



# Information + Thinking = Actionable Intelligence

How the Department of  
Veterans' Affairs found gold in  
its mountain of data





# Key message

Information < > Intelligence

Information + Thinking =  
Actionable Intelligence





# Benefits

- The business user gets intelligence from the moment they open the report
- Specifically, some benefits are:
  - Eliminate ad hoc analyses
  - Analysing service provider patterns
  - Recovering incorrectly paid services
  - Preventable hospital admissions
    - this could be you...





Australian Government  
Department of Veterans' Affairs



Business Analytics **Forum**





- Eligibility & claims
- Rehabilitation
- Pensions & compensation
- Benefits & services
- Health & wellbeing
- Serving members
- Service providers
- Ex-service organisations
- Commemoration | War G

## Welcome to the Department of Veterans' Affairs

Our mission is to support those who serve or have served in defence of our nation and commemorate their service and sacrifice.

### Attention F-111 fuel tank maintenance workers 1973–2000

The Australian Government has committed \$55 million to ensure more F-111 fuel tank maintenance personnel, including pick and patch workers and others, now have easier access to compensation and health care. For more information visit the [F-111 website](#).

### Commemorating the Anzac Centenary

Public submissions to the National Commission on the Commemoration of the Anzac Centenary close on Friday 17 September – Australians across the country have shared their ideas and suggestions about how the Australian community can be engaged to mark the Centenary. There is still time to make a contribution.

### News and Events

[media centre](#)

- \* Australian peacekeepers to be honoured (PDF 45Kb) (RTF 1.8Mb)
- \* Greater awareness of suicide can save lives (PDF 30Kb) (RTF 1.74Mb)
- \* Remembering the Nashos (PDF 33Kb) (RTF 1.8Mb)
- \* National Servicemen – facts and figures (PDF 44Kb) (RTF 2Mb)
- \* Pension increase for veterans and war widows (PDF 50Kb) (RTF 1.8Mb)
- \* Australians commemorate Merchant Navy Day (PDF 45Kb) (RTF 1.8Mb)
- \* Battle for Australia remembered (PDF 47Kb) (RTF 1.8Mb)
- \* Veterans warned of potential scams (PDF 29Kb)



*Vet Affairs* is published three times a year by the Department of Veterans Affairs as a free newspaper for Australia's veteran and defence force community.

### Counselling services

[WCS – Veterans and Veterans Family Counselling Service](#), a service founded by Vietnam veterans **1800 011 011**

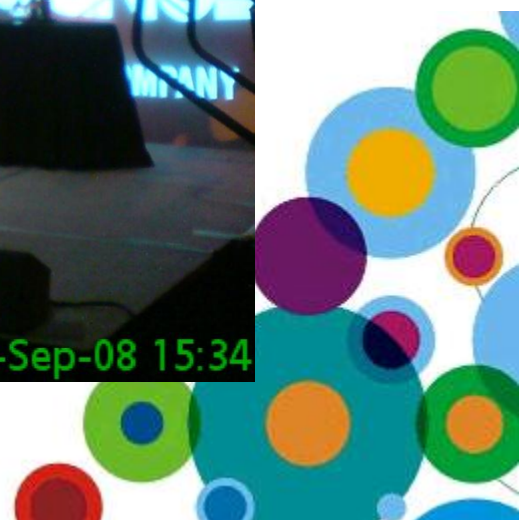
### Quick links

- \* [Factsheets](#)
- \* [Forms](#)
- \* [Special items](#)
- \* [Minister's website](#)



