Establishing a quality of care benchmark report

Presented by:
Sue Evans and Fanny Sampurno

MONASH University

MOVEMBER FOUNDATION · TRUENTH (A MOVEMBER INITIATIVE) · GLOBAL REGISTRY PROSTATE CANCER OUTCOMES

Background-when reports were delivered

2009: PCOR-Vic
First report to
hospitals-VIC

2018: PCOR-ANZ
First report to
hospitals-NZ, QLD

2019: TrueNTH
Global Registry
First report to
LDCs and sites

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Background-when reports were delivered

2009: PCOR-Vic First report to hospitals-VIC

2018: PCOR-ANZ First report to hospitals-NZ, QLD

2019: TrueNTH Global Registry First report to LDCs and sites

Research Article | Journal of Epidemiology and Preventive Medicine | Open Access

Monitoring Quality of Care in Men Diagnosed with Prostate Cancer: Developing Consensus Quality Indicators Using Modified-Delphi Methodology

Sue M Evans[1*], Denise Lin[1], Dragan Ilic[1], Jeremy Millar[1,2], Declan Murphy[3], and Joanne Dean[1]

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[2]William Buckland Radiotherapy Centre, Alfred Hospital, Melbourne, Victoria, Australia
[3]Australian Prostate Cancer Research Centre, Epworth Healthcare, Melbourne, Victoria, Australia

available at www.sciencedirect.com
journal homepage: www.europeanurology.com/eufocus

EUROPEAN UROLOGY FOCUS

eau

Prostate Cancer

Development of Indicators to Assess Quality of Care for Prostate Cancer

Nupur Nag[a], Jeremy Millar[a,b], Ian D. Davis[c], Shaun Costello[d], James B. Duthie[e,f], Stephen Mark[g], Warick Delprado[h], David Smith[i], David Pryor[j], David Galvin[k], Frank Sullivan[l], Áine C. Murphy[m], David Roder[n], Hany Elsaleh[o], David Currow[p], Craig White[q], Marketa Skala[r], Kim L. Moretti[s], Tony Walker[t], Paolo De Ieso[u], Andrew Brooks[v,w], Peter Heathcote[x], Mark Frydenberg[y,z], Jeffery Thavaseelan[aa,bb], Sue M. Evans[a,*]

THE JOURNAL of UROLOGY®   The Official Journals of the American Urological Association

Quality Indicators for Global Benchmarking of Localized Prostate Cancer Management

Fanny Sampurno, Jia Zheng, Lydia Di Stefano, Jeremy L. Millar, Claire Foster, Ferran Fuedea, Celestia Higano, Hartwig Hulan, Stephen Mark, Caroline Moore, Alison Richardson, Frank Sullivan, Neil S. Wenger, Daniela Wittmann and Sue Evans*

From the Department of Epidemiology and Preventive Medicine, Monash University (FSa, JZ, LDS, SE) and William Buckland Radiotherapy Centre, Alfred Health (JLM), Melbourne, Victoria, Australia, Faculty of Health Sciences (CF) and Cancer Nursing and End of Life Care, Faculty of Health Sciences (AR) University of Southampton and University Hospital Southampton (AR)

CrossMark

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Background-when reports were delivered

Modified Delphi process used to develop a consensus set of quality indicators which are important and feasible to collect

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Methodology

1. **Determine the best way to present the data**

2. **Develop the report**

3. **Assess acceptability**

Methodology

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Methodology- Determine the best way to present the data

