

# **The Balanced Score Card in Health Care**



- ⌘ Origins and rationale**
- ⌘ Content**
- ⌘ Implementation**
- ⌘ Issues and challenges**
- ⌘ Work in progress**

**M. Ward  
Division of Medicine  
Royal Brisbane Hospital**

# BSC: Origins



- ⌘ A broad-based performance measurement system developed for commercial use (Kaplan & Norton 1993)
- ⌘ Widely used various forms in large commercial and government organisations
- ⌘ Increasing use by health care industry in USA

# BSC : Rationale



- ⌘ Traditional financial markers are necessary, but not sufficient to measure organisational success
- ⌘ Methods of linking organisational goals & values with day to day activity are often inadequate - the "*vision-reality gap*"
- ⌘ Better measures often needed of "intangible assets" eg staff knowledge and skills

# BSC : Rationale



⌘ The “*vision-reality gap*” - evidence of the problem from industry surveys :

☑ Only 57 % senior management and 7% of middle managers and operational staff know how to translate organisational visions and goals into practice (Kaplan 93)

# **BSC : An aeronautical analogy**



- ⌘ An aircraft instrument panel contains more than a fuel gauge
- ⌘ Various other instruments and warning lights are usually considered essential- eg :  
GPS/compass, altimeter, airspeed indicator, mileage traveled etc
- ⌘ If you only have a fuel gauge, it may be difficult to avoid mountains or arrive at the right airport

# BSC : Content - 4 standard dimensions



⌘ Client / customer *How do we look to our customers ?*

☒ Service quality, customer satisfaction, return business

⌘ Internal operations *How efficient / effective are we ?*

☒ Volume / rate / cost of production

⌘ Learning *Do our staff have the knowledge and skills they need now and for the future ?*

☒ Work practice protocols / innovation, research, education

⌘ Financial *How do we look to our funders ?*

☒ Budget - expenditure variances, return on investment

# BSC : The 5th dimension - staff



⌘ Staff : *How do we look to our staff ?*

☑ Workplace climate surveys

☑ Turnover

☑ Unfilled vacancies

☑ Number of appropriately skilled applicants for key positions

☑ Sick leave

# BSC in health care



⌘ Quality : *How well do we meet the patients needs ?*

☒ Outcomes, mortality, adverse events, satisfaction surveys, waiting times, complaints:compliments ratios

⌘ Activity: *How efficient and effective are we ?*

☒ Weighted separations, average length of stay, occasions of service, occupied bed days etc

⌘ Learning : *Do our staff have the right knowledge ?*

☒ Workplace innovation, publications, presentations, teaching

⌘ Financial : *How do we look to our funders ?*

☒ Year to date expenditure vs budget, cost per weighted separation



# BSC: health care experience



⌘ Duke Children's Hospital USA (*Meliones J. Harvard Business Review Nov-Dec 2000*)

☑ 1996 to 2000

☑ Cost per case reduced by 12%

☑ Average length of stay reduced by 22%

☑ Patient satisfaction increased by 8%

⌘ NB : BSC and pathways & change management

# BSC : Implementation



- ⌘ Obtain commitment from senior management
- ⌘ Recruit key clinicians / service delivery staff
  - ☑ Demonstrate the relevance of the measures to their work
  - ☑ Involve them in the choice of measures
- ⌘ Develop data collection and analysis infrastructure
- ⌘ Progress from snapshots to serial measurements for trend lines and control charts

# Measurement issues



## ⌘ Lag vs Lead vs Control

- ☒ *Goal* = Balanced budget
- ☒ *Lag indicator* = Expenditure over-run
- ☒ *Lead indicator* = Trend in drug costs
- ☒ *Control indicator* = Volume /type of prescriptions

## ⌘ Frequency of measurement

- ☒ Monthly : activity / finance
- ☒ Quarterly : quality of care / innovations

# **RBH - Current use**



- ⌘ All Divisions now using balanced score cards for monthly reports to Hospital Executive
- ⌘ Well accepted by departmental heads
- ⌘ Departments within Divisions in process of building local versions to roll up into divisional score card
- ⌘ Division of Medicine - restructured management advisory group agenda and filing system around BSC format

# Issues and challenges



- ⌘ Who are the customers ?
- ⌘ The data !! - content and processes
- ⌘ Public sector reverse cycle risks
- ⌘ Integrating the BSC with the:
  - ☑ Quality Improvement Cycle
  - ☑ Business planning process

# **BSC : Who are the customers ?**



- ⌘ The patient ?
- ⌘ The referring doctor ?
- ⌘ The Health Dept ?
- ⌘ The Government ?
- ⌘ The taxpayer ?
- ⌘ All of the above ?

# Data issues



- ⌘ Limited central data set
- ⌘ Identifying relevant local data
- ⌘ Finding suitable benchmarks / targets
- ⌘ Merging central and local data
- ⌘ Automating the task
- ⌘ Checking validity and meaning
- ⌘ Cost of collection vs utility of information
- ⌘ Statistical mind sets : trends vs t-tests

# Data - current central BSC data source

The image shows a screenshot of a Microsoft Excel spreadsheet titled "Microsoft Excel - Medicine.XLS [Read-Only]". The spreadsheet has a yellow background and contains a form for selecting medical division reporting specialties. The form is titled "Royal Brisbane Hospital" and "Please Select Medical Division Reporting Specialty". It features a grid of buttons for various medical specialties, including Cardiology, Convalescence, Dermatology, Endocrinology, Gastroenterology, General Medicine, Geriatrics, Immunology, Infectious Diseases, Liver, Neurology, Stroke, Renal, Respiratory Medicine, and Rheumatology. A "Medical Division Summary" button is located at the bottom of the grid.

