Therapy including: Respiratory, PT, OT, Speech	6	\$150,274	\$901,643	\$-439,507	-32.77%	\$-201,142	\$-53,221	\$-185,144	\$0
7	\$131,326	\$919,281	3	Pharmacy	6	\$85,924	\$515,546	\$-403,735	-43.92%	\$-27,592	\$-271,845	\$-96,703	\$-7,595



Calculations (Total Change)

Full Report » APR-DRG: 302 - Knee Joint Replacement, SOI = 1 » Cost Center: 9 - Supplies

Patients in DRG in Base Period: 77

Patients in DRG in Performance Period: 169

Base Period				Service Code	Service Description	Performance Period			
# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG			# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG
32	41.56%	1.2	\$37	00036182	SCREW CORT TIT SELF TAP 1.3X8	148	87.57%	1.1	\$67

Change		Change Due To			
Total Change	% Change	Practice	Condition	Volume/Mix	Price Change
\$8,577	3.00%	\$5,875	\$0	\$3,382	\$-680


(Charges per Patient Performance **\$67** * Patients in DRG in Performance period **169**) – (Charges per Patient Base period **\$37** * Patients in DRG in Base period **77**) = **\$8,500**



Organizing and explaining the variation

Change Due To			
Practice	Condition	Volume/Mix	Price Change

1. Practice
2. Condition
3. Volume/Mix
4. Price Change

Practice Condition Percent: 60 



Calculations (Volume Mix Change)

Full Report » APR-DRG: 302 - Knee Joint Replacement, SOI = 1 » Cost Center: 9 - Supplies

Patients in DRG in Base Period: 77

Patients in DRG in Performance Period: 169

Base Period				Service Code	Service Description	Performance Period			
# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG			# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG
32	41.56%	1.2	\$37	00036182	SCREW CORT TIT SELF TAP 1.3X8	148	87.57%	1.1	\$67

Notice increase in amount of patients receiving between the two time periods (32 to 148)

Change		Change Due To			
Total Change	% Change	Practice	Condition	Volume/Mix	Price Change
\$8,577	303.00%	\$5,875	\$0	\$3,382	\$-680

(Number of Patients in performance period **169** – Number of patients in Base period **77**)* Charges per patient in Base period DRG group **\$37** = \$3,400



Calculations (Price Change Mix)

Full Report » APR-DRG: 302 - Knee Joint Replacement, SOI = 1 » Cost Center: 9 - Supplies									
Patients in DRG in Base Period: 77									
Patients in DRG in Performance Period: 169									
Base Period				Service Code	Service Description	Performance Period			
# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG			# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG
32	41.56%	1.2	\$37	00036182	SCREW CORT TIT SELF TAP 1.3X8	148	87.57%	1.1	\$67
Change		Change Due To							
Total Change	% Change	Practice	Condition	Volume/Mix	Price Change				
\$8,577	303.00%	\$5,875	\$0	\$3,382	\$-680				

$$[(\text{Charges per patient in DRG Base } \$37 * \text{Patients in DRG Base } 77) / (\text{\# of patients receiving base } 32 * \text{units per patient receiving } 1.2)] -$$

$$[(\text{Charges per patient in DRG Performance } \$67 * \text{Patients in DRG Performance } 169) / (\text{\# of patients receiving Performance } 148 * \text{units per patient receiving } 1.1)] * \text{\# of Patients Receiving in Performance Period } 148 = \$-688$$



Remaining Change

Full Report » APR-DRG: 302 - Knee Joint Replacement, SOI = 1 » Cost Center: 9 - Supplies											
Patients in DRG in Base Period: 77 Patients in DRG in Performance Period: 169											
Base Period				Service Code	Service Description	Performance Period					
# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG			# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG		
32	41.56%	1.2	\$37	00036182	SCREW CORT TIT SELF TAP 1.3X8	148	87.57%	1.1	\$67		
Change		Change Due To									
Total Change	% Change	Practice	Condition	Volume/Mix	Price Change						
\$8,577	303.00%	\$5,875	\$0	\$3,382	\$-680						

- After adjusting the total change for Volume/mix and Price change there is still **\$5875** of change the needs to be explained
- This is broken down in to Practice and Condition