PCOR-Vic

Literature review

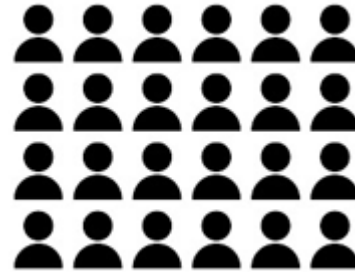**Environmental scan**

Steering Committee consensus

Methodology- Determine the best way to present the data

TrueNTH and PCOR-ANZ registry

2 Surveys

35 members completed 2nd survey

18 Non Clinicians

17 Clinicians

7 Working group Sessions

1st Survey: **10** members (5 clinicians and 5 non-clinicians) **83% RR**

2nd Survey: **35** members (17 clinicians and 18 non-clinicians) **92%RR**

Dashboard

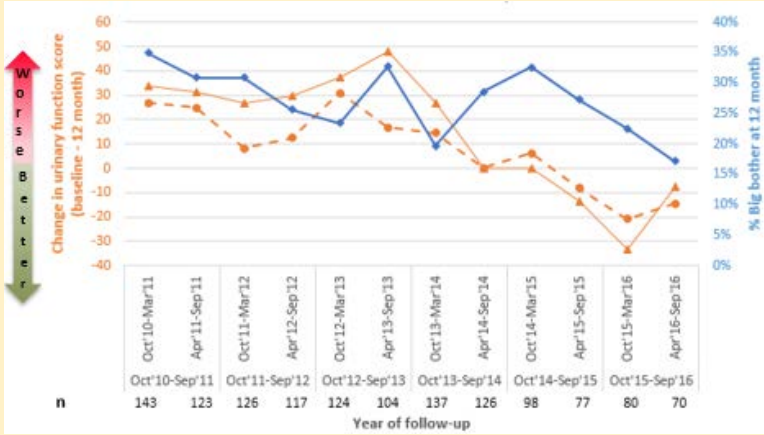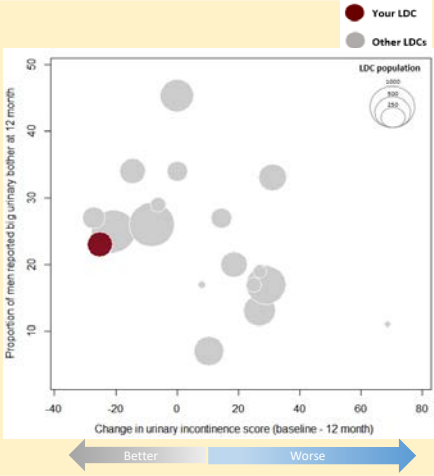| Indicators	Page No.	Your performance	Your LDC VS other LDCs Performance
TREATMENT			
8. For pN0 men undergoing RP, adjuvant ADT is not given	12		
9. Men with localised prostate cancer who are undergoing radical EBRT receive a minimum dose of 74 Gy in 1.8 – 2.0 Gy standard fractionation or the equivalent hypo-fractionated dose, 60 Gy in 3.0 Gy fractions	13		
10. Men with low risk localised prostate cancer receive AS	14		
11. For men on AS, MRI or repeat biopsy is performed within 13 months of the diagnostic biopsy	15		
12. Men with high risk localised prostate cancer receive active treatment within 12 months	16		
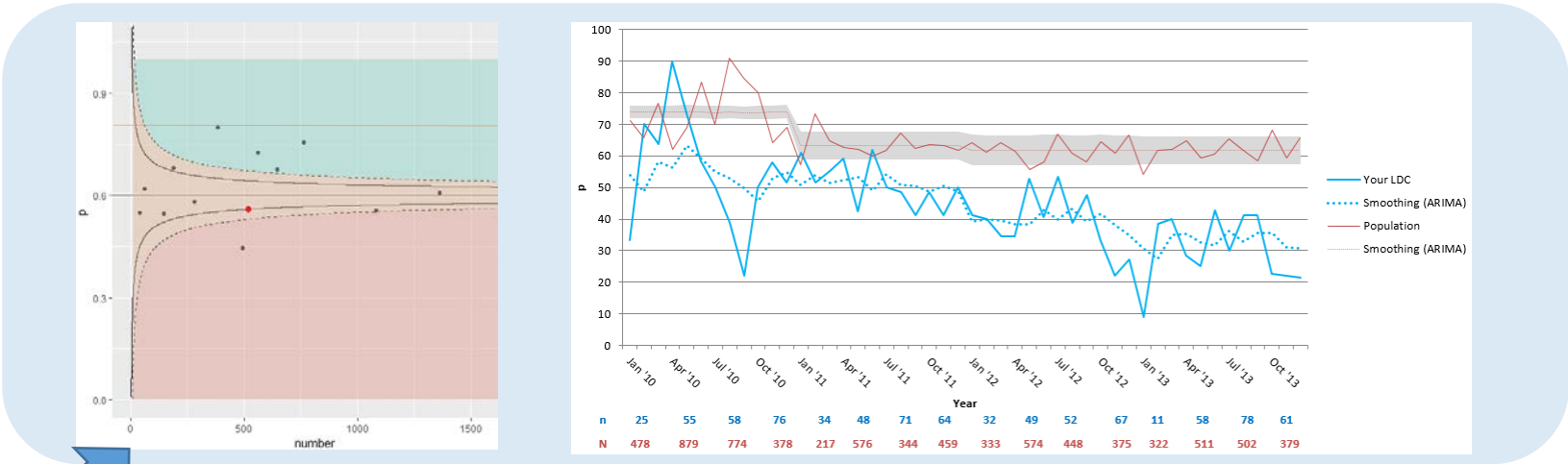
Quality Indicators

Clinical	Process of care	QI 1-15
	Outcomes	QI 16-21
PROMs	Process of care	QI 22-27
	Outcomes	QI 28-33

Methodology

1. Determine the best way to present the data

2. **Develop the report**

3. Assess acceptability

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Methodology- Develop the report

1. **Automate** vs manual process

2. Off the shelf vs **Bespoke report**

Power BI

Microsoft Corporation

+ableau

MONASH University

Methodology- Develop the report

1. **Automate** vs manual process

2. Off the shelf vs **Bespoke report**

3. SQL vs **R Report**
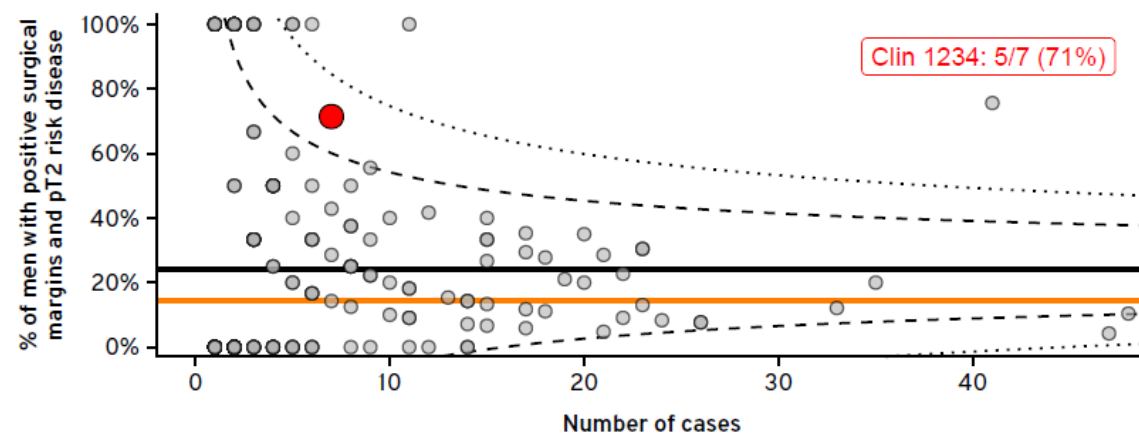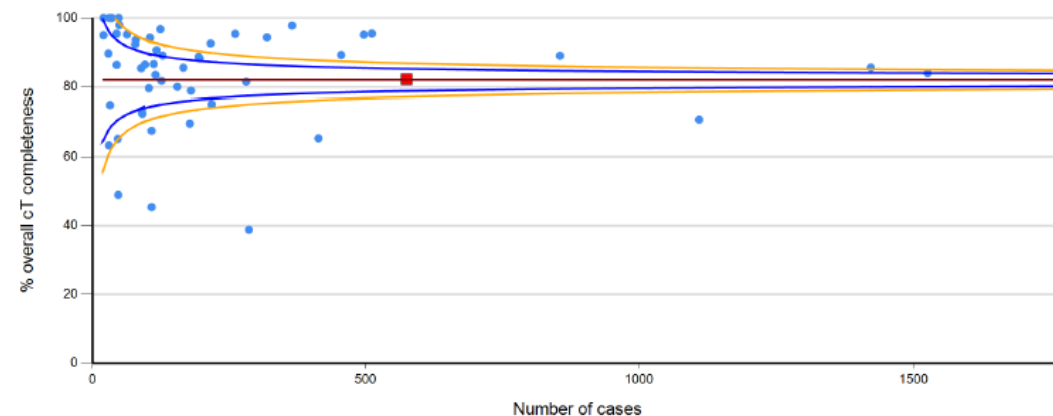
Methodology- Develop the report- Data Scientists