Royal Brisbane Hospital			
Please Select Medical Division Reporting Specialty			
Cardiology	Convalescence	Dermatology	Endocrinology
Gastroenterology	General Medicine	Geriatrics	Immunology
Infectious Diseases	Liver	Neurology	Stroke
Renal	Respiratory Medicine	Rheumatology	
Medical Division Summary			



# Data - current central BSC data source

Microsoft Excel - Medicine.XLS [Read-Only]											
File Edit View Insert Format Tools Data Window Help											
Arial 12 B I U [Text Alignment] [Number Format] [Styles] 100%											
A1161											
	A	C	E	F	G	I	J	K	L	M	N
1163	Activity										
1164	Performance Measure	Number for Month	Quota for Month	Variance Month	Number YTD	Quota YTD	Variance YTD	Full Year Quota	Comments		
1165	Acute Separations										
1166	Same Day	1,493			5,649						
1168	Non-Sameday	609			2,551						
1170	Elective	1,547			5,842						
1172	Emergency	555			2,358						
1174	Total	2,102	1,931	171	8,200	7,752	448	22,873			
1176	Acute Weighted Seps	0			8,451						
1178	Acute Beddays	6,967	6,436	531	28,039	25,963	2,076	74,853			
1180	Outpatient OOS	3,532			11,400						
1182	Quality										
1183	Performance Measure	Result for Month	Target for Month	Variance Month	Result YTD	Target YTD	Variance YTD	Full Year Target	Benchmark (if appropriate)	Comments	
1184											
1185											
1186											
1188	Access										
1189	Performance Measure	Result for Month	Target for Month	Variance Month	Result YTD	Target YTD	Variance YTD	Full Year Target	Benchmark (if appropriate)	Comments	
1190											
1191											
1192											
1194	Efficiency										
1195	Performance Measure	Result for Month	Target for Month	Variance Month	Result YTD	Target YTD	Variance YTD	Full Year Target	Benchmark (if appropriate)	Comments	
1196	Acute ALOS	3.34	3.33	0.02	3.43	3.35	0.07	3.37			

# Data - current central BSC data source

Microsoft Excel - Medicine.XLS [Read-Only]

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

A802 =

**Royal Brisbane Hospital - Division of Medicine**

**Division Summary**

**Activity Graphs**

**Inpatients**

**By specialty**

- Actual Seps Weighted Seps
- Casemix Index Actual V's Quota Seps
- Occupied Beddays Average Length of Stay
- Public Seps Private Seps
- Emergency Seps Elective Seps
- Day Only Seps Deaths Seps

**By Month**

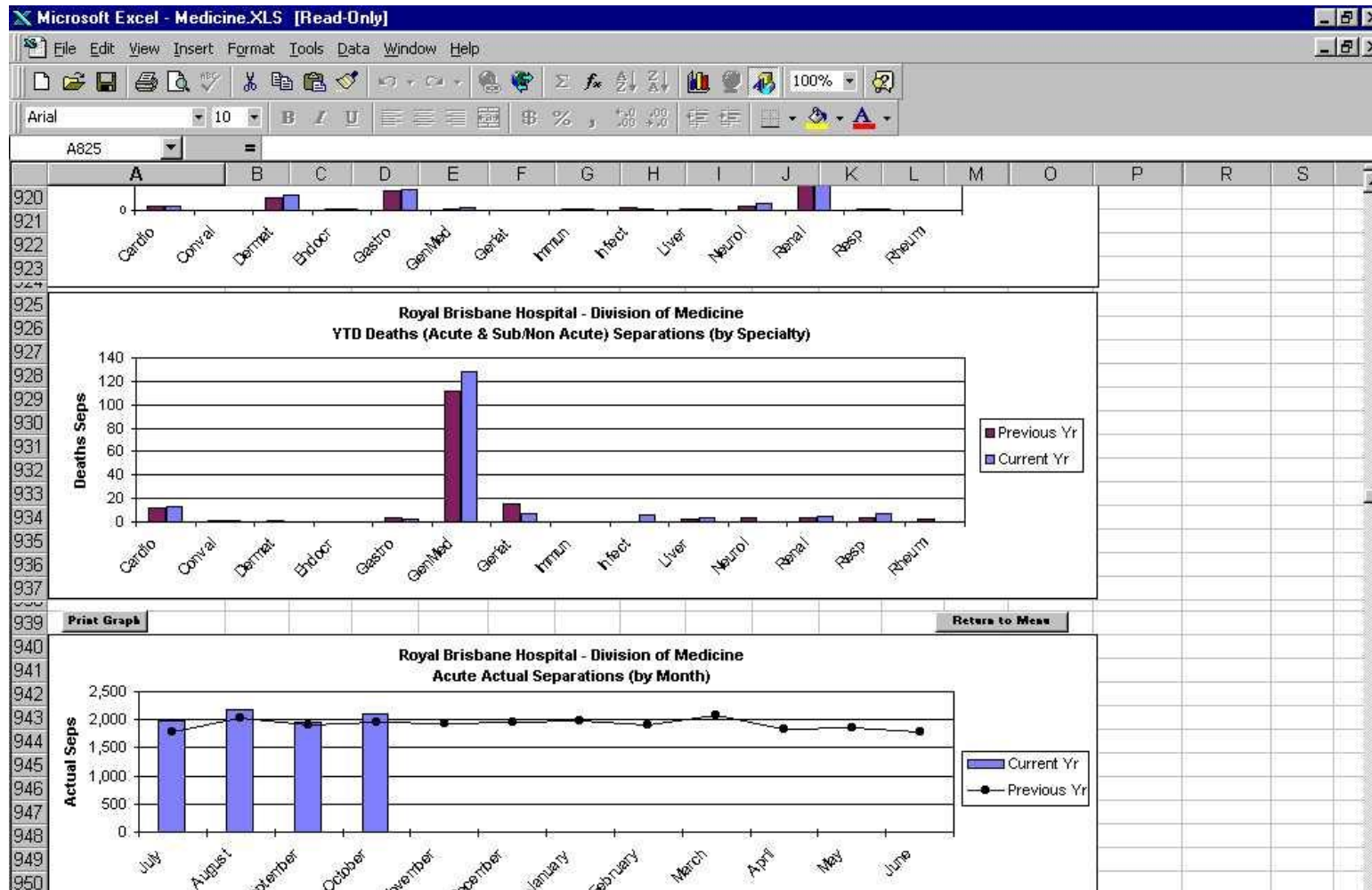
- Actual Seps Weighted Seps
- Casemix Index Actual V's Quota Seps
- Occupied Beddays Average Length of Stay
- Public Seps Private Seps
- Emergency Seps Elective Seps
- Day Only Seps Deaths Seps