Calculations (Condition)

Full Report » APR-DRG: 302 - Knee Joint Replacement, SOI = 1 » Cost Center: 9 - Supplies

Patients in DRG in Base Period: 77
Patients in DRG in Performance Period: 169

Base Period				Service Code	Service Description	Performance Period			
# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG			# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG
32	41.56%	1.2	\$37	00036182	SCREW CORT TIT SELF TAP 1.3X8	148	87.57%	1.1	\$67

Change		Change Due To			
Total Change	% Change	Practice	Condition	Volume/Mix	Price Change
\$8,577	303.00%	\$5,875	\$0	\$3,382	\$-680

- If under 60% of patients within DRG (Knee Joint Replacement SOI 1) in both Performance and Base period received a particular charge, The change is explained by patients condition



Calculation (Condition)

Full Report

Base Period			302		1	Performance Period		
Patient Count (DRG)	Charges per Patient in DRG	Total Charges	DRG	DRG Description	SOI	Patient Count (DRG)	Charges per Patient in DRG	Total Charges
77	\$61,756	\$4,755,222	302	Knee Joint Replacement	1	169	\$58,232	\$9,841,240

1/1 20

Change Due To			
Practice	Condition	Volume/Mix	Price Change
\$-317,962	\$604,906	\$5,654,093	\$-855,018

- For this DRG and SOI \$604,906 of variation is explained by patient conditions
- Example: During flu-season Knee replacement patients also received treatment for Flu while at hospital for their knee replacement

Calculation (Practice)

Full Report » APR-DRG: 302 - Knee Joint Replacement, SOI = 1 » Cost Center: 9 - Supplies

Patients in DRG in Base Period: 77
Patients in DRG in Performance Period: 169

Base Period				Service Code	Service Description	Performance Period			
# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG			# Patients Receiving	% of Patients	Units Per Patient Receiving	Charges per Patient in DRG
32	41.56%	1.2	\$37	00036182	SCREW CORT TIT SELF TAP 1.3X8	148	87.57%	1.1	\$67

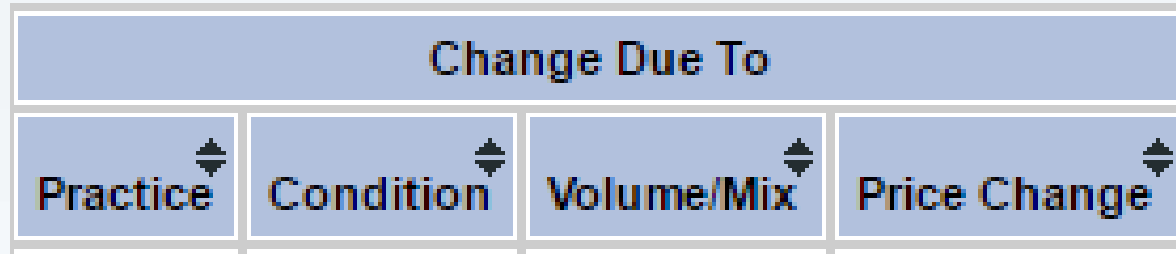
Change		Change Due To			
Total Change	% Change	Practice	Condition	Volume/Mix	Price Change
\$8,577	303.00%	\$5,875	\$0	\$3,382	\$-680

- If more than 60% of patients within the DRG 302 SOI 1 received a particular charge in either the **base** or **performance** period, this charge is considered a change due to physician practice



Organizing and explaining the variation

Review



1. Practice
2. Condition
3. Volume/Mix
4. Price Change

Practice Condition Percent: 60 

Explains the variation in Cost between the 2 periods.



Use Cases

Practice
Practice
Practice

- PEAK examples
 - Walk through
 - Ask Questions as needed



Upcoming Webinars

Webinar Name	Date
Care Variation Section	July 29 10:00 – 11:00 August 10 11:00-12:00
PPC and PPR Sections	July 29 12:00 – 1:00
Nursing Units Usage	August 9 2:00 – 3:00 August 17 11:00 – 12:00

For more information, contact TBS Support:

(970) 204-7871 x810

support@totalbenchmarksolution.com