1. **Employ R Data Scientists**

Methodology- Develop the report

1. **Employ R Data Scientists**

2. **Prepare the data (over to Fanny)**

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Methodology- Develop the report: the research extract

Diagnosis Table

PtID	DiagDt	DiagInst	DiagPSA Status	DiagPSA
101	12/07/2009	156592	1	79323
102	5/04/2011	156593	1	79738

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Methodology- Develop the report: the research extract

Diagnosis Table

PtID	DiagDt	DiagInst	DiagPSA Status	DiagPSA
101	12/07/2009	156592	1	79323
102	5/04/2011	156593	1	79738

Patient Institute Table

PtInstID	InstID
156592	1
156593	2

Methodology- Develop the report: the research extract

Diagnosis Table

PtID	DiagDt	DiagInst	DiagPSA Status	DiagPSA
101	12/07/2009	156592	1	79323
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Patient Institute Table

PtInstID	InstID
156592	1
156593	2

InstID	InstName
1	Alfred
2	Epworth

Institute Table

Methodology- Develop the report: the research extract

Diagnosis Table

PtID	DiagDt	DiagInst	DiagPSA Status	DiagPSA
101	12/07/2009	156592	1	79323
102	5/04/2011	156593	1	79738

PSAID	PSADt	PSALev
79323	8/3/2009	20.3
79738	12/2/2011	5.6

PSA Table

Patient Institute Table

PtInstID	InstID
156592	1
156593	2

InstID	InstName
1	Alfred
2	Epworth

Institute Table

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Methodology- Develop the report: the research extract

Research Extract - Diagnosis

PtID	DiagDt	DiagInst	DiagPSA Status	PSADt	PSALev
101	12/07/2009	**Alfred**	1	**8/3/2009**	**20.3**
102	5/04/2011	**Epworth**	1	**12/2/2011**	**5.6**

Methodology- Develop the report: the research extract

PROMS Table

PtID	Month	PROMSCompleteYN	DtPROMSComplete	EPIC26Qu_1
101	0	1	13/4/2009	4
101	12	1	5/5/2010	5

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Methodology- Develop the report: the research extract

PROMS Table

PtID	Month	PROMSCompleteYN	DtPROMSComplete	EPIC26Qu_1
101	0	1	13/4/2009	4
101	12	1	5/5/2010	5

Research Extract - PROMS

PtID	PROMSCompleteYN_BL	PROMSCompleteDt_BL	EPIC26Qu_1_BL	PROMSCompleteYN_12	PROMSCompleteDt_12	EPIC26Qu_1_12
101	1	13/4/2009	4	1	5/5/2010	5

