

Yuriy Melnyk¹, Adeera Levin^{1,2}, Mark Lazaruko³

¹BC Provincial Renal Agency; ²Faculty of Medicine, The University of British Columbia, Vancouver, BC, Canada; ³Consultant, Edmonton, AB, Canada

Introduction

The BC Provincial Renal Agency supports a network of provincial kidney care modality committees that develop and facilitate the implementation of clinical guidelines/standards, produce and disseminate knowledge, leverage interdisciplinary synergies, and work as professional development hubs. The BCPRA allocates funds and provides administrative, project management, communications, finance, statistical research and other support for committee operations and projects. The BCPRA recognized the potential value of developing a valid and reliable tool to express committee operations and projects in financial terms to better understand their value and estimate the resources necessary for their sustainable support.

Objectives

To produce a resourcing model for the BCPRA committee work and a plug-in Excel model application tool.

Methods

Assumptions:

- Despite natural variability, on average over time operations and projects require the resources estimated by the resourcing model.
- Stakeholder agreement on model assumptions and input parameters is key and achievable for model credibility and applicability.
- Unique subset of assumptions underpins each case mix group of operations, projects, resources, capacity cost rate calculations, and the final model → flexibility and scalability.

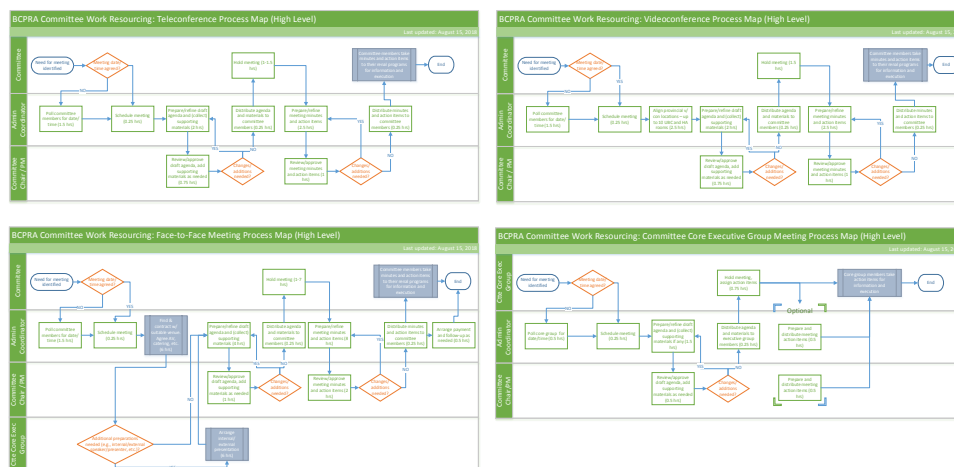
Theoretical foundation: Elements from the Kaplan and Porter 7-step model to perform time-driven activity-based costing in health care organizations + the case mix approach + internal subject matter expert opinion and estimates.

Practical application: Break it down into smaller chunks. The methodology is applied in 5 steps:

1. Identify and describe what committees do:
 - Case mix groups of operations and projects.
2. Identify and describe what committees require:
 - Case mix groups of human resources and non-human resources.
3. Process mapping for all case mix groups of operations and projects.
4. Capacity cost rate calculations for human resources, cost estimates for non-human resources.
5. Model creation for each case mix group of operations and projects.

Results

Operations:



Capacity cost rate calculations:

Resource	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)	Physician (incl. Chair, non-physician)
Full-time hours per year	NA	NA	15	7.5	NA	1.5	7.5	7.5	7.5	7.5	7.5	7.5
Part-time hours per year	NA	NA	200	200	200	200	200	200	200	200	200	200
Full-time hours per year	NA	NA	190	190	190	190	190	190	190	190	190	190
SA, holiday, vacation hours per year	NA	NA	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5	32.5
Training hours per year	NA	NA	30	30	30	30	30	30	30	30	30	30
Part-time hours per year	NA	NA	158.5	158.5	158.5	158.5	158.5	158.5	158.5	158.5	158.5	158.5
Worship and/or factor	NA	NA	1.221	1.221	1.221	1.221	1.221	1.221	1.221	1.221	1.221	1.221
Effective hours per year	NA	NA	150.27	150.27	150.27	150.27	150.27	150.27	150.27	150.27	150.27	150.27
Travel/allow	NA	NA	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Benefits as % of salary	NA	NA	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
Total benefits	NA	NA	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000
Salary and benefits per FTE	\$10,000	NA	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Cost per member	NA	NA	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Cost per hour	NA	NA	\$64.6	\$64.6	\$64.6	\$64.6	\$64.6	\$64.6	\$64.6	\$64.6	\$64.6	\$64.6

Basic resourcing model:

Resource	Teleconference	Videoconference	Face-to-Face	Excl. Group Meeting	Project L1	Project L2	Project L3
Committee Chair	1.75	NA	1.5	NA	1.25	NA	7
Physician (incl. Chair, non-physician)	1	\$150.00	1.5	\$225.00	4.5	\$675.00	0
Admin Coordinator	1.75	\$420.00	1.5	\$375.00	1.25	\$315.00	17.5
Project Manager	0	\$0.00	1.5	\$135.00	1.75	\$157.50	14
Communication Specialist	0	\$0.00	0	\$0.00	0	\$0.00	2
Statistical	1	\$75.00	1.5	\$112.50	2	\$150.00	4
Research Specialist	0	\$0.00	0	\$0.00	0	\$0.00	2
HR/HR Business Analyst	1	\$60.00	1.5	\$90.00	4.5	\$270.00	0
Guest speaker (non-physician)	0	\$0.00	0	\$0.00	1	\$90.00	0
Equipment rental	NA	NA	NA	NA	NA	NA	NA
Catering	NA	NA	NA	NA	NA	NA	NA
Professional printing	NA	NA	NA	NA	NA	NA	NA
Postage	NA	NA	NA	NA	NA	NA	NA
Accommodation	NA	NA	NA	NA	NA	NA	NA
Total project contingency	\$1.25	\$90.00	\$135.00	\$157.50	\$157.50	\$157.50	\$157.50
Contingency factor - 20%	2.44	\$180.00	\$270.00	\$315.00	\$315.00	\$315.00	\$315.00
Total	\$1.25	\$180.00	\$270.00	\$315.00	\$315.00	\$315.00	\$315.00

Plug-in Excel model application tool:

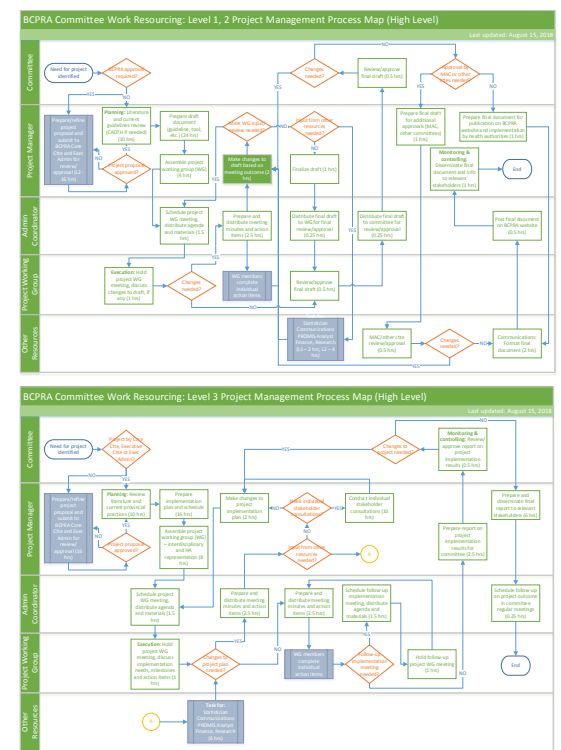
RESOURCING MODEL AND MODEL APPLICATION TOOL FOR THE BC PROVINCIAL RENAL AGENCY'S COMMITTEE WORK
Final Report 04-2019

Input committee name and the relevant number of annual operational activities and projects of each type.
The model will calculate the annual total hours and cost per resource and total to accomplish the volume of work.

Committee	Resources	Hours	Cost
Committee Chair (non-physician)	1.75	150.27	\$9,450.00
Physician (incl. Chair, non-physician)	1	150.27	\$1,502.70
Admin Coordinator	1.75	150.27	\$1,502.70
Project Manager	0	0	\$0.00
Communication Specialist	0	0	\$0.00
Statistical	1	150.27	\$1,502.70
Research Specialist	0	0	\$0.00
HR/HR Business Analyst	1	150.27	\$1,502.70
Guest speaker (non-physician)	0	0	\$0.00
Equipment rental	NA	NA	NA
Catering	NA	NA	NA
Professional printing	NA	NA	NA
Postage	NA	NA	NA
Accommodation	NA	NA	NA
Total project contingency	\$1.25	\$90.00	\$9,450.00
Contingency factor - 20%	2.44	\$180.00	\$18,900.00
Total	\$4.19	\$370.27	\$37,852.70

Results

Projects:



Conclusions

Early indications are that the model could serve the BCPRA as an evaluation, projection and decision-support tool. Benefits include:

- A methodology to quantify required inputs (resources) for a desired set of outputs.
- Express fixed-cost resources (positions) as variable-cost functions.
- Support BCPRA's accountability, inform evaluations of value-based care delivery.
- Better resource use awareness among all stakeholders.
- Streamlined ways to advocate for appropriate resourcing of the renal network and facilitate decisions.

Acknowledgements

Special thanks to the BCPRA staff for information, estimates and unwavering support for this project.

Contact

Yuriy Melnyk E: yuriy.melnyk@bcpra.ca P: 604.829.2660