**Outpatients**

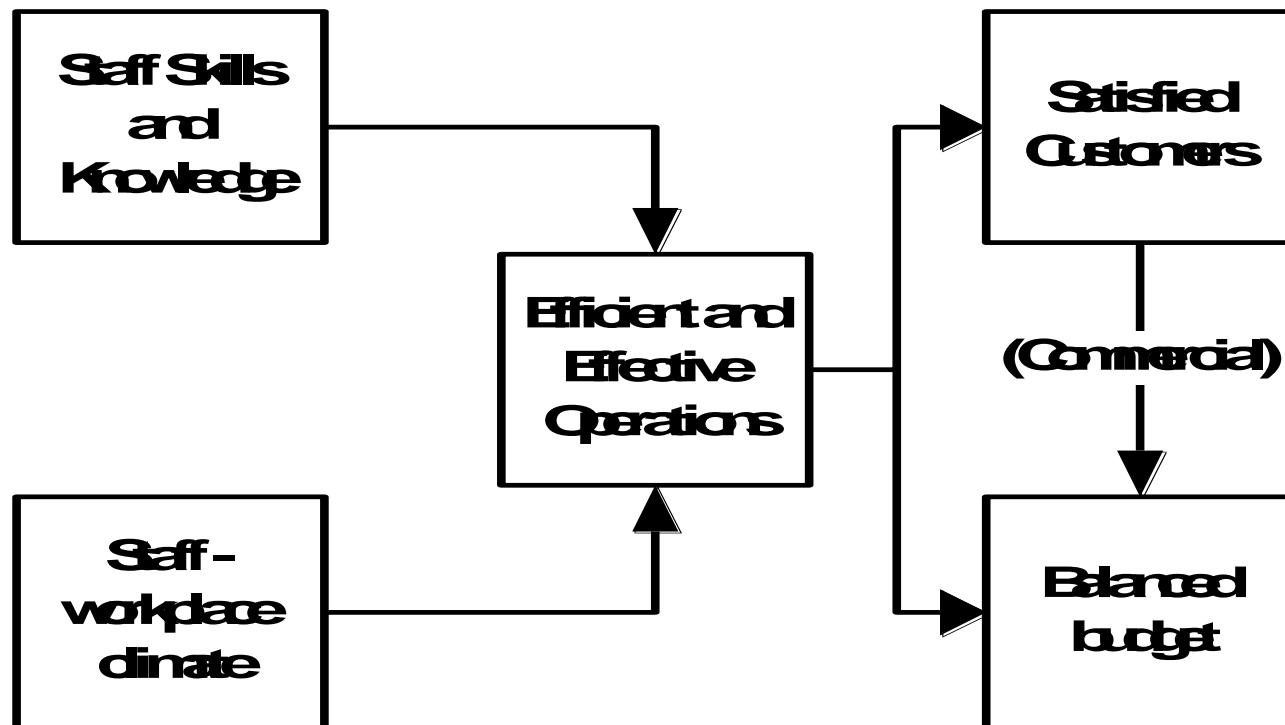
- Clinic Waiting Times
- Occasions of Service

[Return to Menu](#)