Operational Framework PCOR-ANZ
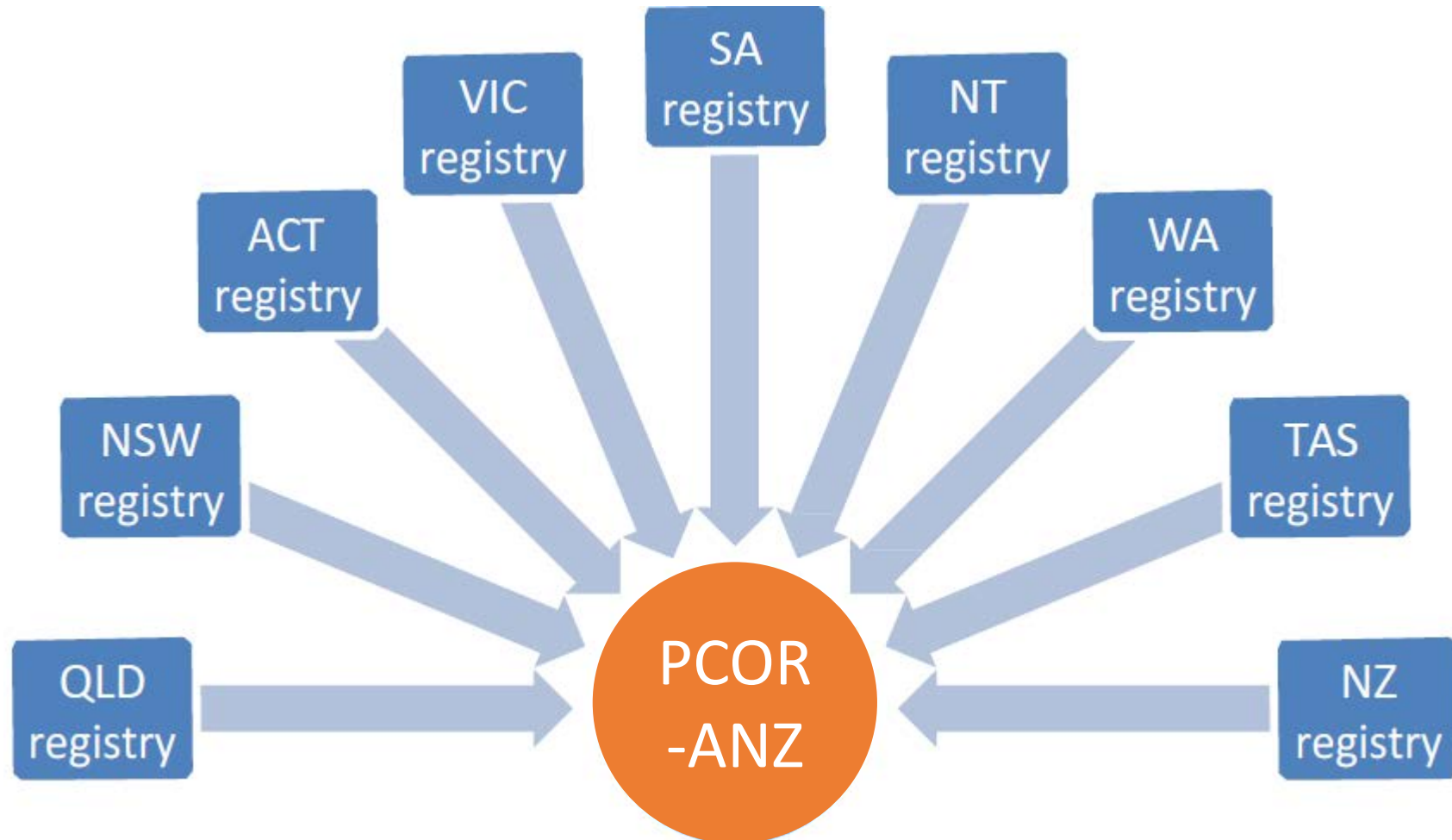
Methodology- Develop the report: the report environment
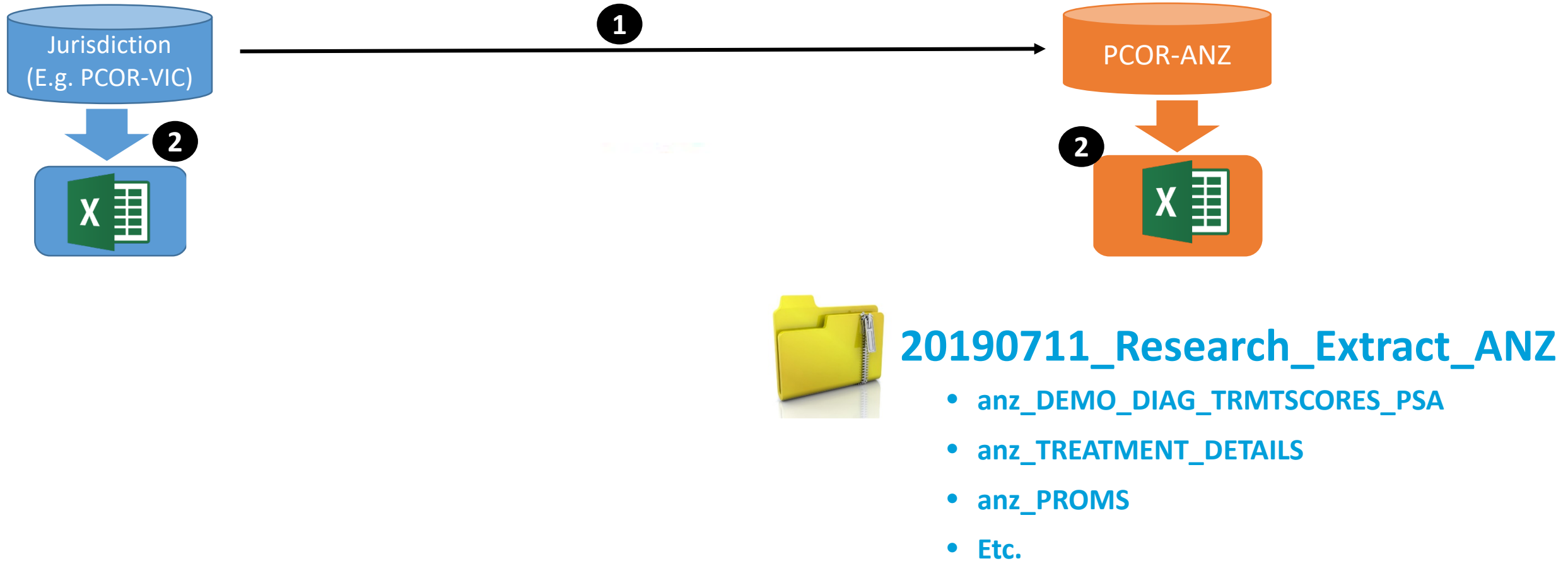
20190711_Research_Extract_ANZ

- **anz_DEMO_DIAG_TRMTSCORES_PSA**
- **anz_TREATMENT_DETAILS**
- **anz_PROMS**
- **Etc.**

Tasks	
1	Jurisdiction data to be transferred to PCOR-ANZ nightly
2	To set up bi-national research extract from jurisdiction and PCOR-ANZ databases weekly