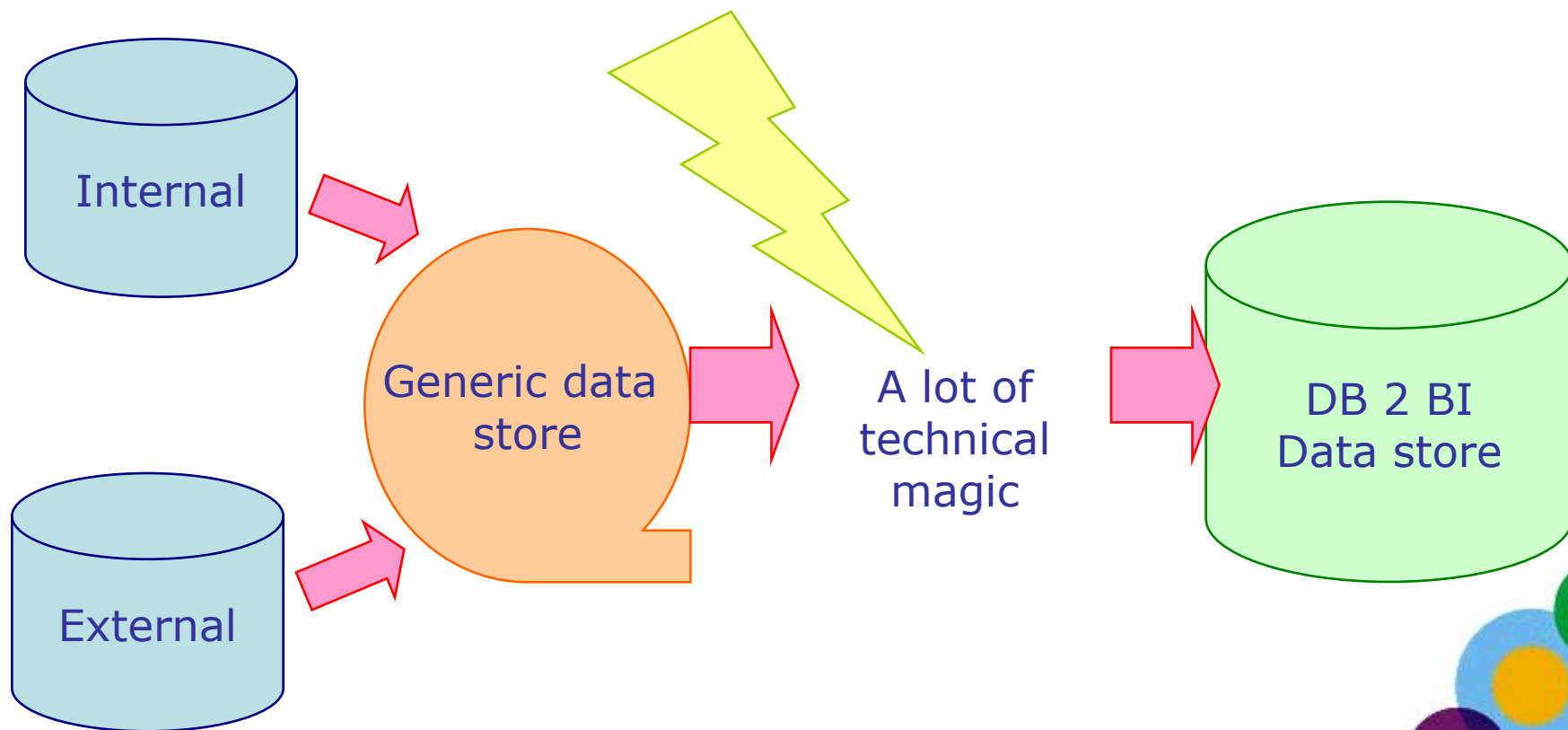


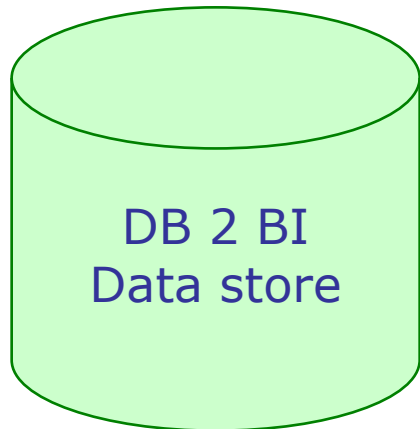
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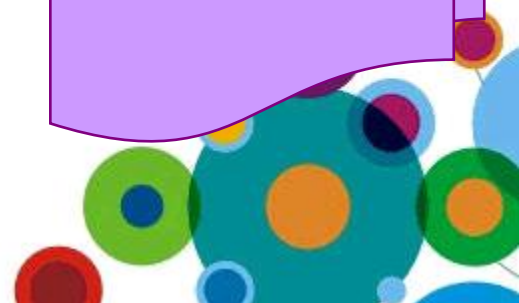


# DVA data flows





(not) DMIS

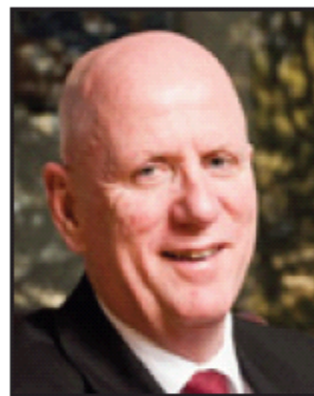






What is the RoI on our investment?

Do we have analytical capability within the Department to make use of this data?



**Secretary**

Ian Campbell PSM





# The Business Analyst Dilemma #1

BA: What are your top reporting requirements?

Bus: What data do you have?

BA: x, y and z

Bus: We'll have everything

BA: What analysis do you want of the data?

Bus: What can you do?

BA: a, b, and c

Bus: Well you seem to know what data there is and what analysis can be done, you work it out

In the meantime, give us all the data so we can put it into Excel or Access and analyse it

BA: (brightening up): What kind of analysis?

Bus: We don't know yet

BA: Sigh





## The Business Analyst Dilemma #2

BA: What are your top reporting requirements?

Bus: Well, we want all products by provider and customer (or in DVA health speak: all services by service provider and client)

BA: That's 200 million lines of data, what will you do with it?

Bus: Um, we will look at it state by state

BA: What are you looking for?

Bus: Highest cost clients, highest cost service providers

BA: Not all clients and service providers are the same. How would you like to group them?

Bus: Hmm, by a, b and c

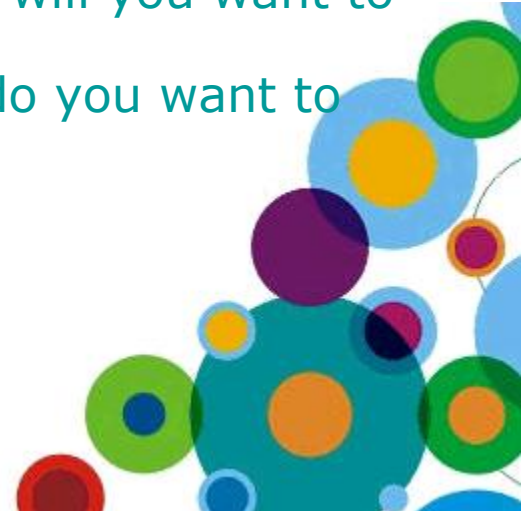
BA: When you see a high cost "Group a" client, what will you want to know about that client?

When you see a high cost "Group b" provider, what do you want to know about that provider?

Bus: Everything about their services

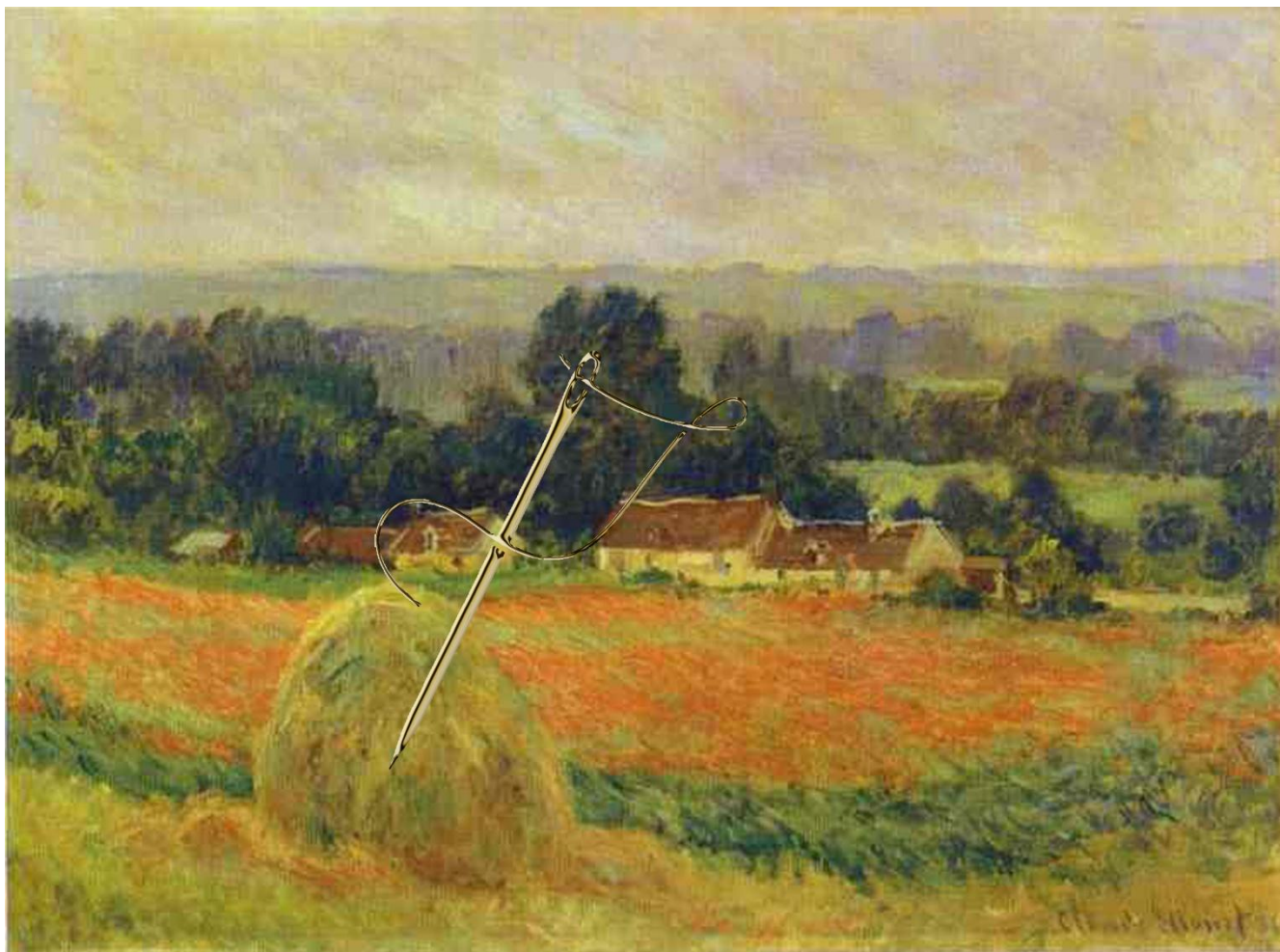
BA: ...and what are you looking for in their services?