# Data - current central BSC data source

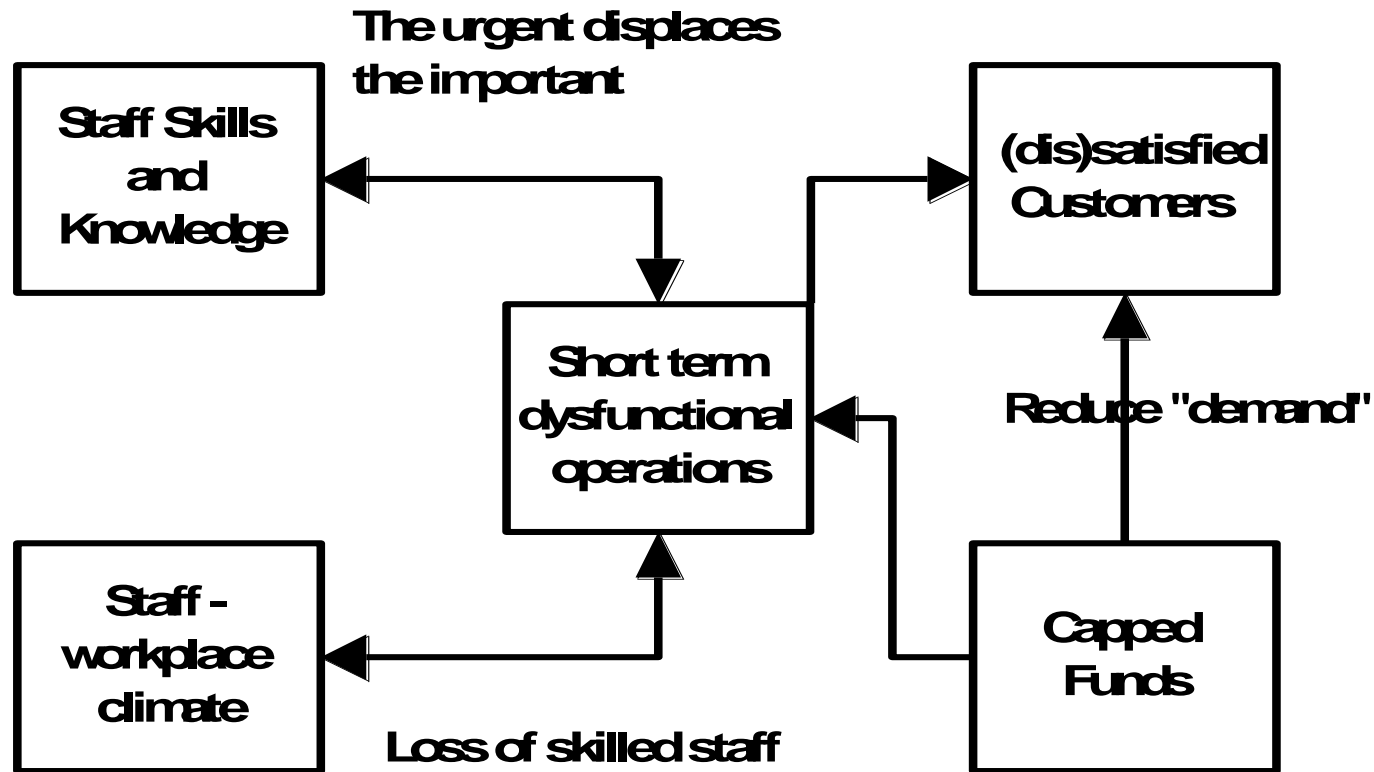


# Assumptions about BSC linkages (in good times)



# Public sector in hard times ....

*- risks of putting the engine in reverse*



# Integrating with the CQI cycle



⌘ The PDCA cycle simplified :

☐ Planning : *What are we trying to improve ?*

☐ Measurement : *How will we know when we've done it ?*

☐ Implementation : *How do we change things ?*

# Work in progress



⌘ Planning : *What are we trying to achieve ?*

- ☒ RBH : Clinical Service Development Group

- ☒ Quality Improvement and Enhancement Program (QIEP) : Clinician Led Management

- ☒ QIEP - Medical Quality Processes (MQP)

  - ☒ Guidelines web site and network

# Work in progress



⌘ Measurement : *How will we know when we've done it ?*

☒ QIEP-MQP

☒ Clinical Indicators

☒ IT/IM support

- "Teleform"
- PDA database

☒ RBH

☒ Balanced Score Card

☒ Balanced Score Card Generator



# Work in progress



## ⌘ Implementation *"What do we need to change?"*

### ☒ Clinical Support Systems Project

- ☒ Implementation of evidence based practice in heart failure and coronary thrombosis

### ☒ Clinical Service Improvement Collaborative

### ☒ RBH Clinical Service Development Group

#### ☒ Innovation's /project management

- Medical Assessment and planning unit
- Medical Day Procedure Unit

# Clinical Service Improvement Collaborative



- ☒ Built on existing MQP and other networks
- ☒ Voluntary membership
- ☒ Confidential sharing of sensitive information
- ☒ Information exchange / integration
- ☒ Collegiate learning model
- ☒ Health Round Table benchmarking model

# Work in progress :

## Balanced Score Card Manager



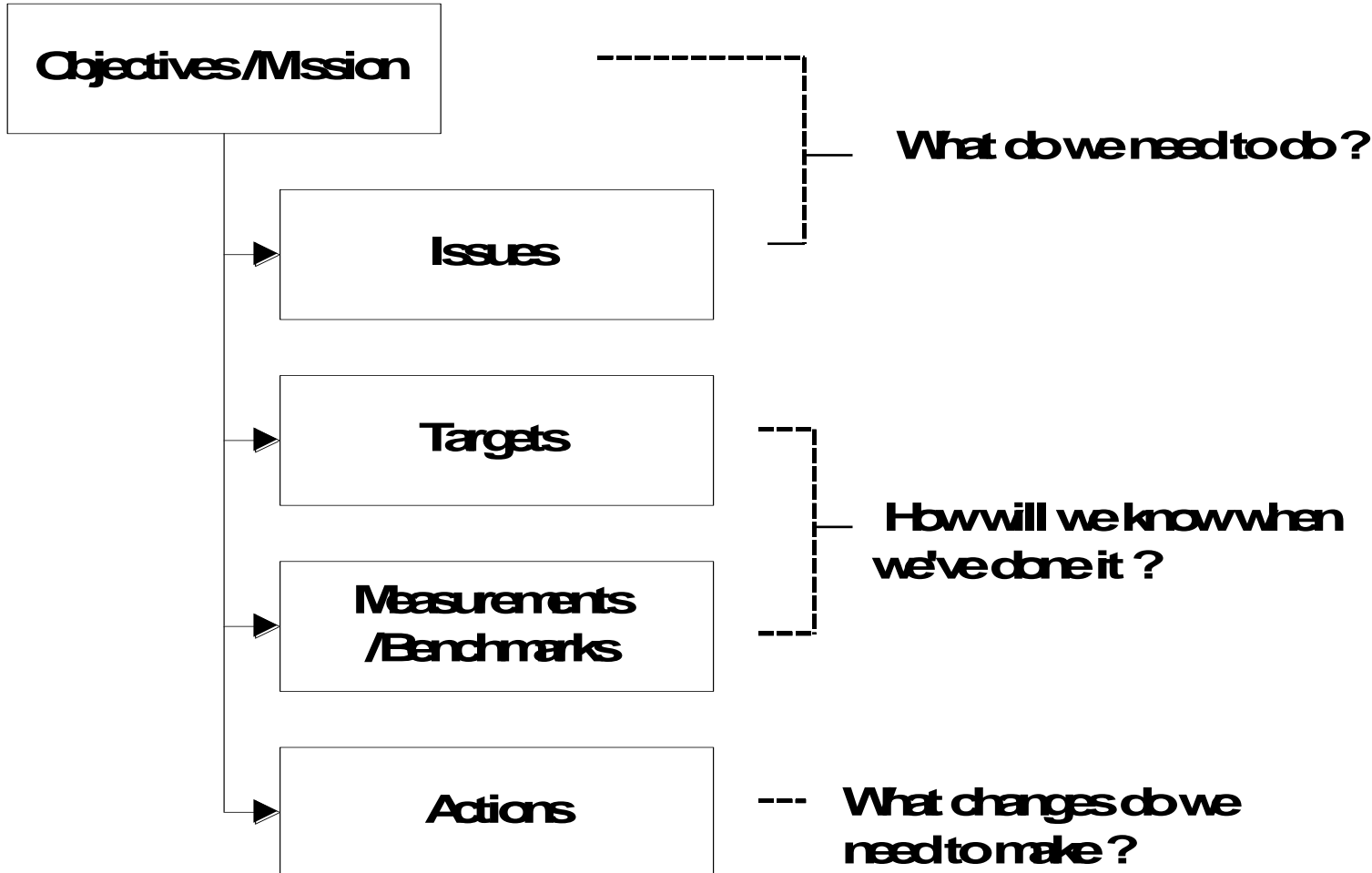
### ⌘ Objectives:

- ☑ Integrate central and local data
- ☑ Single validated source
  - ☒ DSS / Transition II etc
- ☑ Reduce data collection / analysis burden

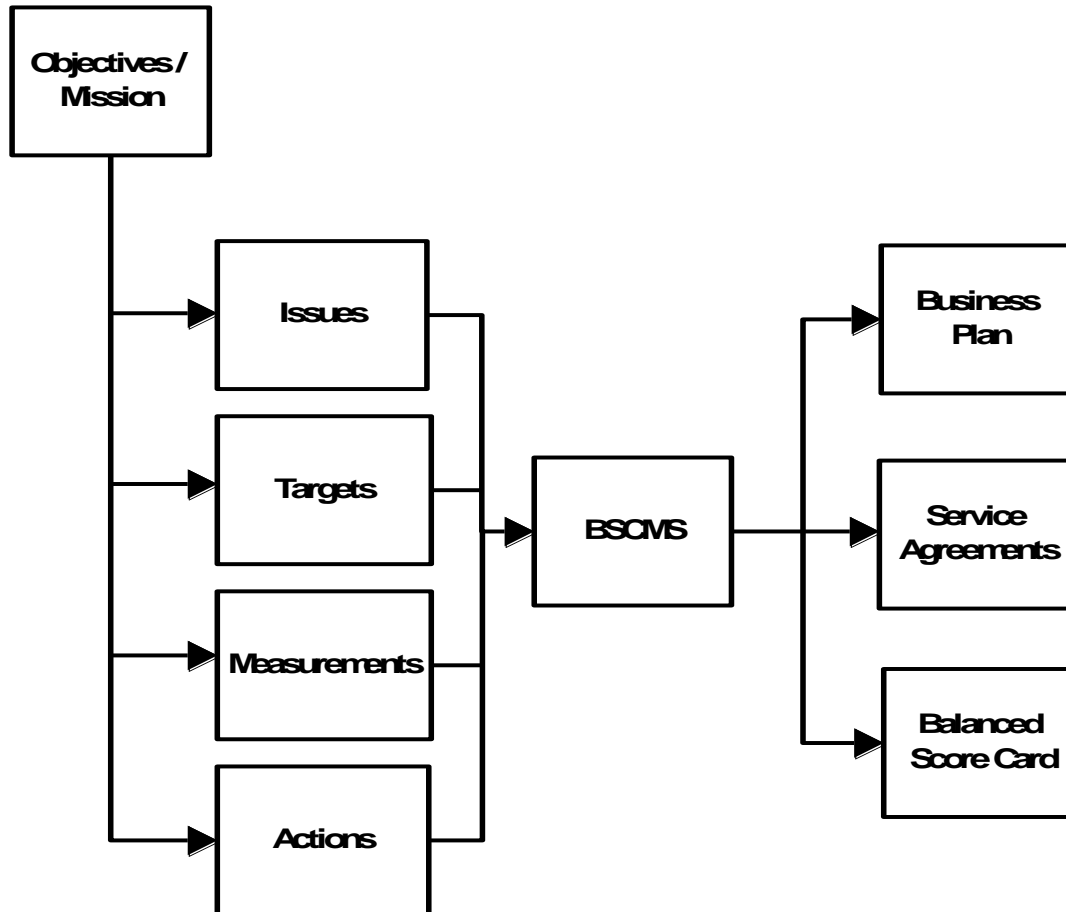
### ⌘ Hypothesis

- ☑ One data structure meets many needs

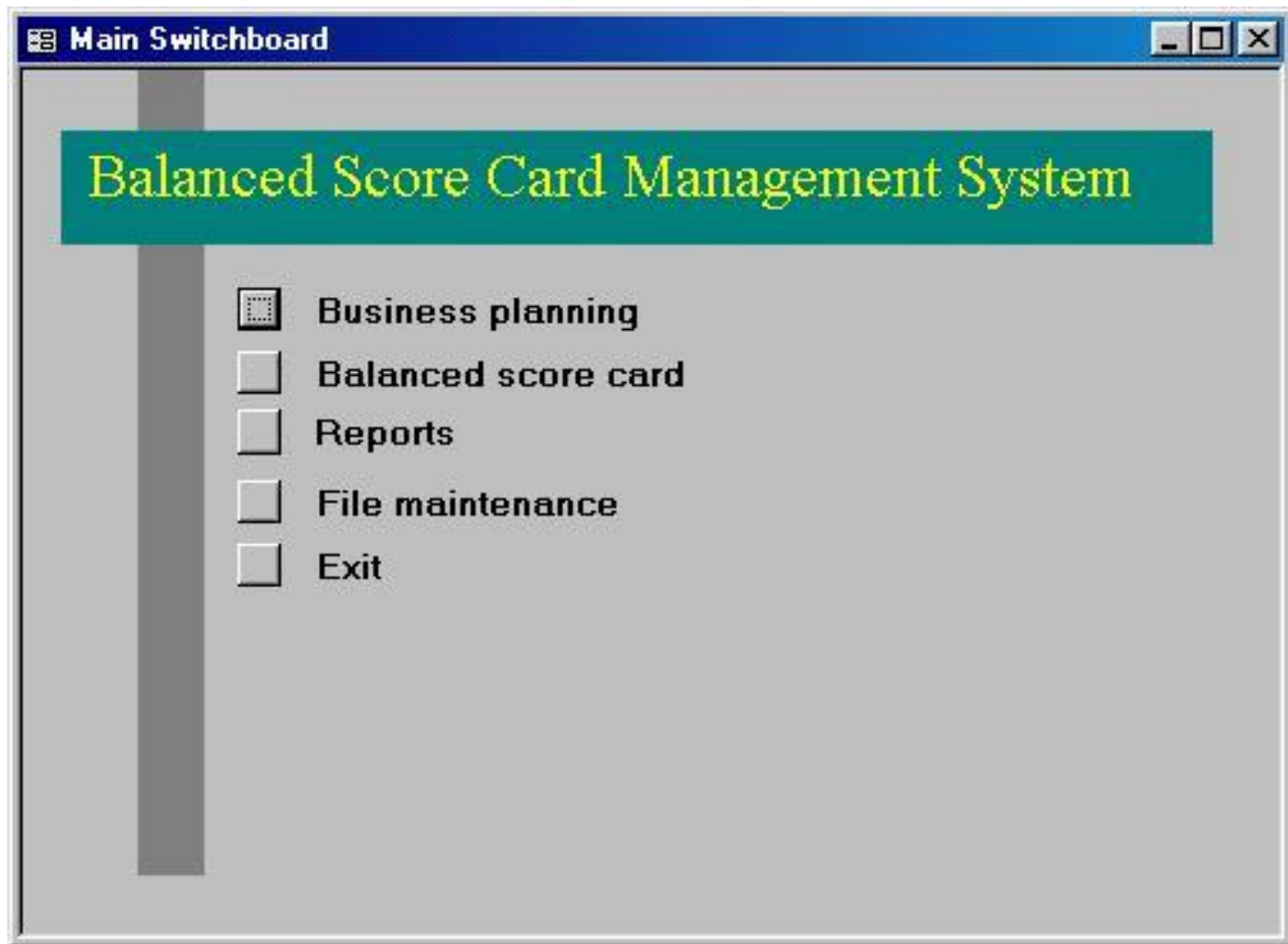
# Balanced Score Card Manager Structure



# Balanced Score Card Manager Hypothesis



# Balanced Score Card Management System (BSCMS)



# BSCMS - Business Planning

The screenshot displays the BSCMS Business Planning interface. On the left, a sidebar titled "Planning" contains a green box with the text "Balanced Score" and three unchecked checkboxes labeled "Planning", "Score can", and "Return to". The main window is titled "B Plan Selector : Form" and contains the heading "Selection Criteria for Business Planning". Below this heading is the label "Select Department". A list box titled "DIVISION" contains the following departments: CARDIOLOGY, DERMATOLOGY, ENDOCRINOLOGY, GASTROENTEROLOGY, GERIATRICS, INFECTIOUS DISEASE, INTERNAL MEDICINE, LIVER, NEUROLOGY, NUCLEAR MEDICINE, RENAL, RHEUMATOLOGY, THORACIC, NURSING, CLIN SERV DEV GP, DIRECTORATE, CONVALESCENCE, and IMMUNOLOGY. To the right of the list box is an "Output" section with three buttons: "Screen", "Print", and "Exit".

**B Plan Selector : Form**

Selection Criteria for Business Planning

Select Department

**DIVISION**

- CARDIOLOGY
- DERMATOLOGY
- ENDOCRINOLOGY
- GASTROENTEROLOGY
- GERIATRICS
- INFECTIOUS DISEASE
- INTERNAL MEDICINE
- LIVER
- NEUROLOGY
- NUCLEAR MEDICINE
- RENAL
- RHEUMATOLOGY
- THORACIC
- NURSING
- CLIN SERV DEV GP
- DIRECTORATE
- CONVALESCENCE
- IMMUNOLOGY

**Output**

Screen

Print

Exit

# BSCMS - Business Planning

**Balanced Score Card**

File Edit View Insert Format Records Tools Window Help

Owner\_Issues\_Actions BSC

DIVISION