Methodology- Develop the report: the report environment
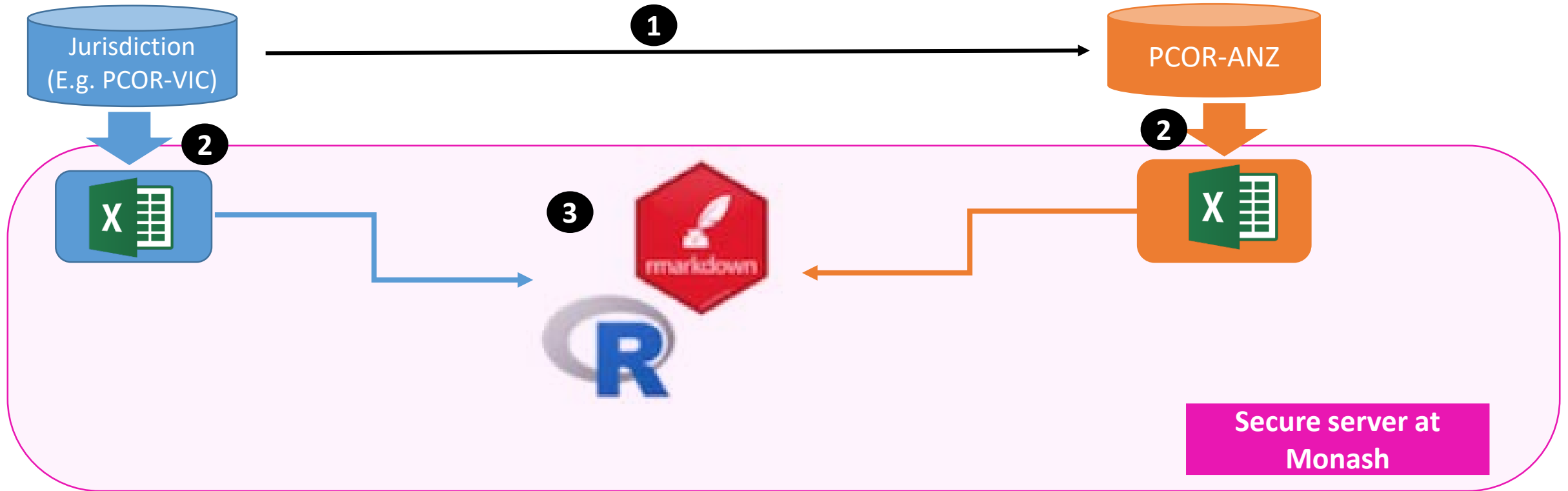
Tasks	
1	Jurisdiction data to be transferred to PCOR-ANZ nightly
2	To set up bi-national research extract from jurisdiction and PCOR-ANZ databases weekly
3	Build bi-national QI report using R Markdown

Report Requirements

➢ To be developed in a secure environment

➢ Editable version of report by non-R users

➢ Comply with Movember branding guidelines

➢ Replicate reports across Hospitals/ Clinicians

➢ Ability to have portrait and landscape formatting

➢ Automate output every six month

➢ Professional look report
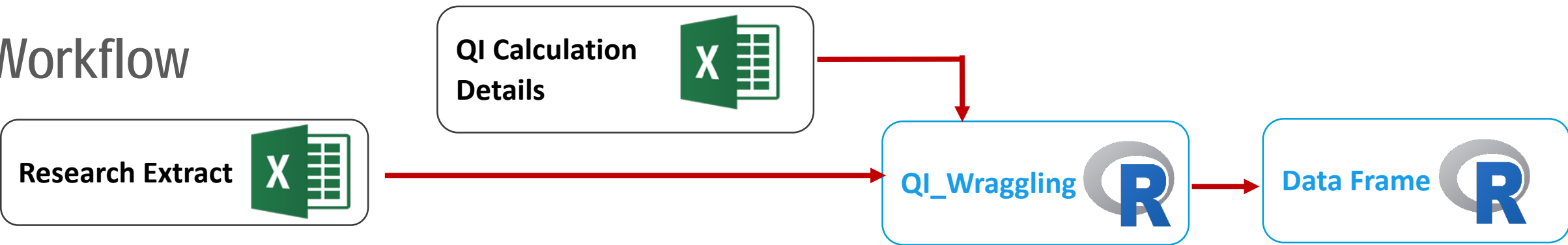
Requirements

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Calculation Details

QI Calculation Details

Research Extract

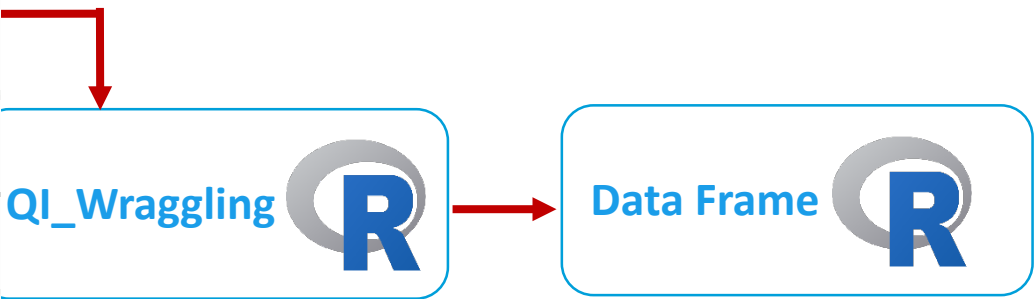|	INDICATOR	Description	Data Sheet	Numerator	Denominator
DIAGNOSIS					
1	PSA level is documented at diagnosis	This indicator reports on documentation of PSA at diagnosis…	anz_DEMO_DIAG_TRMTSOCRES_PSA	DiagPSAStatus == 1 & Consent == 1	Consent == 1
2	Clinical T category is documented in the medical record	This indicator reports ….	anz_DEMO_DIAG_TRMTSOCRES_PSA	DiagClinTStatus %in% c(1,3,4) & Consent == 1	Consent == 1

