



July 2015

Issue #9

Project News & Progress Update

Events and Meetings

Clinical Quality Committee (CQC)

8th September 2015 (Q2 2015)

1st December 2015 (Q3 2015)

15th March 2016 (Q4 2015)

Steering Committee (SC)

21st July 2015

20th October 2015

Data Submission Deadlines

31st August 2015 (Q2 data)

30th November 2015 (Q3 data)

1st March 2016 (Q4 data)

VCOR 2014 Annual Report

Released August 2015

More than
17,500
PCI cases!
100+
Regional STEMI
cases!

Welcome to issue nine of the Victorian Cardiac Outcomes Registry (VCOR) newsletter. It is with pleasure that we report our progress over the last two quarters of registry activities. With 15,388 PCI patients now registered in the system (representing 17,635 procedures) and 23 PCI sites collecting data, the project team is busy as our project management, data management and reporting responsibilities continue to expand. We welcomed one new staff member in May 2015, Alishia Ballintine, who replaced Jacinta Clements as a VCOR Research Assistant.

2014 ANNUAL REPORT

Our most recent focus has been the second VCOR Annual Report. The report will be published in August, and will be available online at www.vcor.org.au. It reviews 21 PCI sites and 6 regional hospitals participating in the Early Management of Acute STEMI module. VCOR would like to acknowledge and congratulate all Data Managers for ensuring that 2014 data was completed within submission timelines. Data completeness in the report was 99.5% for more than 8000 PCI cases—this is a fantastic effort! Please refer to page two for a summary of some data from the report.

VCOR RESEARCH

Four abstracts arising from our first aggregate data research applications were accepted for presentation at the Cardiac Society of Australia and New Zealand conference in Melbourne this August (details on page 3). We are looking forward to presenting data on both PCI and STEMI modules to the local and international cardiac community. All research activity must be approved by the VCOR Data Access, Research and Publications Committee (DRP). Please contact vcor@monash.edu if you wish to apply for access to VCOR data for research.

VCOR AUDIT

The VCOR team have spent much of 2015 focused on auditing PCI data quality at 18 of the 23 participating sites. Data integrity is a critical aspect of the successful function of a Clinical Quality Registry and audit results currently show more than 97% accuracy (comparable with international registries) and discrepancies in case numbers are very low (<3%). Audits are conducted after the first year of data collection and every 12-26 months thereafter. For more information about the audit process to date, see page 2.

REGISTRY EXPANSION

A broader cardiac outcomes focus is now becoming a reality as we undertake more complex registry activities. Early in 2015, funding was received from the Victorian Cardiac Clinical Network to continue the Heart Failure (HF) pilot conducted in 2014. Data will be collected as a one month rolling SNAPSHOT across 14 centres in metropolitan and regional Victoria. It will 'snapshot' heart failure patients across centres that either have dedicated HF programs and those whose patient cohort may be scattered across the health service. We will continue to report on the progress of this snapshot in future newsletters.

The *Early Management of Acute STEMI in Regional Victoria* module has achieved a milestone of 100+ patients across six sites in the Gippsland and Hume regions. The Registry is now focusing on expanding to collect STEMI data at all relevant regional Victorian hospitals. As case numbers and site participation increases, VCOR will hopefully emerge as an indispensable quality assurance tool, ensuring delivery of high quality, effective and safe early STEMI treatment across Victoria.

Please read on through the following pages for more detailed project new and registry updates!

Q1 2015 Clinical Quality Report

23 sites contributed data in Q1 2015. A total of 1966 cases were reviewed (baseline and follow-up data were 96.9% complete for the quarter).

Two sites did not submit sufficient data numbers to be included in the Clinical Quality Review and two sites only contributed one month.

Data was reviewed by the VCOR Clinical Quality Committee on 21 July.

There were no clinical quality outliers identified for Q1 2015. An outlier is when a site fall outside acceptable confidence limits in the clinical quality review analyses. Acceptable confidence limits are 3 standard deviations above the cohort average.



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VCOR PCI Statistics & Reporting *

| Case Numbers | N |
|------------------------------------|--------|
| Number of registered VCOR patients | 15,388 |
| Number of PCI cases entered | 17,635 |

| Data Completeness | % |
|-----------------------------|------|
| Baseline data 'complete' | 98.8 |
| Follow-up data 'complete' † | 95.7 |
| Whole PCI case 'complete' | 95.5 |

* Statistics correct as at 30 July 2015.

† Due only when patient alive at discharge

VCOR data is 'complete' when all baseline & follow-up data has been verified by a Data Manager and submitted to the registry as 'final'...