**Issues**

Issue	BSC	Type	Int/Ext:	Rep
Clinical Services Development Group	Learning	Achievement	All Internal	Yes
Internal / external service agreements	Activities	Need - Communic:	Internal=Exterr	Yes
Divisional / Departmental MAG structure / processes	Activities	Need - Organisatic	All Internal	Yes
Staff development / management training	Learning	Need - Skill/Educa	All Internal	No
Concerns re ALOS in some DRGS	Activities	Need - Staff	Internal=Exterr	Yes
New bed allocations / nursing workforce	Activities	Risk - Costs	Internal=Exterr	Yes
Drug budget impact / growth	Finance	Risk - Costs	Mostly Externa	Yes

Record: 8 of 11

**Actions**

Action	Act Date	By	Status	Capital
Campaign to all staff groups and monitoring	01/06/2001	Ward,	In progress	
Cohort study	01/06/2001	Levy,J	Completed	\$0.00
Profiling physicians	01/06/2001	Ward,	In progress	\$0.00

Record: 1 of 3

Record: 1 of 1 (Filtered)

BSC\_gen

Form View



# BSCMS - Targets / Templates

Owner\_targets

BSC targets-template

RENAL

Measurement	Staff	BSC Type	Subtype	Interval	Benchm	Bench
FTE - Total	All,	Activities	None	Annual	Last y	0.00
Beds - Non Acute overnight	All,	Activities	None	Total	Quota	8.00
Separations - Acute (excl. same day)	All,	Activities	None	Annual	Quota	492.00
Separations - Acute same day	All,	Activities	None	Annual	Quota	1927.00
Occupied bed days -acute	All,	Activities	None	Annual	Quota	1440.00
Occupied Bed Days Acute Same Day	All,	Activities	None	Annual	Quota	1927.00
Beds - Acute Overnight	All,	Activities	None	Total	Quota	10.00
Beds - Acute Same day	All,	Activities	None	Total	Quota	22.00
FTE - Medical	All,	Activities	None	Annual	Budge	0.00
FTE - Nursing	All,	Activities	None	Annual	Budge	0.00
FTE - Admin		Activities	None	Annual	Budge	0.00
FTE - Operational		Activities	None	Annual	Budge	0.00
Budget - Allocation		Activities	None	Annual	Budge	0.00