Workflow

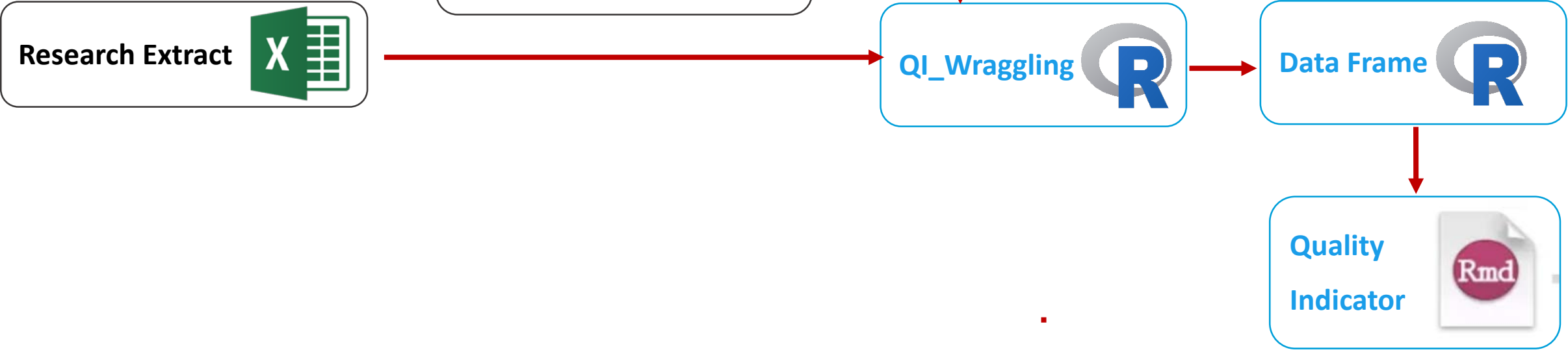|	INDICATOR	Description	Data Sheet	Numerator	Denominator
DIAGNOSIS				.	
1	PSA level is documented at diagnosis	This indicator reports on documentation of PSA at diagnosis…	anz_DEMO_DIAG_TRMTSO CRES_PSA	DiagPSAStatus == 1 & Consent == 1	Consent == 1
2	Clinical T category is documented in the medical record	This indicator reports ….	anz_DEMO_DIAG_TRMTSO CRES_PSA	DiagClinTStatus %in% c(1,3,4) & Consent == 1	Consent == 1

	Institute	Order	complete	total
1	2	1	153	158
2	3	1	73	173
3	4	1	17	20
4	6	1	4	20
5	11	1	20	23
6	12	1	95	120
7	14	1	21	23
8	21	1	12	23
9	33	1	0	173
10	34	1	55	432
11	35	1	18	33

QI.variables.summary.df.2019021

QI_Wraggling **R** → Data Frame **R**

Workflow

PROSTATE CANCER OUTCOMES | REGISTRY AUSTRALIA AND NEW ZEALAND

## 1. PSA LEVEL IS DOCUMENTED AT DIAGNOSIS

This indicator reports on how well PSA is documented at diagnosis. PSA levels are important to understand risk of disease progression. Figure 1 summarises the completeness of PSA documentation for men at your site and trend in documentation over time. We do not include men diagnosed via trans-urethral resection of the prostate (TURP) as prostate cancer may be an incidental finding.

Appendix A provides a list of men for whom data collectors could not find a PSA level taken at diagnosis. We recognise that some of these men may have returned to their referring clinician/ site, who may not be currently participating in the Registry. We would appreciate if you could please review and complete any outstanding details in Appendix A and return it to us at your earliest convenience. Sites with less than 10 eligible cases are not included in the Figure.

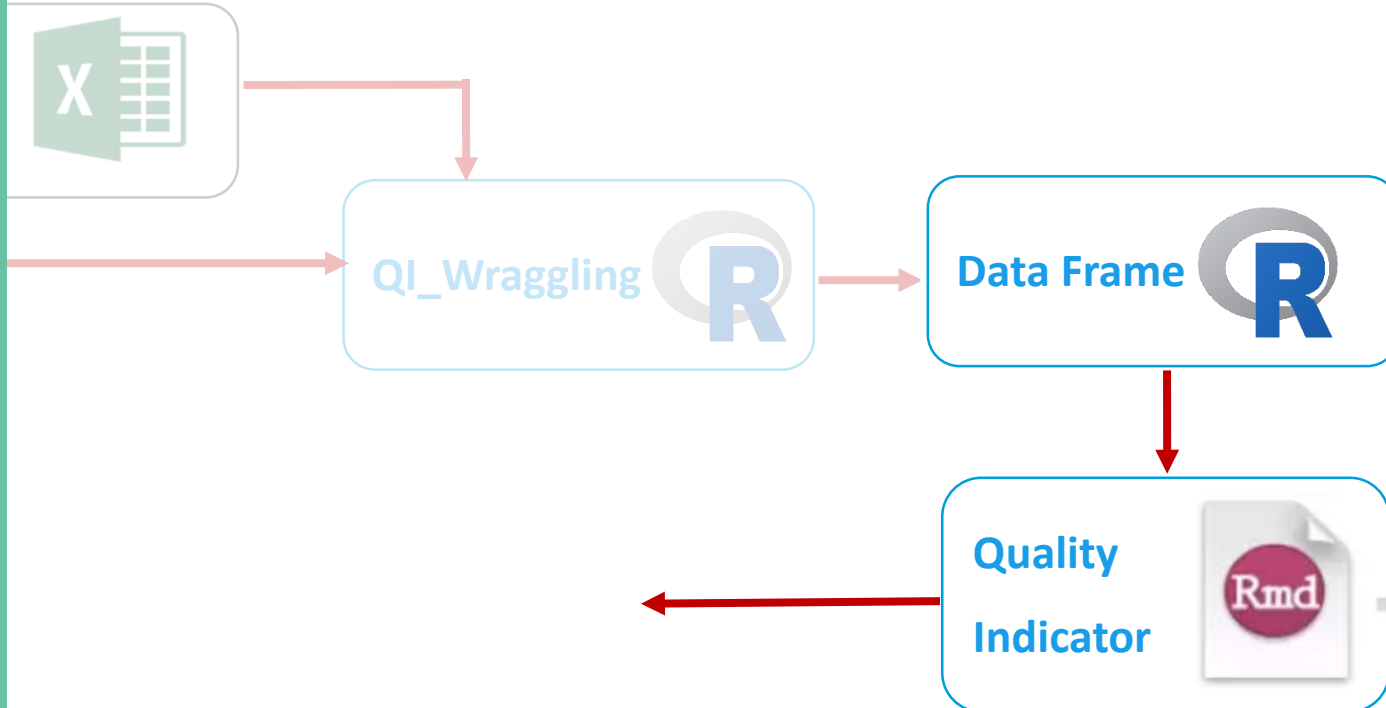| Numerator (n)	Men diagnosed via trans-rectal or trans-perineal biopsy who have a PSA level documented at diagnosis
Denominator (N)	Men diagnosed via trans-rectal or trans-perineal biopsy

*NOTE: PSA at diagnosis is defined as PSA level taken within 180 days prior to or up to date of diagnosis.