Bus: Don't know till I see it.





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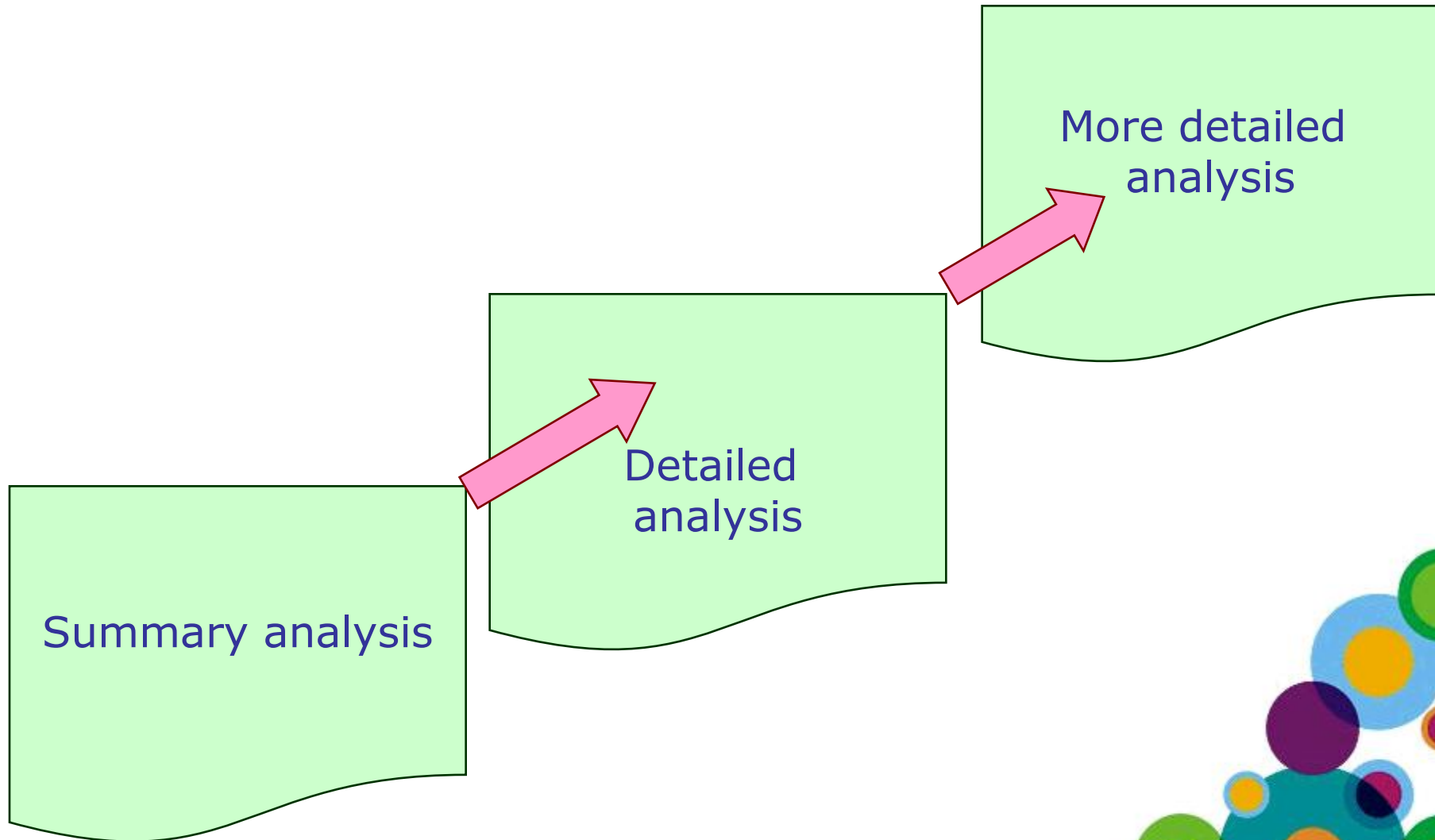
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Information +  
thinking/analysis  
= Intelligence







# Toyota's Five Whys

## ANALYSIS

You are looking at 10000 rows of service provider data – **WHY?**

To work out average cost per client – **WHY?**

To compare it with other service providers – **WHY?**

To see if it is exceptionally higher or lower – **WHY?**

To see if there is anything unusual about the client group which would explain differences – **WHY?**

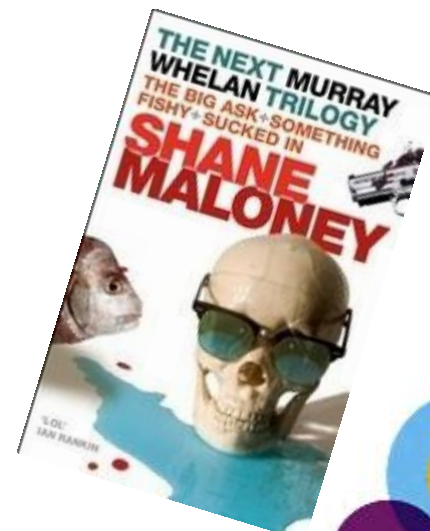
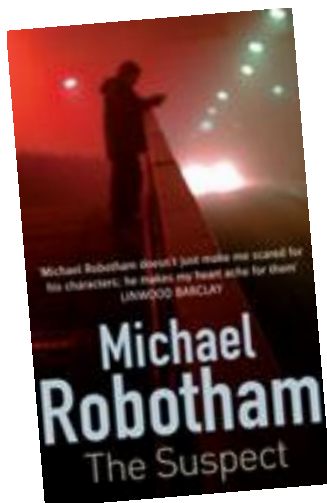
## ACTION

So I can talk now to the service provider about the service delivery pattern based on real intelligence.