VCOR STEMI Statistics & Reporting*

| Case Numbers | N |
|-------------------------------|------------|
| Number of STEMI cases entered | 109 |
| Gender—female (%) | 29% |
| Age-years (Mean ±SD) | 63yr (±14) |

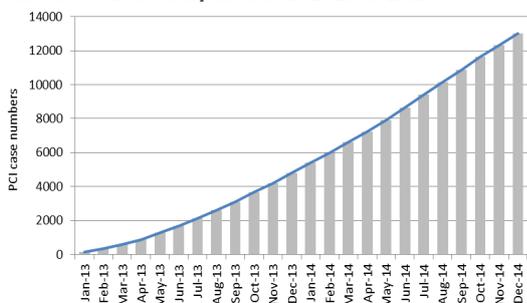
| Data Completeness | % |
|---------------------------|------|
| Baseline data 'complete' | 95.4 |
| Follow up data 'complete' | n/a |

* Statistics correct as at 14th July 2015.

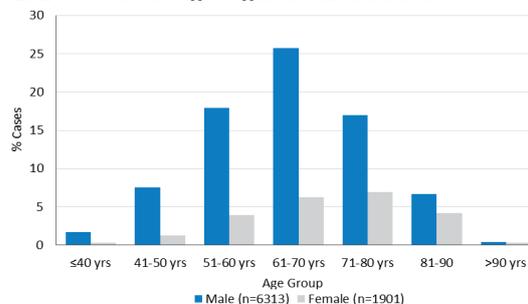
2014 Annual Report **

The 2014 Annual Report will be sent to all relevant VCOR stakeholders and will be made available to the public via the VCOR website at www.vcor.org.au. 8214 PCI cases were included in this report. The report includes, for the first time, data from the Early Management of Acute STEMI in Regional Victoria module (n=64). It will also include some simple comparisons between public and private hospitals for general procedural data and patient demographics. A mortality risk-adjustment model has been implemented for the first time for 30-day mortality.

PCI Case numbers by month in 2013 & 2014



2014 PCI cohort age & gender distribution

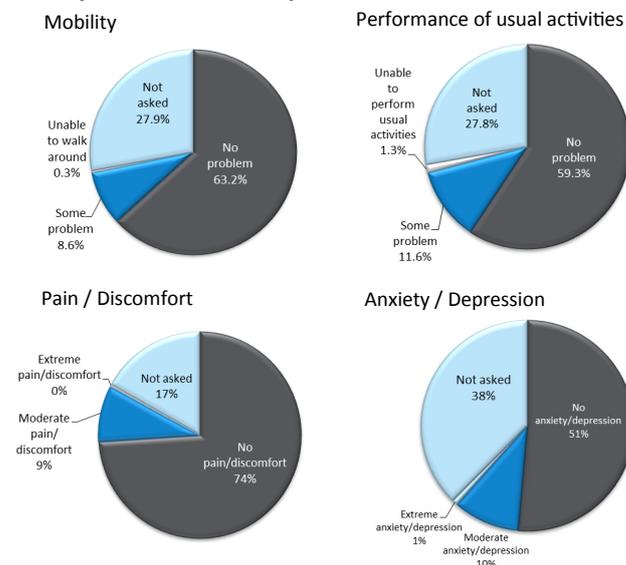


2013 & 2014 Patient characteristics

| Patient Characteristics | 2013 Cohort (N=4760) | 2014 Cohort (N=8214) |
|-------------------------------------|----------------------|----------------------|
| Age – years (Mean ±SD) | 66.2 (±12.0) | 65.7 (±11.9) |
| | % | % |
| Gender – female | 22.9 | 23.1 |
| Diabetes medication | 22.4 | 21.6 |
| Peripheral vascular disease history | 3.5 | 3.8 |
| Cerebrovascular disease History | 3.8 | 3.7 |
| Previous PCI | 34.4 | 31.8 |
| Previous CABG | 8.9 | 8.3 |

** Statistics based on data collected between 1 Jan—31 Dec 2014. Data cut taken on 4th May 2015.

Quality of life at follow-up





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Engaged Sites & Local PIs

Percutaneous Coronary Intervention (PCI)

