A Ten Year Journey towards an Accountable and Sustainable Patient-Centred Care Model

Jose Aguilera
About Us

- Leading Australian Private Not-for-Profit Hospital
- Acute elective surgical
- Teaching hospital of UNSW, ACU, Utas, Notre Dame
- Accredited by ACHS & Magnet Recognition Program®
- 270 beds
- 13 Operating Theatres (21,000 procedures)
- 12 Intensive Care Beds
- Average overnight Occupancy 85%
- Broad casemix, with a complexity index of 1.8
## What We Do

<table>
<thead>
<tr>
<th>Orthopaedic</th>
<th>Cardiology</th>
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<tr>
<td>Cardio-thoracic</td>
<td>Interventional Cardiology</td>
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<td>Plastic</td>
<td>Thoracic Medicine</td>
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<td>Neurosurgery</td>
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<td>General surgery</td>
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<td>Gastrointestinal</td>
<td>SDC</td>
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<td>Urology</td>
<td>Mental Health</td>
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<td>ENT</td>
<td>Head and Neck</td>
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Research Question

What effect has the Balanced Scorecard, the Magnet Recognition Program® and Revenue Cycle Management had on SVPHS pursuit of an accountable and sustainable Patient-Centred Care Model?
Background to the research

SVPHS challenge:

*Achieve organisational sustainability whilst advancing the Quality & Safety agenda*
Research aims and objectives

- Evaluate the effectiveness of the BSC, MRP & RCM
- Formulate a ‘Blue-Print’ / ‘Conceptual Model’
- Assist other healthcare organisations
- Contribute to theory and knowledge
Methodology

- Mixed method organisational single case study
- Sequential explanatory design (Creswell et al., 2003)
Three frameworks - base & reporting years

- Balanced Scorecard
  Base Year 2004
  Reporting Years 2005-2010

- Magnet Recognition Program®
  Base Year 2010
  Reporting Years 2011-2013

- Revenue Cycle Management
  Base Year 2013
  Reporting Years 2014-2015
Logic Model – BSC, MRP® & RCM

Problem Statement:
Goal:
Resources → Activities → Outputs → Outcomes → Impact

Rationale:
Assumptions:
Problem Statement: SVPHS’ Nursing Directorate did not have a performance improvement framework and there was a need to increase the Hospital’s overall performance towards achieving an accountable and sustainable patient-centred care model.

Goal: To improve accountability, efficiency and performance within SVPHS’ Nursing Directorate in pursuit of an accountable and sustainable patient-centred care model.

Resources:
- Education & training
- Managers workshops
- BSC software
- Consultant fees
- One part time Data entry

Activities:
- Technology planning
- Selecting & implementing
- Staff education and training
- Network support
- Dev Strategic Plan
- Cascading the strategy
- Measuring and reporting
- Acting on results
- Evaluating uptake

Outputs:
- Framework selected and implemented
- Staff using the framework
- Patients being rounded and involved
- Staff acting on patient’s variance reports
- Assessing & reviewing practice

Outcomes:
- Improved: HAPU, Patient Falls, LTIs, Needle Stick injuries
- Improved patients & Staff experience
- Increased efficiency & profitability: Vacancy, Turnover & Agency rates; WHPPD, LOS, RPBD & EBITDAR

Impact:
- Enhanced patient safety
- Improved overall quality
- Increased patient experienced
- Increased staff engagement
- Increased overall financial and long-term sustainability

Rationale: Current research on performance improvement frameworks suggest that adopting one can assist organisations striving for improved patient-centred care. Assumptions: there are a number of suitable and available performance improvement frameworks, as well as the commitment of the Nursing Directorate to choose and embrace an appropriate one.
SIQNS framework, adapted from Mumford et al., 2013

- **Scope and objectives**
  - Review scope and constraints of the study design
  - Establish study parameters

- **Identify costs & benefits**
  - Costs: Assess incremental costs of three interventions
  - Benefits: Map appropriate process and output indicators

- **Quantify cost & benefits**
  - Costs: Assess incremental costs of three interventions
  - Benefits: Map appropriate process and output indicators

- **Calculate IRR & BCR**
  - Adjust for timing differences using appropriate discount rates
  - Calculate internal rate of return (IRR) and benefit-cost ratio (BCR)

- **Sensitivity analysis**
  - Identify critical variables and model using a range of assumptions
  - Quantify impact of benefits that have been monetised
Cost Benefit Analysis (CBA)