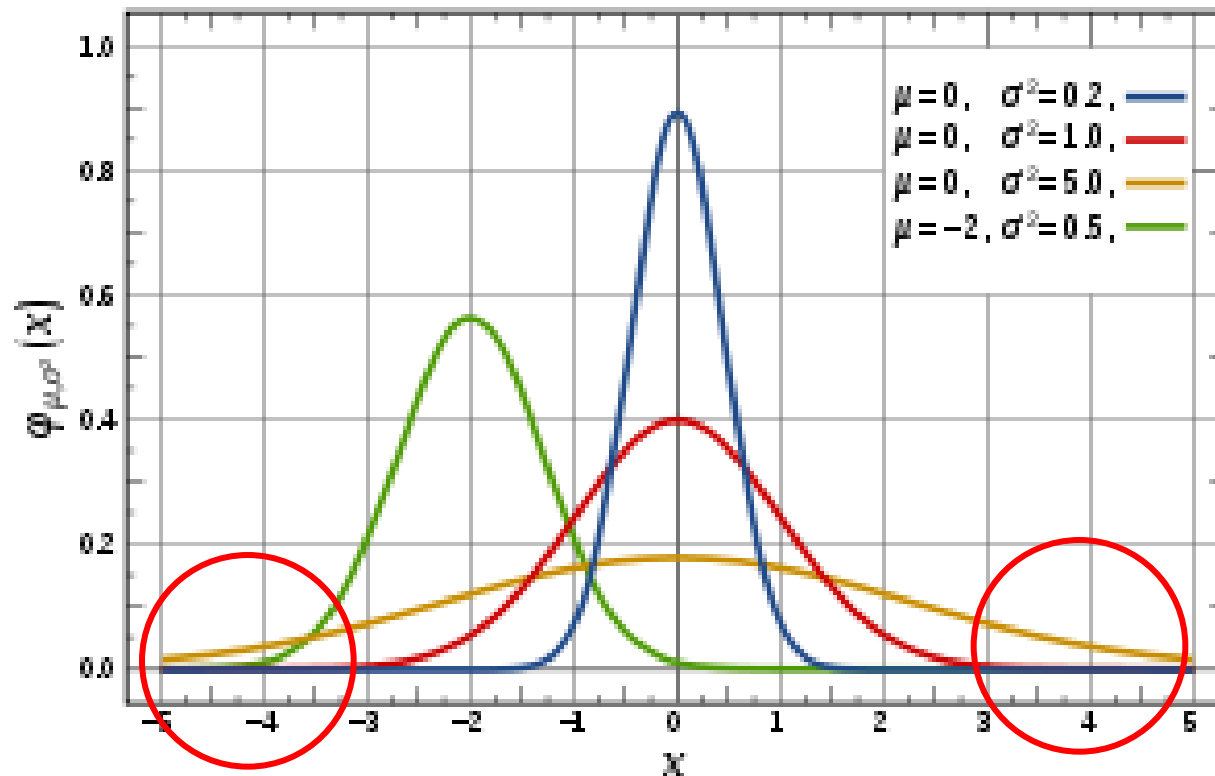


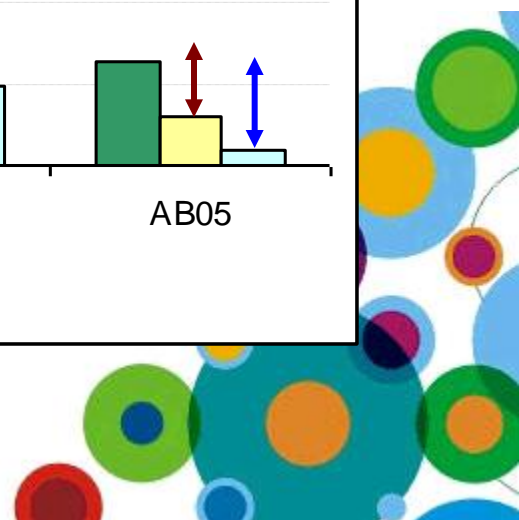
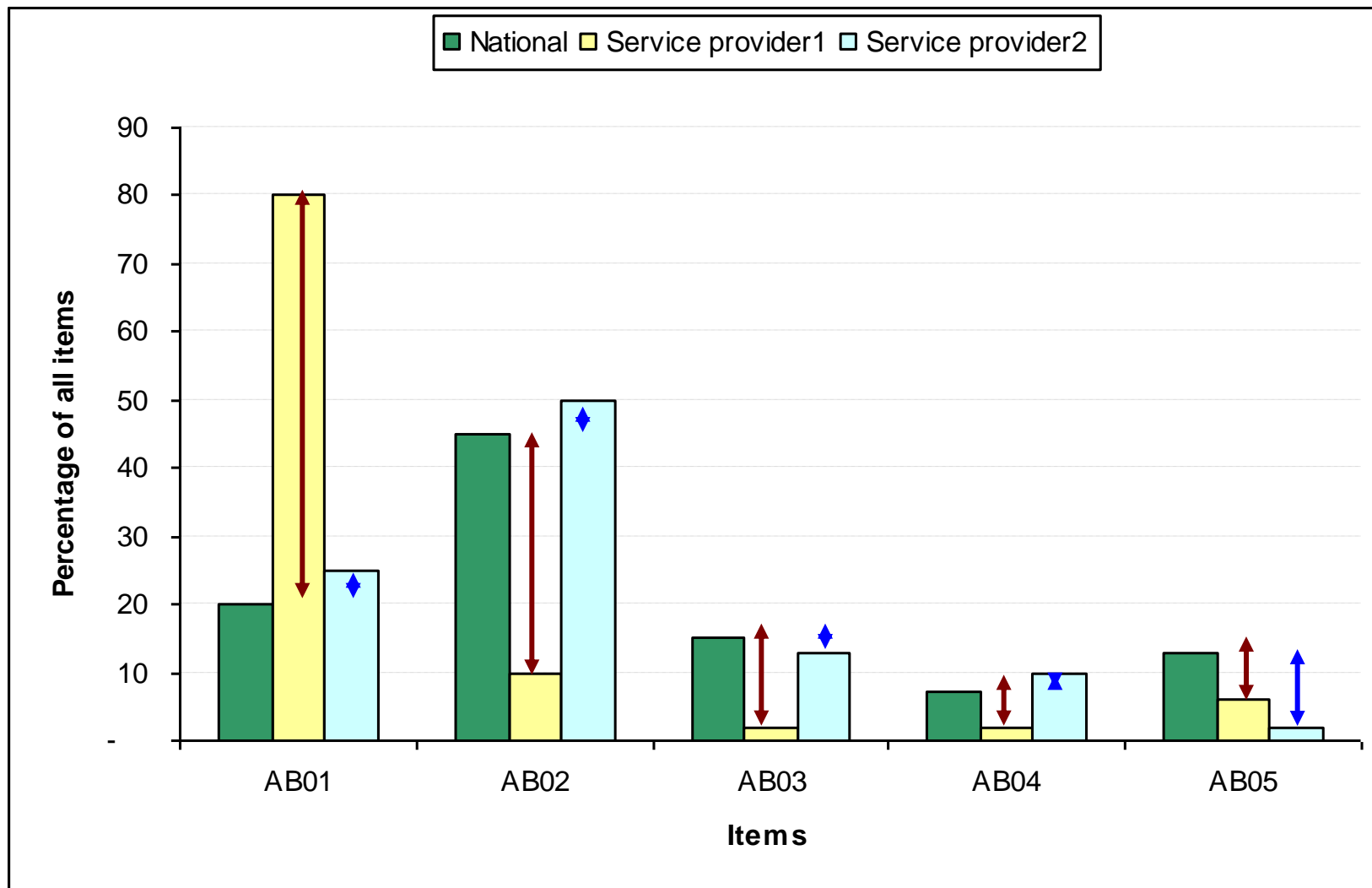