Figure 1: Figure 1: Percentage (%) of PSA levels documented at diagnosis in contributing diagnosing sites and trend
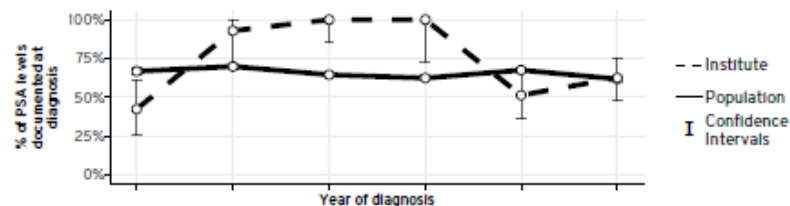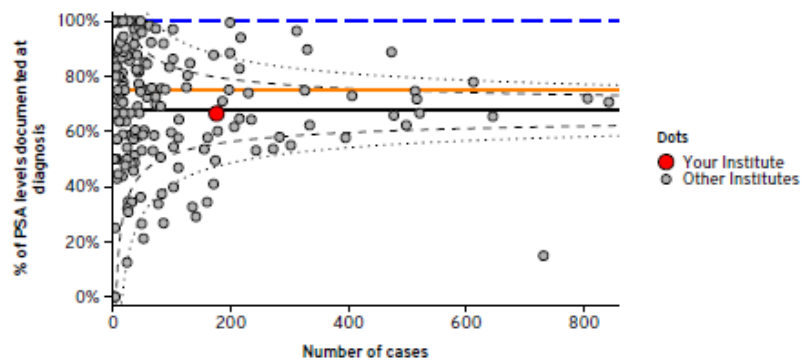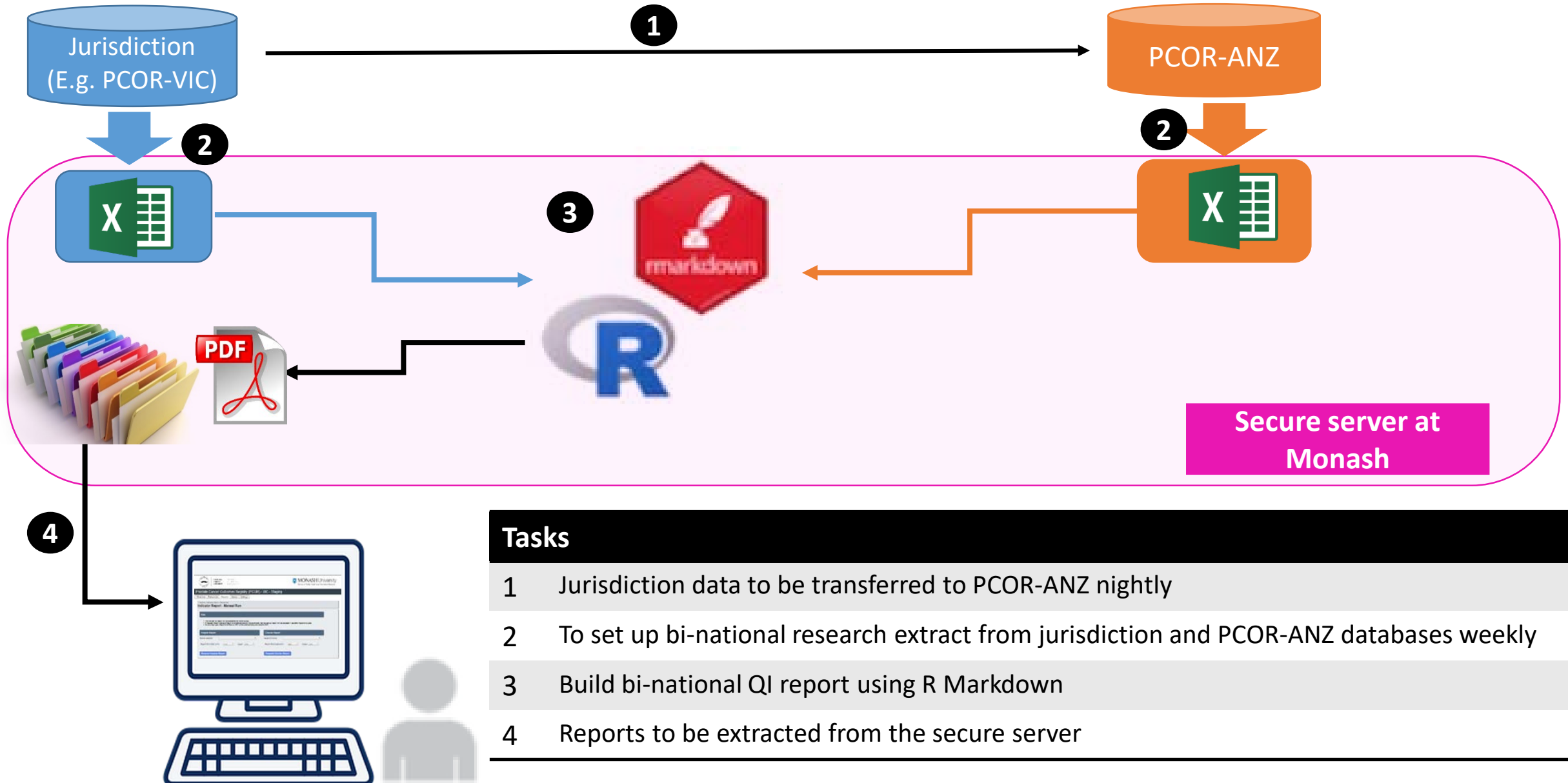