- Return on Investment (ROI)
- Net Present value (NPV)
- Internal Rate of Return (IRR)
- Benefit-Cost Ratio (BCR)
Qualitative Study – Thematic Analysis

Source: Phases of thematic analysis, (Braun & Clarke, 2006)
SVPHS ROI of Balanced Score Card 2005-2015

- WHPPD, $1,500,000, 54%
- TOR, Vac & Agency, $1,017,079, 37%
- Pressure Ulcer, $187,245, 7%
- Patient Falls, $26,676, 1%
- LTIs, $21,000, 1%
- Needle sticks, $16,974, 0%

Savings = $2,768,975
Costs = $65,848
ROI = 41.1
SVPHS ROI of Magnet Recognition Program® 2011-2015

- WHPPD, $1,000,000, 49%
- TOR, Vac & Agency, $792,929, 39%
- Needle sticks, $16,974, 1%
- LTIs, $27,000, 1%
- Patient Falls, $13,338, 1%
- Pressure Uncers, $197,100, 9%

Savings = $2,047,339
Costs = $77,976
ROI = 25.3
SVPHS ROI of Revenue Cycle Management 2014-2015

- Revenue per bed day, $700,728, 61%
- Length of Stay, $448,956, 39%

Savings = $1,148,684
Costs = $104,750
ROI = 10.0
SVPHS ROI of BSC, MRP & RCM 2005-2015

- WHPPD, $2,000,000, 37%
- TOR, Vac & Agency, $1,807,755, 33%
- LOS, $448,956, 8%
- RPBD, $700,728, 13%
- Pressure Uncers, $384,345, 7%
- Needle sticks, $16,974, 0%
- LTIs, $48,000, 1%
- Patient Falls, $40,014, 1%

Savings = $5,446,772
Costs = $248,574
ROI = 20.9
PERCENTAGE HOSPITAL ACQUIRED PRESSURE ULCERS (HAPU) 2004-2015

ACHS BM: 0.08%
+ 1 SD: 0.07%
MEAN: 0.05%
- 1 SD: 0.03%

γ = -0.05x + 0.0008
R² = 0.6746

26% ▼
38% ▼

Pre Intervention

HAPU 0.07% 0.07% 0.07% 0.06% 0.04% 0.06% 0.03% 0.03% 0.05% 0.03% 0.02% 0.04%
Quality & Safety

SVPHS - PERCENTAGE OF PATIENTS FALLS - 2004-2015

ACHS BM: 0.28
+ 1 SD: 0.24%
MEAN: 0.22%
- 1 SD: 0.20%
y = -6E-05x + 0.0027
R² = 0.6568

Pre Intervention

2004 0.28%
2005 0.24%
2006 0.24%
2007 0.22%
2008 0.24%
2009 0.26%
2010 0.20%
2011 0.21%
2012 0.21%
2013 0.19%
2014 0.20%
2015 0.20%

Pt Falls

BSC 18% ▼
MRP 11% ▼
Workforce Indicators

SVPHS - REGISTERED NURSES TURN OVER RATE 2004 - 2015

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<td></td>
<td></td>
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<td>17.4%</td>
<td>17.6%</td>
<td>18.7%</td>
<td>18.8%</td>
<td>17.2%</td>
<td>5.4%</td>
<td>5.2%</td>
<td>6.7%</td>
<td>6.9%</td>
<td>6.2%</td>
<td>5.0%</td>
<td>3.9%</td>
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Mean: 10.1%

BSC:

MRP:

20% ▼

58% ▼

-1 SD: 3.8%

+1 SD: 16.5%

y = -0.0154x + 0.2077

R² = 0.7513
Efficiency Indicators

SVPHS - OVERNIGHT AVERAGE LENGTH OF STAY (ALOS) 2004 - 2015

ALOS in Hours

Pre Intervention

ALOS 5.4 5.4 5.2 5.1 5.1 5.1 5.1 5.1 5.0 5.1 4.9 4.8

Efficiency Changes:
- BSC: 4.3%
- MRP: 2.3%
- RCM: 4.2%

+1 SD: 5.3
Mean: 5.1

Regression: y = -0.0453x + 5.4073
R² = 0.8573
Financial Indicators

SVPHS - % Earnings Before Interest, Tax, Depreciation, Amortisation and Rent (EBITDAR) 2004-2015