# Whodunit → Actionable intelligence











Service Provider outliers compared to national service p...

## Service Provider outliers compared to national service profile

### Please complete prompts below

Start date (DoS): \*

End date (DoS): \*

Service category: \*

SC

Service category level 1: \*

Service Item Category Level 1

Minimum number of clients for service provider: \*

- Chiropractic
- Dental
- Diabetes Educators
- Dietetics
- Exercise Physiologists
- Occupational Therapy
- Optical
- Orthoptists
- Osteopathic
- Physiotherapy**
- Podiatry
- Psychology
- Social Work
- Speech Pathology

**Cancel**

**Run Report**



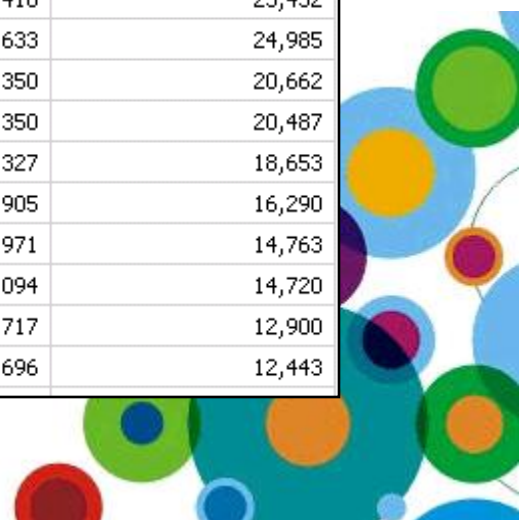


## Service Provider outliers compared to national service profile

This report compares an individual service provider's service profile to the national profile, reporting a % difference and weighted % difference aggregates the absolute values of individual differences between the % of item quantity for each item in the SP profile. The weighted difference multiplies the % difference at item level by the number of SP items. The drill through provides a more detailed comparison with national profiles and more information about the service provider.

### Reporting outliers for Physiotherapy for period 01/01/2009 to 31/12/2009

Service Provider ID	Service Provider Name	Total(Clients per service provider)	Total(% difference from nat average)	Total(weighted difference)
<a href="#">11111111</a>	PHYSIOLOGY	1173	6,863	150,412
<a href="#">11111111</a>	PHYSIOLOGY	869	4,103	90,011
<a href="#">11111111</a>	PHYSIOLOGY	220	2,607	39,950
<a href="#">11111111</a>	PHYSIOLOGY	124	2,972	39,203
<a href="#">11111111</a>	PHYSIOLOGY	137	1,231	27,077
<a href="#">11111111</a>	PHYSIOLOGY	190	1,416	25,432
<a href="#">11111111</a>	PHYSIOLOGY	217	1,633	24,985
<a href="#">11111111</a>	PHYSIOLOGY	124	1,350	20,662
<a href="#">11111111</a>	PHYSIOLOGY	112	1,350	20,487
<a href="#">11111111</a>	PHYSIOLOGY	108	3,327	18,653
<a href="#">11111111</a>	PHYSIOLOGY	164	905	16,290
<a href="#">11111111</a>	PHYSIOLOGY	117	971	14,763
<a href="#">11111111</a>	PHYSIOLOGY	113	1,094	14,720
<a href="#">11111111</a>	PHYSIOLOGY	109	717	12,900
<a href="#">11111111</a>	PHYSIOLOGY	111	696	12,443





Service Provider ID	Service Provider Name	Total(Clients per service provider)	Total(% difference from nat average)	Total(weighted difference)
123456	Service Provider A	1173	6,863	150,412
789012	Service Provider B	869	4,103	90,011
345678	Service Provider C	220	2,607	39,950
901234	Service Provider D	124	2,972	39,203

Aggregate of differences between (SP % item to all items) and (National % item to all)

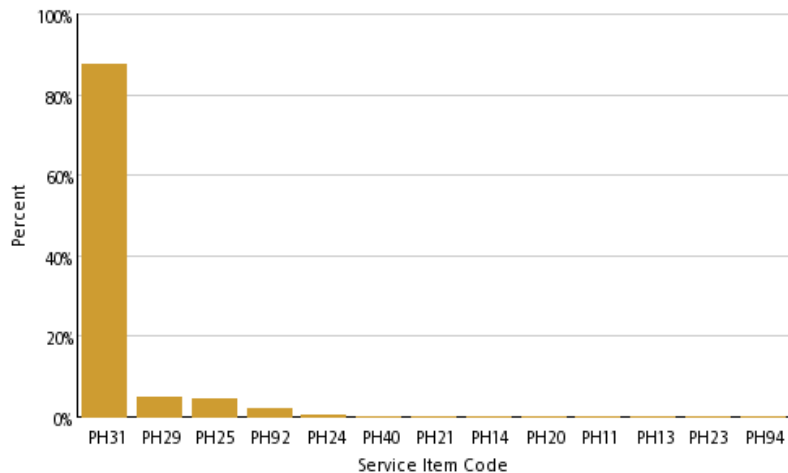
Aggregate of Difference X number of items provided