The Alfred Hospital
Dr Stephen Duffy

The Austin Hospital
Dr David Clark

Ballarat Base Hospital
Dr Ernesto Oqueli

Bendigo Hospital
Dr Voltaire Nadurata

Box Hill Hospital
A/Prof Gishel New

Cabrini Hospital
A/Prof Jeffrey Lefkovits

Epworth Hospital (Richmond & Eastern)
A/Prof Ronald Dick

Frankston Hospital
Dr Geoffrey Toogood

Geelong Hospital
Dr Chin Hiew

Geelong Private Hospital
A/Prof John Amerena

Jessie McPherson Private
Prof Ian Meredith

Knox Private Hospital
Dr Michael Rowe

Melbourne Private Hospital
A/Prof Roderick Warren

Monash Medical Centre
Prof Ian Meredith

The Northern Hospital
A/Prof William vanGaal

The Royal Melbourne Hospital
A/Prof Leeanne Grigg

St John of God (Bendigo)
Dr Tony Jackson

St Vincent's Hospital (Melb)
A/Prof Andrew MacIsaac

St Vincent's Private Hospital
A/Prof Jack Gutman

Western Hospital
Dr Nicholas Cox

Western Private Hospital
Dr Deepak Haikerwal

Management of Acute STEMI (Regional Vic)

West Gippsland Healthcare
Dr Brett Forge

Goulburn Valley Health
Dr Tunde Ibrahim

Northeast Health (Wangaratta)
Dr Robert Krones

Larrobe Regional Hospital
Dr Alistair Wright

Bairnsdale Regional Health
Ms Trish Young

Central Gippsland Health Service
Dr Howard Connor

VCOR Data Audits

A key operational activity of a clinical quality registry is the performance of regular audits to ensure accuracy and completeness of the data entered. There are two types of audit: case reconciliation (assessing that all eligible cases are entered into the registry) and data quality assessment (comparing registry data against source data in the patient medical record).

- ◆ Sites are audited after first 12 months of data collection and generally re-audited annually for case reconciliation and every 12-36 months for data quality assessment.
- ◆ Detailed, individualised audit reports are sent back to site Principal Investigators and Data Managers.

VCOR commenced auditing PCI cases in March 2014 and the process is ongoing. To date, 18 of the 23 sites currently collecting data have been audited, with the remainder scheduled following their first full year of operation. Pleasingly, the case reconciliation results to date indicated high compliance rates across all sites and

identified no systematic omission of cases (**97% compliance**).

With respect to data quality, 5% of case records were randomly selected for comparison with the hospital medical record. Cases are reviewed by a trained auditor with a cardiac clinical background, who is not aligned with the hospital being audited. The overall agreement rate between VCOR data and the hospital medical record was **97%**, which compares favourably with national and international registry publications.

Some common mismatches were found across sites: Ejection fraction, pre-procedural serum creatinine level, in-hospital bleeding and PCI indication. In order to address this, sites are now routinely monitored for data entry compliance with these fields. Whenever hospitals fall below a threshold, they are approached to review their compliance and retrospectively enter or update available data (where possible).

VCOR Data Managers' Feedback Session #5: 23 June 2015

On 23rd June, VCOR Data Managers met at The Alfred Centre (Monash University's Department for Epidemiology & Preventive Medicine) for a feedback and information session. These meetings are held at least twice per year and provide networking opportunities for Data Managers who seldom have the opportunity to meet with other hospitals' staff undertaking similar data collection projects.

The meetings always generate productive discussions about VCOR operations, data elements, issues and concerns. This session was well attended with representatives from 14 sites present either in person or via teleconference. Many VCOR matters were discussed, including: Excellent data completeness (>95%); High quality data (97% audit compliance for both quality and case

reconciliation); and many common data queries were raised and issues resolved or escalated for further consideration. Please refer to the *Data Manager Hints and Tips* section on page 4 for more information.

It is worth noting that sites who have dedicated VCOR Data Managers or those who are able to attend feedback sessions tend to be the same sites who generally return the best data completeness, data quality and audit results. VCOR acknowledges that not all Data Managers are able to attend these sessions as they are juggling their clinical workload with data entry, however we do encourage all Data Managers to review the meeting minutes and pay attention to Newsletter content and circulated memos to stay up to date with VCOR news and data-related matters.

VCOR Research and Publications

Four abstracts were submitted to the 2015 Cardiac Society of Australia and New Zealand (CSANZ) conference. All four were accepted for presentation:

Mini-orals:

- ◆ **Outcomes Following PCI: The Victorian Cardiac Outcomes Registry (VCOR)**
VCOR: A/Prof Jeffrey Lefkovits, et al.
- ◆ **Quality measures of early STEMI management in regional hospitals: The VCOR Early STEMI Management Registry**
VCOR: A/Prof Jeffrey Lefkovits, et al.

Posters:

- ◆ **Outcomes of Trans-radial Percutaneous Coronary Intervention: A Report From the VCOR**
The Northern Hospital: A/Prof Bill van Gaal & Dr Muhammad Asrar ul Haq, et al.
- ◆ **Contemporary PCI Practice in Australia: Assessment of Acute Myocardial Infarction Performance Measures**
CADOSA & VCOR collaboration: Prof John Beltrame, et al.





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Data Management Hints, Tips & Frequently Asked Questions!