% EBITDAR

-1 SD: 9.7%
Mean: 13.6%
+1 SD: 17.4%

EBITDAR: 10.0% 11.1% 10.1% 7.6% 8.9% 14.9% 12.5% 15.4% 14.4% 17.1% 18.1% 19.2%
Staff Engagement Indicators

SVPHS - OVERALL STAFF ENGAGEMENT SCORES 2004 - 2013

- Mean: 62.8%
- + 1 SD: 69.3%
- - 1 SD: 56.3%

Staff Engagement:
- 2004: 45%
- 2005: 50%
- 2007: 64%
- 2009: 66%
- 2011: 68%
- 2013: 66%

Equation: y = 0.046x + 0.4373
R² = 0.7766
SVPHS – BCR, IRR & NPV of BSC, MRP & RCM 2005-2015

Benefit-cost ratio (BCR)

Internal rate of return (IRR)

Net Present Value

31.9

585%

$28,215,311

Base year 2005
Discount rate 5%
## Cost Benefit Analysis (CBA)

<table>
<thead>
<tr>
<th>Cost Benefit Analysis (CBA)</th>
<th>BSC</th>
<th>MRP</th>
<th>BSC, MRP &amp; RCM</th>
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<tbody>
<tr>
<td>Discount Rate</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
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<tr>
<td>Net Present Value (NPV)</td>
<td>$20,702,665</td>
<td>$8,434,015</td>
<td>$28,215,311</td>
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<tr>
<td>Internal Rate of Return (IRR)</td>
<td>585%</td>
<td>498%</td>
<td>585%</td>
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<tr>
<td>Benefit-cost ratio (BCR)</td>
<td>125</td>
<td>27</td>
<td>31.9</td>
</tr>
<tr>
<td>Return on Investment (ROI)</td>
<td>20.9</td>
<td>25.3</td>
<td>10</td>
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Sensitivity Analysis

The NPV, IRR & BCR were recalculated for a range of values from ±1%, 5%, 10%, 20% and 30% of the total values for each of the benefits and costs that exceeded 10% of the totals values included in the model.
Qualitative Study

Findings
Key analytical thematics

- **Leadership** – envisioning, educating, empowering, motivating, inspiring
- **People and Culture** – investing in professional development; building an engaged, adaptable high performing culture
- **Operational Excellence** – Embracing BSC, MRP, RCM, PPM, shared governance
Driving and striving for excellence is leadership in action, demonstrated by SVPHS becoming the first Magnet private hospital in Australia and in the southern hemisphere. A great sense of pride was clearly expressed by respondents and seeing it as SVPHS’ leadership delivering on leading.

(Data from multiple participants)
Leadership... if you think about each of those frameworks, they're all really nursing driven so none of them have been placed upon us by anyone. They've all been generated from within the nursing directorate. I think that's a real strength of the different frameworks as well. It demonstrates the impact that we can have on patient care and ensuring that we remain sustainable moving forward

(Data from many participants)
Magnet has given us the structures and processes to provide high standards of compassionate patient care.

It offers our staff opportunities to have a say and feel empowered and listened to - keeps nurses in high regard.

(Data from multiple participants)
The Balanced Scorecard has assisted the Hospital in formulating its strategic plan and keeping us on track to provide care and meeting our goals and expectations.

The Balanced Scorecard keeps us honest about what we’re doing and how we are performing.

(Data from multiple participants)
The Revenue Cycle Management program is a “must have”

We need money to grow the business and being accountable for the cost. We need to ensure that care is effective and efficient.

It is [about] how everything is funded and we need to maximise revenue and putting it back into patient-centred care.

(Data from several participants)
There **must** be a balance between **Mission** & **Margin** in order to continue to remain a **safe quality** Hospital with a **high Patient Experience and Staff Engagement**

(Data from several participants)
Conclusions & Recommendations

Analysis of the individual and cumulative impact of the three improvement frameworks showed that they have assisted St Vincent’s Private Hospital Sydney on its journey towards accountable and sustainable patient-centred care.
Conclusions & Recommendations

The findings of this research advocate and support the incorporation of these three frameworks into a single integrated patient-centred care model.
Conceptual Framework for an Integrated Accountable and Sustainable Patient Centred Care Model

St Vincent’s Private Hospital Sydney’s Journey 2004-2015

Abstract

The provision of an accountable and sustainable healthcare system is a major challenge worldwide. The delivery of a Patient Centred Care model remains elusive for many organisations. This Conceptual Framework may assist healthcare organisations in meeting the challenge of achieving an accountable and sustainable Patient Centred Care Model.

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Questions