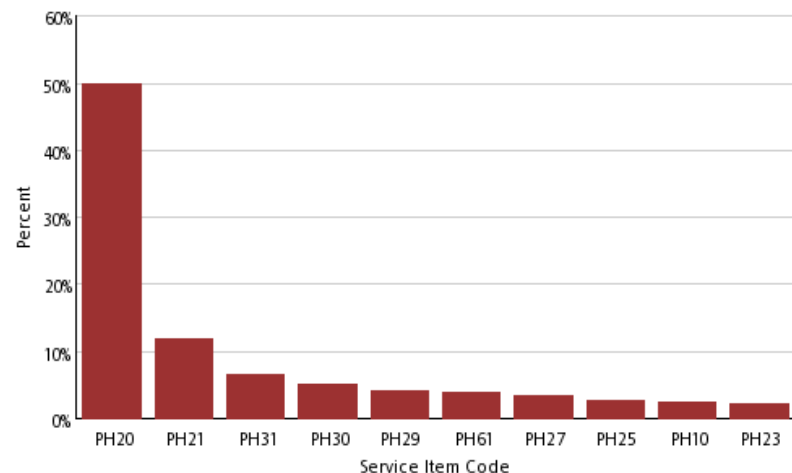


Service comparison for for period 01/01/2009 to 31/12/2009

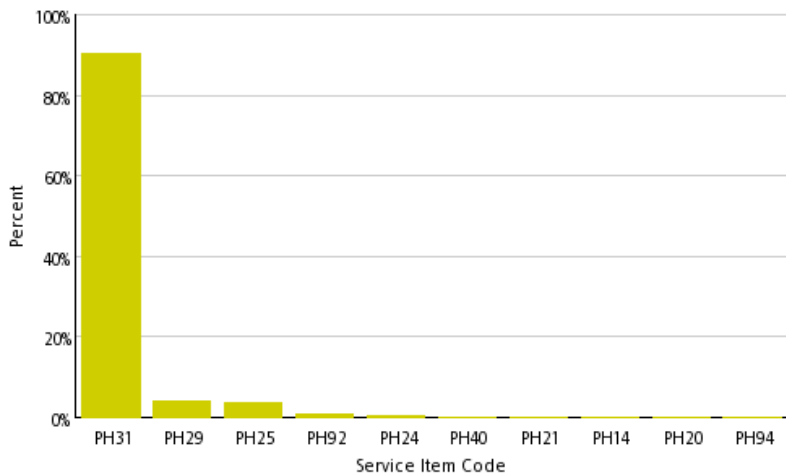
% of number of items for provider for top 10 items



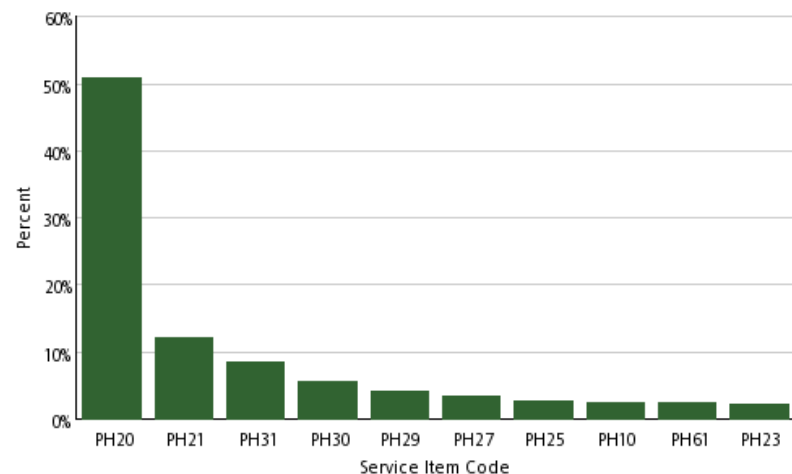
National or selected state % of number of items for top 10 items