	Jan-Jun 2015	Jul-Dec 2015	Jan-Jun 2016	Jul-Dec 2016	Jan-Jun 2017	Jul-Dec 2017
Institute:						
n	11	13	22	10	20	30
N	26	14	22	10	39	48
%Total (n/N)	42%	93%	100%	100%	51%	62%
Population:						
n	1308	1649	1622	1973	2528	2623
N	1960	2361	2515	3165	3746	4249
%Total (n/N)	67%	70%	64%	62%	67%	62%

DIAGNOSIS

Methodology- Develop the report: the report environment

Tasks	
1	Jurisdiction data to be transferred to PCOR-ANZ nightly
2	To set up bi-national research extract from jurisdiction and PCOR-ANZ databases weekly
3	Build bi-national QI report using R Markdown
4	Reports to be extracted from the secure server

Methodology- Develop the report

1. **Employ R Data Scientists**

2. **Prepare the data**

3. **Write the text**

QI calculation details - Excel

FILE | HOME | INSERT | PAGE LAYOUT | FORMULAS | DATA | REVIEW | VIEW

Susan Evans

M27 | c("jur_TREATMENT_DETAILS","jur_DEMO_DIAG_TRMTSCORES_PSA","jur_TREATMENT_LONG")

	INDICATOR	Numerator	Denominator	Description.Inst	Description.Clin
DIAGNOSIS					
3	**PSA level documented post radical prostatectomy**	Men who have had a radical prostatectomy who have had a post-operative PSA level documented	Men who have had a radical prostatectomy	This indicator reports on the documentation of PSA post prostatectomy. PSA levels recorded post prostatectomy provide confidence that men have been followed up after their surgery. Figure 3 summarises the completeness of PSA documentation for men who have had a radical prostatectomy performed at your institution. **Appendix** <<**D**>> provides a list of men for whom data collectors could not find a PSA level taken post prostatectomy. Some of these men may have returned to their referring clinician/institution, who may not be currently participating in the Registry. Would you please review, complete details in Appendix <<**D**>>, and return it to us at your earliest convenience.	This indicator reports on the documentation of PSA post prostatectomy levels recorded post prostatectomy provide confidence that men have b followed up after their surgery. Figure 3 summarises the completeness documentation for men who have had a radical prostatectomy perform **Appendix** <<**D**>> provides a list of men for whom data collectors could PSA level taken post prostatectomy. Some of these men may have return their referring clinician/institution, who may not be currently participa the Registry. Would you please review, complete details in Appendix << return it to us at your earliest convenience.
4	**High/very high risk or metastatic disease with no treatment**	Men diagnosed with high/ very high risk or metastatic disease, aged <= 80 years at diagnosis and who have had no surgery or radiotherapy recorded in the medical record		This indicator is intended to provide an alert if there are men who have inadvertently not received follow up after being diagnosed with advanced disease. There may be good reason for not initiating treatment and it may be that treatment has been provided at another site or by another clinician not currently contributing to the registry. Please check your records. Given that this is a rare event, we do not provide it as a benchmark indicator.	This indicator is intended to provide an alert if there are men who have inadvertently not received follow up after being diagnosed with advanc disease. There may be good reason for not initiating treatment and it m treatment has been provided at another site or by another clinician not contributing to the registry. Please check your records. Given that this is a rare event, we do not provide it as a benchmark ind
5a	**Low-risk disease in men who have a radical prostatectomy**	Men who have had a radical prostatectomy and have low risk disease	Men who have had a radical prostatectomy	This indicator reports on men who have had a radical prostatectomy and who have low risk disease.* These men may have met the criteria for active surveillance. However, we recognise that there may have been other factors involved in the treatment decision such as family history and patient preference. Figure 5a summarises the percent of men who have had a radical prostatectomy at your institute and have low risk disease, and trend over time. <<**Appendix** <<**E**>> provides details of men who were recorded as having had a radical prostatectomy and who have low risk disease >>	This indicator reports on men who have had a radical prostatectomy a have low risk disease.* These men may have met the criteria for active surveillance. However, we recognise that there may have been other fac involved in the treatment decision such as family history and patient p Figure 5a summarises the percent of men who have had a radical prost performed by you and have low risk disease, and trend over time. **Appendix** <<**E**>> provides details of men who were recorded as having h radical prostatectomy and who have low risk disease.

QI calculation details | Acronyms | Data.Dictionary | Treatment_matrix | Recruitment_flow | Recruitment_flow_edges | Appendix A

READY

87%

11:11 PM
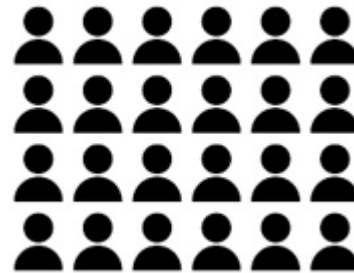7/14/2019

Methodology- Assess acceptability

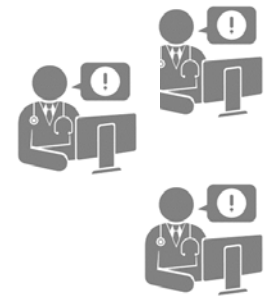1. **Link to mock report**

2. **Refining the report**

7 (5 x PCOR-ANZ+2 xTrueNTH) working group Sessions

Reviewed and endorsed by PCOR-ANZ Steering Committee

Survey to all clinicians receiving report

Acknowledgements

"It takes a village to raise a child"