NEW DATA DEFINITIONS

- ◆ **3.3.1a: Left-Ventricular Ejection Fraction (EF):** For all patients except STEMI presentations, VCOR now accepts **any** LVEF test that was performed up to 6 months prior to the procedure, during the procedure and up to four weeks post-discharge. This test can be an estimated angiogram at the time of PCI, or a post-procedural echocardiogram. For STEMI patients, the EF test must have been during the index admission and up to four weeks post-discharge. The word 'pre-procedural' has been removed. In the event of multiple test results, please use the result closest to the date of the PCI. It is also recommended to re-check for EF data at the time of follow-up when test results may have become available since baseline data entry.
- ◆ **2.3.4: Pre-procedural Intubation:** Code 'yes' to this data element if the patient was intubated at any time prior to the procedure. This includes any intubation immediately before or during the index hospitalisation, prior to the commencement of the PCI procedure (but NOT DURING the PCI procedure – if the patient was intubated during the PCI, please code accordingly in item 4.2.3).

COMMON PCI DATA QUERIES

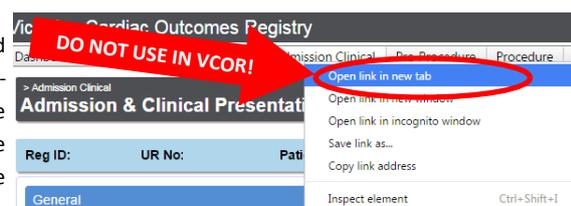
- ◆ **5.3.5-6 & 7.1.8: Revascularisation (In-hospital or 30-day PCI or CABG):** When coding for an in-hospital or 30-day PCI or CABG revascularisation/readmission, it is important to carefully consider whether the subsequent procedure was 'planned' or 'unplanned' as this affects reporting for two important key performance indicators. Any successfully treated lesion resulting in a revascularisation within the target vessel should always be coded as 'unplanned'. Lesions that were not successfully treated during the index PCI, that end up being re-treated with another PCI or CABG surgery in the same coronary artery, are situation dependant. Data Managers are encouraged to assess each event like this on a case by case basis and to feel free to contact VCOR to discuss specific events as required. Any revascularisation within the same coronary artery as the index lesion are considered "target vessel revascularisations (TVRs)" but are only "target lesion revascularisations (TLRs)" if they are within the same stented region, or within 5mm of the original stented region.
- ◆ **Multiple PCIs in the one admission:** Data managers are reminded to code in-hospital outcomes very carefully. Outcomes and complications that happen after the first PCI are coded up to the second lab visit only. Anything that occurs between Cath Lab visit 1 and Cath lab visit 2 is an outcome of procedure one. Anything that happens after Cath Lab 2 is an outcome of procedure two only. The only cavity is death – if the patient was deceased at discharge for both procedures, they must be coded as such. VCOR has a strategy to not count these deaths twice when reporting in-hospital mortality.

TECHNICAL HINTS AND TIPS

Never open VCOR in multiple window or tabs of a browser!

- ◆ Sometimes Data Managers open multiple PCI records to copy details from one record to another (e.g. to copy admission data from the primary PCI record to the same-admission, staged PCI). If two PCI events are open in your internet browser, the online system is unable to determine which record you are (they both use the same "session ID"). Changes made in record 1 can sometimes accidentally overwrite changes made in record 2 without the Data Manager noticing.

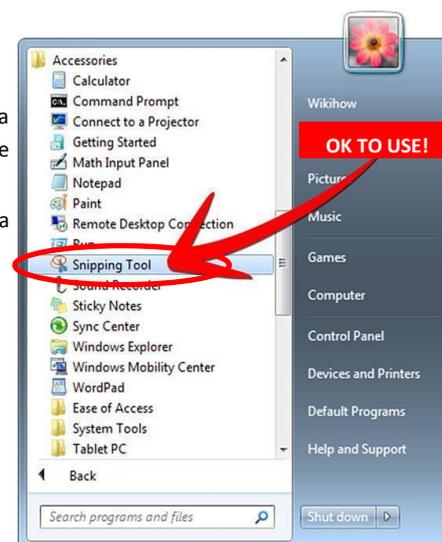
Never use the "Open in New Tab or New Window" right-click options in VCOR Online.



Copying data from one VCOR record to another

- ◆ If users wish to copy data from one record to another (e.g. Admission & Clinical Presentation data from the index PCI record to the staged PCI record) they can take a "screen shot" using the "Snipping Tool" in their Windows Menu (or "Print Screen" button on keyboard).

The captured image can be used to copy data from without opening more than one record at a time. **Do not hesitate to contact VCOR for clarification or assistance.**



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