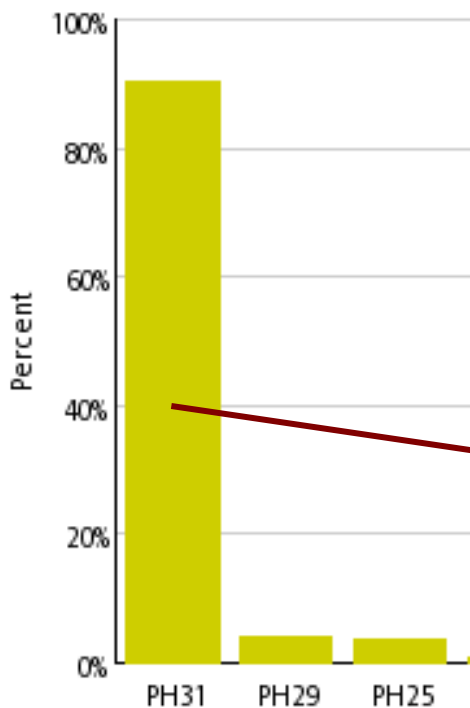


% of paid amount for provider for top 10 items

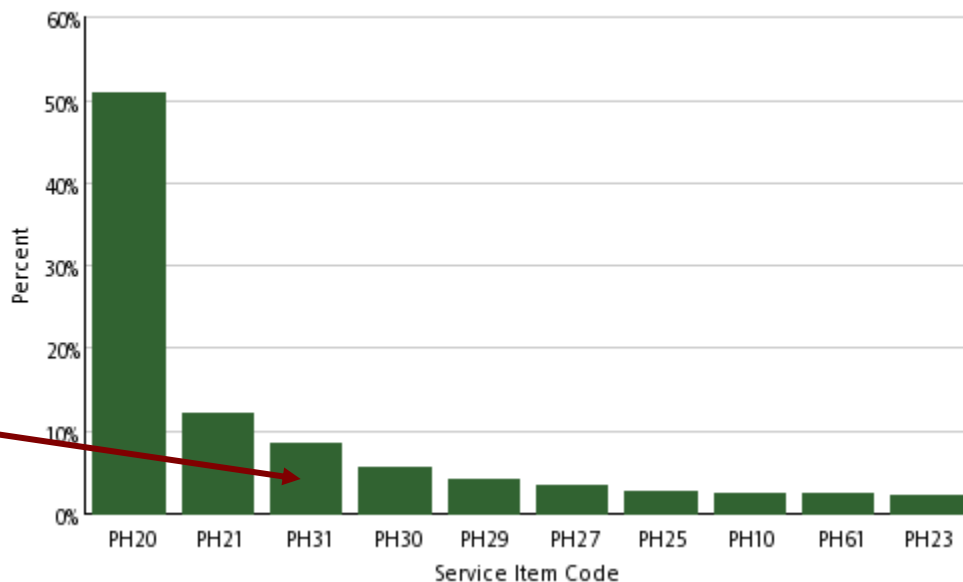


National or selected state % of paid amount by provider for top 10 items





National or selected state % of paid amount by provider for top 10 items



The provider

\$182,000

The national picture

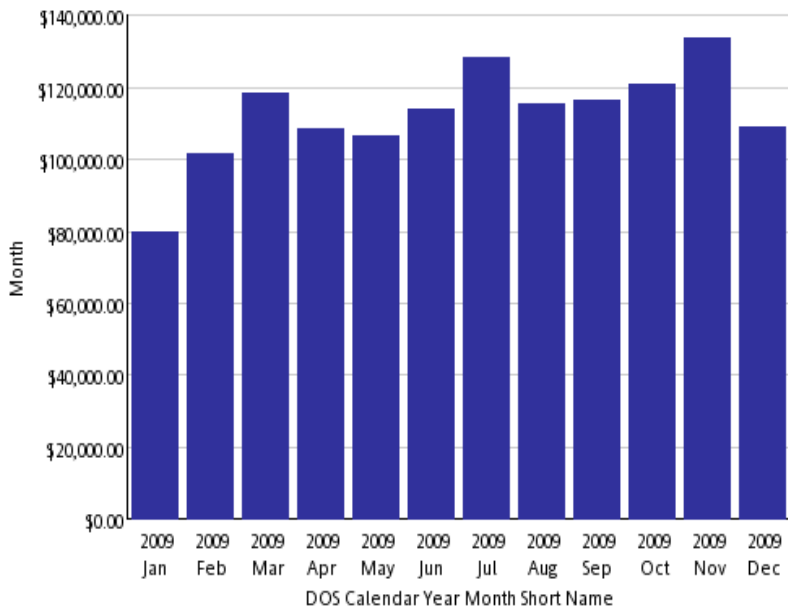




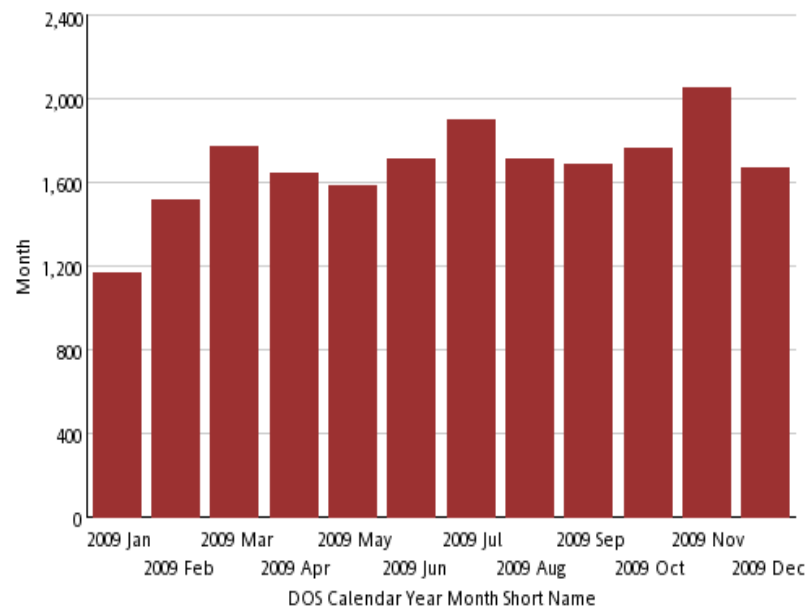
Service practice service delivery for

Number of Item Types	Service Quantity	Service Paid Amount	Number of Clients
14	20,205	\$1,352,799.62	1,488
Av Item types per client	Av items per client	Av cost per client	Items/item type
1.5	13.6	\$909.14	1,443.2
Maximum item types per client	Maximum items per client	Maximum cost per client	Maximum items per item type
6	116	\$7,376.75	16,584

Paid amount per month based on date of service



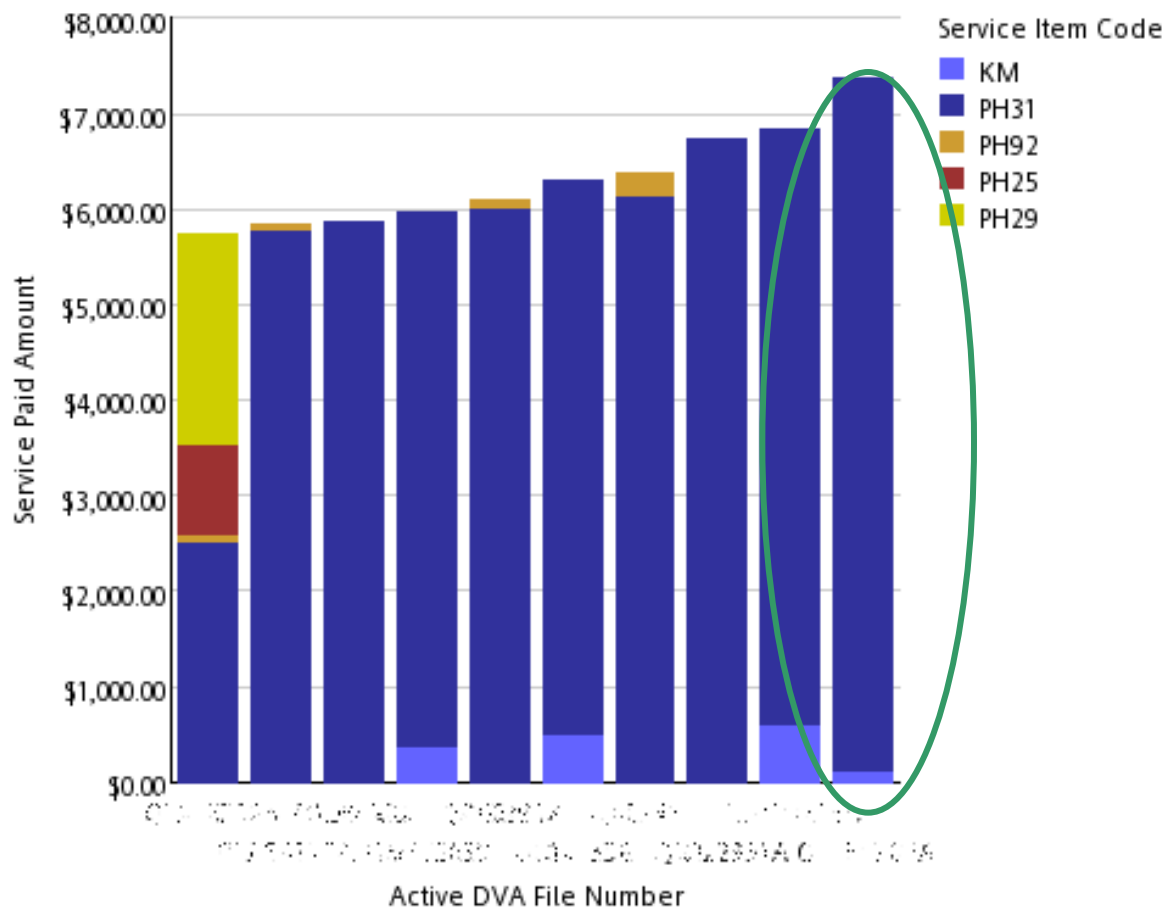
Number of services per month based on date of service