Record: 1 of 16

Record: 1 of 1 (Filtered)

BSC\_gen

Form View

FLTR

# BSCMS - Select from Score card log

The screenshot displays the 'BSCMS' software interface. The main window is titled 'Balanced Score Card' and contains a menu bar (File, Edit, View, Insert, Format, Records, Tools, Window, Help) and a toolbar with various icons. A dialog box titled 'BSC Log Selector : Form' is open, showing 'Selection Criteria for Balanced Score Card Log'. The dialog box has four sections: 'Select Department' with a list box containing 'DIVISION', 'CARDIOLOGY', 'DERMATOLOGY', 'ENDOCRINOLOGY', and 'GASTROENTEROLOGY'; 'Select Year' with a list box containing '1999', '2000', '2001', '2002', and '00-01'; 'Select Month' with a list box containing 'January', 'February', 'March', 'April', and 'May'; and 'Select Staff' with a list box containing 'All', 'Allworth,A', 'Appaddurai,K', 'Askew,A', and 'Atherton,I'. The 'Output' section has two radio buttons: 'Preview' (selected) and 'Printer'. There are 'Go' and 'Exit' buttons next to the 'Output' section. The status bar at the bottom shows 'Form View'.

**Balanced Score Card**

File Edit View Insert Format Records Tools Window Help

**Balanced score card generator**

**BSC Log Selector : Form**

Selection Criteria for Balanced Score Card Log

**Select Department**

DIVISION  
CARDIOLOGY  
DERMATOLOGY  
ENDOCRINOLOGY  
GASTROENTEROLOGY

**Select Year**

1999  
2000  
2001  
2002  
00-01

**Select Month**

January  
February  
March  
April  
May

**Select Staff**

All  
Allworth,A  
Appaddurai,K  
Askew,A  
Atherton,I

**Output**

☒ Preview  
☐ Printer

Go Exit

BSC\_gen : ...

Form View

# BSCMS - Score card log output

**Balanced Score Card - [Owner\_BSC Log]**

File Edit View Tools Window Help

100% Close

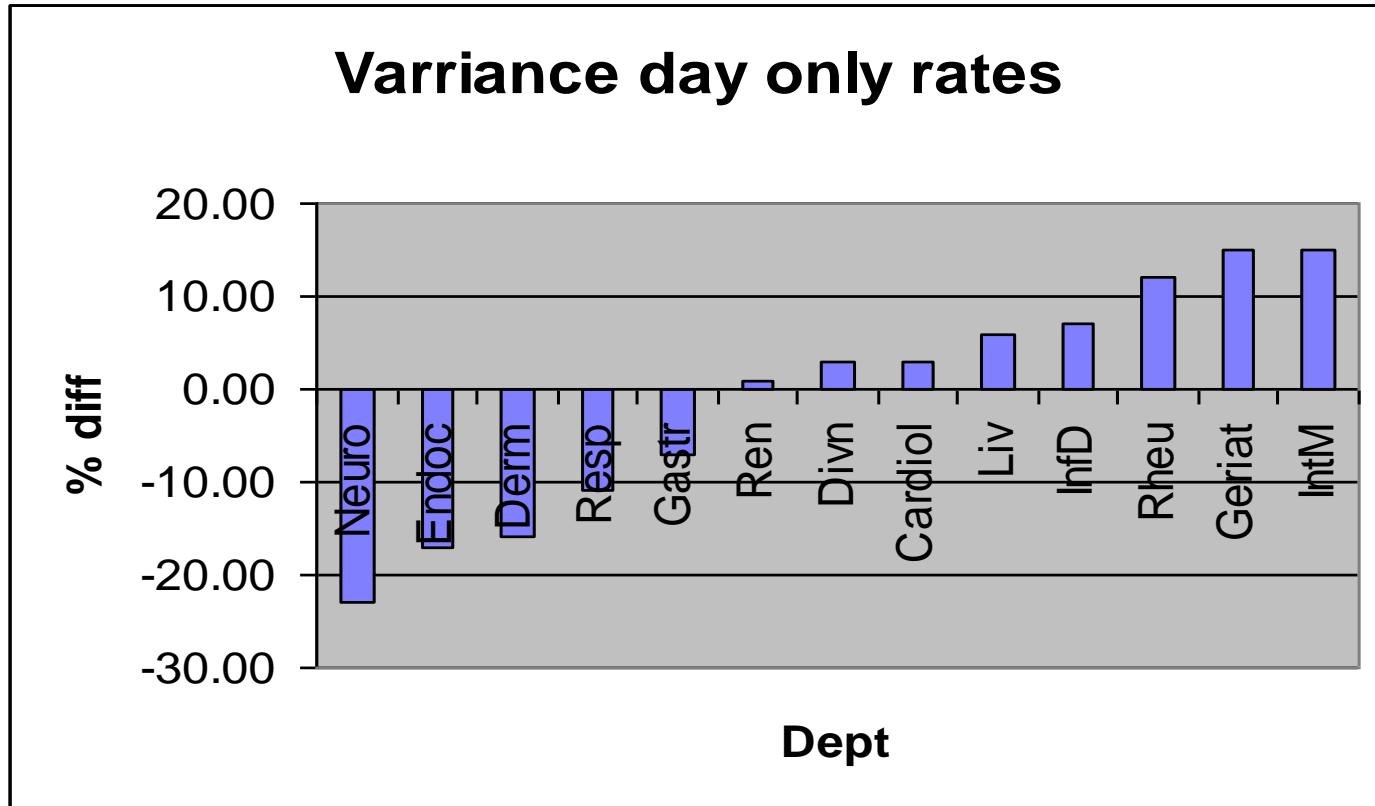
## Balanced Score Card

Owner	Year	Month	Staff	BSC Type	Measurement	Bench-value	Curr-value
INFECTIOU	2001	March	All,	Activities	FTE - YTD Total	54.09	57.39
INFECTIOU	2001	March	All,	Finance	Expenditure Actual	290865.00	309389.80
INFECTIOU	2001	March	All,	Activities	Beds - Acute Overnig	5.00	13.00
INFECTIOU	2001	March	All,	Activities		2603717.00	2861602.00
INFECTIOU	2001	March	All,	Activities	Separations - Total	30.00	33.00
INFECTIOU	2001	March	All,	Activities	Av. LOS - all	5.16	12.64
INFECTIOU	2001	March	All,	Activities	Separations - Acute s	14.00	12.00
INFECTIOU	2001	March	All,	Quality	Waiting Time - Outpa	1.00	1.00