Top ten clients by paid amount (click column to drill through to client report)





[PH31](#)

Physiotherapy - Extended Consultation  
- Home

02/07/2008

09/07/2008

16/07/2008

23/07/2008

06/08/2008

20/08/2008

08/09/2008

22/09/2008

20/10/2008

27/10/2008

03/11/2008

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01/12/2008

18/02/2009

20/02/2009

23/02/2009

25/02/2009

27/02/2009

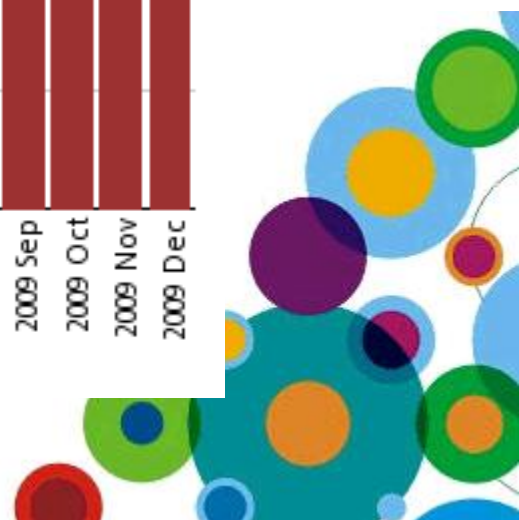
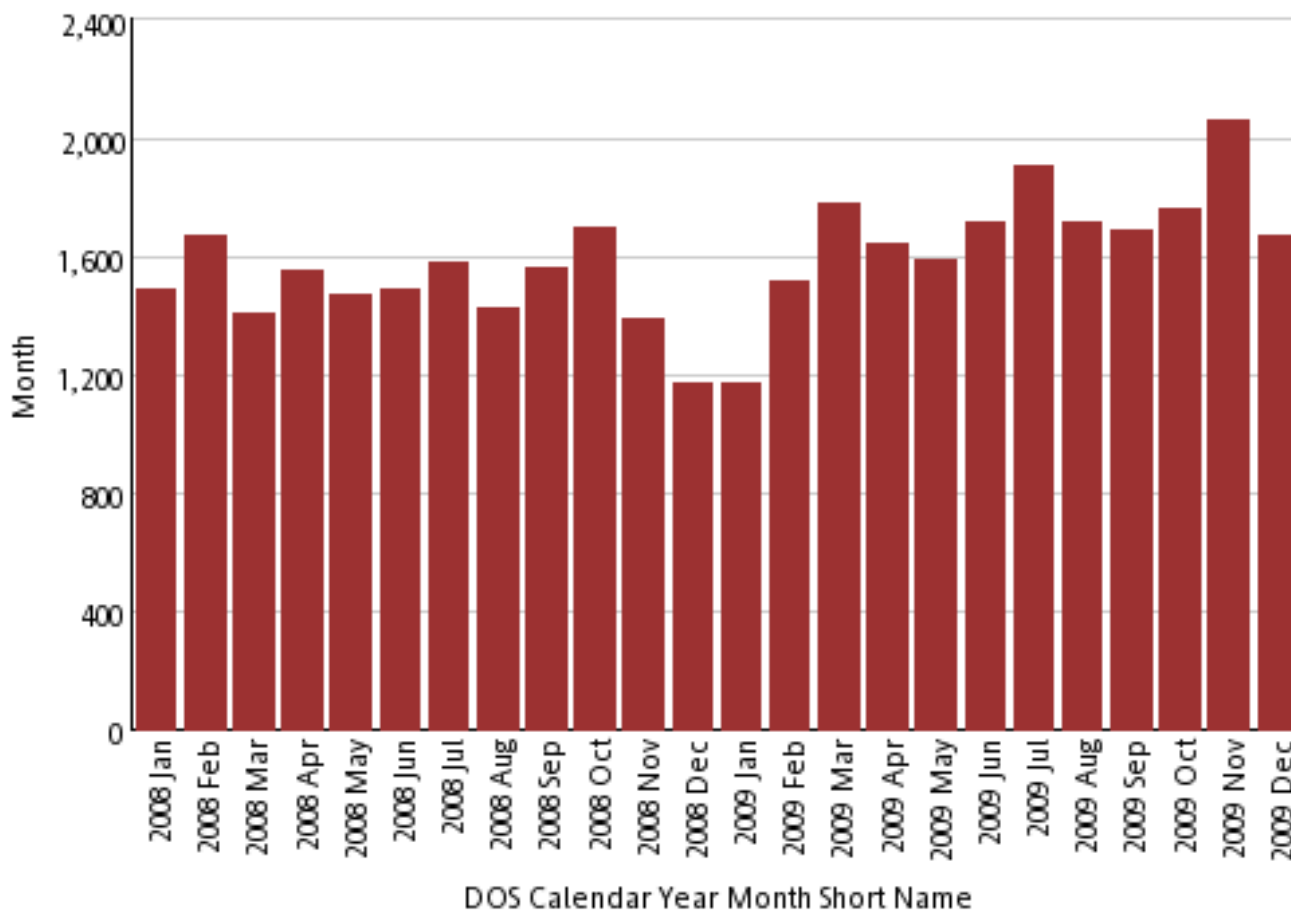
02/03/2009





# Back to the service provider for two years of service

Number of services per month based on date of service









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Improved  
community care

Vs

Unnecessary  
admissions



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Chronic obstructive pulmonary disease

Congestive heart failure

Coronary arterial disease

Pneumonia

Diabetes





30% of admission costs for private hospitals in 2009

Costs may be up around \$500m per year for both public and private hospitals

Veterans represent less than 1.2% of the general community

As the general community ages...

	Unknown	No	
Admission Day	\$1,641,640.67	\$1,056,956.57	\$1,641,640.67
Admission Wa	\$57,789,402.36	\$32,719,034.32	\$57,789,402.36
Admission Termi	\$152,386.02	\$27,084.96	\$152,386.02
Admission	\$15,963,144.40	\$5,729,658.50	\$15,963,144.40
Admission	\$9,136,388.73	\$2,755,999.89	\$9,136,388.73
Admission	\$6,175,659.77	\$5,868,827.61	\$6,175,659.77
Admission	\$21,356,286.74	\$8,691,426.80	\$21,356,286.74
Admission	\$2,057,992.27	\$12,514,059.71	\$2,057,992.27







# Take away messages

- Information + thinking = actionable intelligence
- Ask the five whys, more if necessary
- Don't stop asking WHY till the user can leave the BI application, with actionable intelligence, and act on results





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# Questions and answers

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