Page: 1

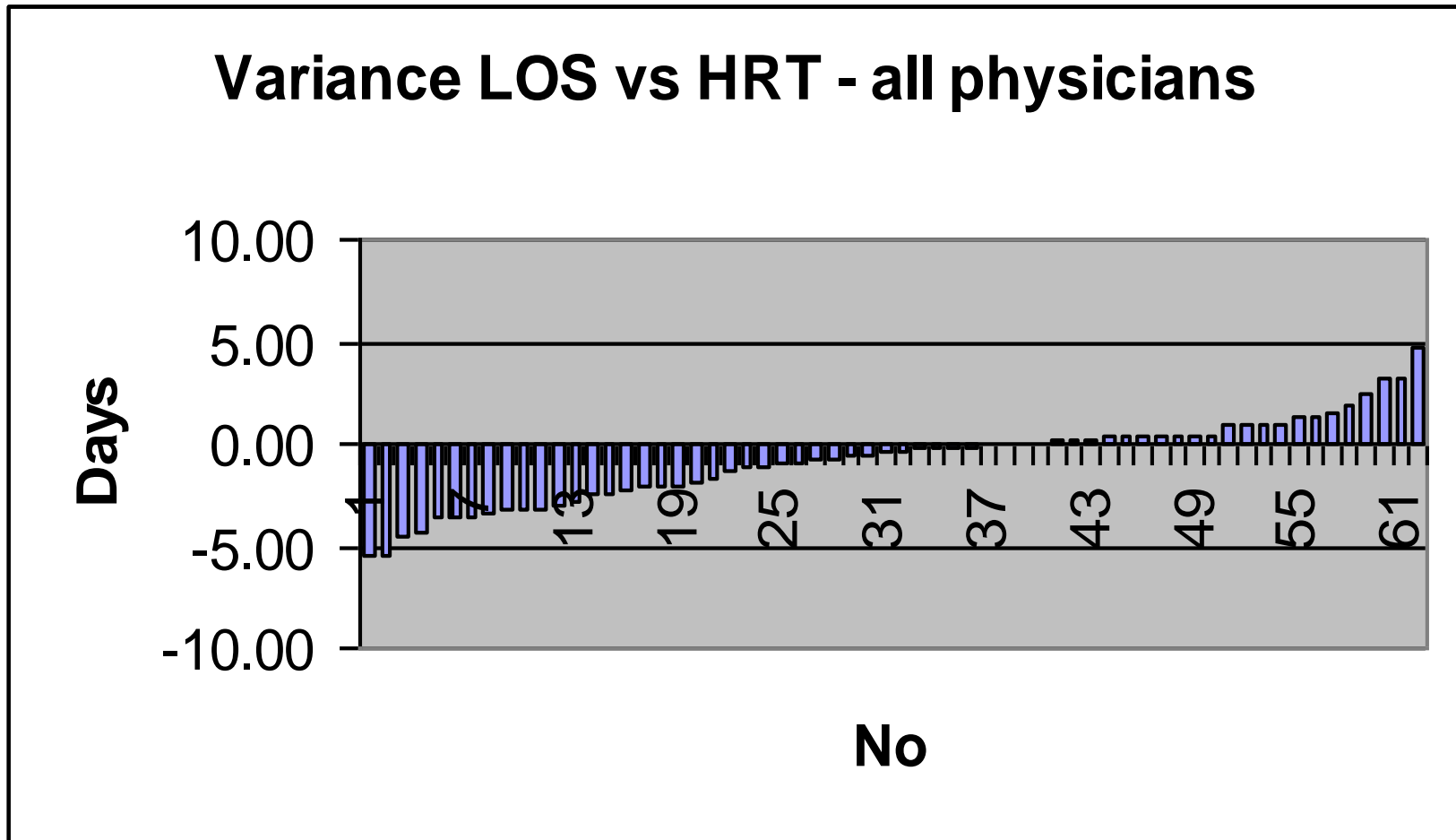
Ready

# Balanced Score Card Manager - Output



6/12 data 2000 HRT benchmark - (-ve = better than HRT)

# Balanced Score Card Manager - Output



6/12 data 2000 HRT benchmark - (+ve > HRT)

# Lessons learnt



- ⌘ Measure the performance of the teams that are measuring performance
- ⌘ Understand and accommodate clinician priorities and preferred learning methods
- ⌘ Clarify and reinforce the link between:
  - ☑ the problem and the measurement
  - ☑ the measurement and the intervention

# Measure performance of teams



- ⌘ Level 1 - Meetings held
- ⌘ Level 2 - Measurements made but no change
- ⌘ Level 3 - Modest improvements
- ⌘ Level 4 - Significant gains
- ⌘ Level 5 - Equal to best practice

# Keys to clinician support



- ⌘ Recruit by letting them identify the local problem to be solved
- ⌘ Build on existing “collegiate” clinician networks
- ⌘ Use preferred learning methods/ peer review



# Summary



- ⌘ The Balanced Score Card is valuable for
  - ☑ measuring and addressing the “vision-reality gap”
  - ☑ monitoring a broad range of activities
  - ☑ linking business and clinical management objectives
- ⌘ It is easily adapted for the health care environment provided :
  - ☑ High level organisational commitment
  - ☑ There is local ownership of relevant data / indicators
  - ☑ Adequate IT/IM support

# Summary



⌘ Major challenges are :

- ☑ Developing integrated / automated data collection and analysis systems
- ☑ Capturing and maintaining clinician commitment
- ☑ Linking problems with measurements and measurements with implementation of relevant improvements