

**Questions from the Introductory Webinar on the
Cancer Risk Management Platform**

Question #1:

Q: What do you do about the quality of the information coming out of the platform? In other words, if there were different users with different expertise, I imagine one could get different results. So it is possible that a cancer agency, ministry, or department of health could get varying results on important questions. I'm wondering if there are any thoughts on what happens with that aspect of this tool?

A: This is a learning experience for Statistics Canada and also for the Partnership. It is the Canadian Partnership Against Cancer's first time building a model. Statistics Canada has had twenty years of experience building other models. It would be useful as people start using the platform to set up some sort of users group to share their simulated results and particularly if you find something that does not make sense, it could mean that there is a bug in the software. In our experience, however, results sometimes come out that are counter-intuitive. They are actually correct, but they are there for reasons that you may not think of automatically. To have some sort of process whereby individuals try things out and then engage in some sort of discussion, this may be helpful.

A lot of the data that we have built into the model is Ontario-centric and we apologize for that. Data sets were easier to obtain in Ontario. If you are sitting in another province, you may question whether the cost for a procedure, a physician fee, or a particular test may be different in your particular jurisdiction. There may be a need for or a desire to alter the model parameters to be more specific and relevant to your particular jurisdiction. In terms of the basic construct of the model, having completed the focus groups with physicians across the country, we have a high confidence level that what we are putting out is the standard of care of what patients would reasonably expect to get in the country and the proportion of those getting no treatment is reflective of reality today.

One of the challenges is keeping the model current because therapy keeps changing in oncology. We will have to take steps over time as significant practice changes occur to refresh the model in a way that will make it valid for future policy decisions.

Question #2:

Q: *Can this modeling system be readily applied to other cancers, for example, breast cancer, or does this only apply to lung and colon cancer?*

A: For phase I work, we have focused on lung and colon cancer. We are embarking on phase II. You can see in the Appendix of the PowerPoint presentation on, slide 40, it outlines the different disease sites by phases. For phase II work, which we have just started on with Statistics Canada, we will be working on the breast and cervical cancer models.

Question #3:

Q: *How much flexibility is there in the platform for users to input different scenarios ie. Compare two different FOBT tests with different costs and different performance (sensitivity and specificity)?*

A: This platform is completely modular. Users will be able to vary different parameters. The platform is fully transparent so that users can pull up different workbooks and worksheets that are embedded within the platform and change different parameters such as the sensitivity and specificity of the various tests, and costs that better reflect their current practice or the current costs within their jurisdictions, so there is that flexibility to be able to compare different types of scenarios.

Question #4:

Q: *What behavioural risk factors have been put into this model?*

A: For lung cancer, we have put in two risk factors: smoking and radon. In the case of colorectal cancer, the focus was on screening, so there were no behavioural risk factors put into this model. Do you have any in mind?

Q: *Will there be the possibility of adding in behavioural risk factor information to the model? To model prevention and screening might be useful for policy makers.*

A: Absolutely. This model is extensible. It is designed so that modules like that can be added on. For the time being, the main constraint is having the time, the analysts and the evidence to say these are the main risk factors - not just qualitatively. If users want to add a module that looks at the effect of some aspect of diet, for example, on the incidence of colorectal cancer, these modules can be added and we welcome your input.

Question #5:

Q: *It would be helpful if the model can demonstrate the impact of successfully managing the transition to survivorship and the return to work in comparison to NOT doing so.*

A: What we have included in the model on the economic side is when people have cancer, depending on severity, they are generally not able to work. When the treatment is successful, and they do return to work, with a few months lag. This module is included in the model. If people would like to adjust these parameters, they can be found in the more advanced use of this model. Users can play around with this parameter, this is certainly feasible.

Question #6:

Q: *It is very helpful to model the impact of colorectal screening.*

A: That is one of the primary objectives of the model. We have just taken you through some FOBT versus FIT examples. The model has the potential to model other forms of colorectal screening, for example, modeling the impact of colonoscopy versus FOBT. As evidence may emerge that other forms of colorectal screening can reduce colorectal cancer mortality, these will become relevant policy questions and these can be readily modeled on our Cancer Risk Management Model.

Question #7:

Q: *I would like to comment on the Panitumumab model - \$200 million per year for Canada. Although my guesstimate is that this may be slightly high, this is not outrageously high. We are already beginning to experience a major trend in Canada that as we fund these biologicals for advanced disease with treatment to progression, we are finding out that the clinical trials data is insufficient to estimate the impact. Furthermore, we don't really know whether we are seeing the same, or possibly even better outcomes. We are probably modeling on medians when we should be using averages. We are developing a body of information that is very helpful to factor into models like this. The provinces that have the comprehensive oncology drug budgets can actually feed into this system and provide you with some validation data that can be further incorporated into models. I would be fascinated, say, for example, with the chronic disease management models, not just to look at the snapshot of health economics we see when these drugs are approved for funding, but to look downstream to see if we can estimate what the total cost per patients is truly translating into. Are we able to validate any benefits? What is the cost of all the ancillary care that we might be able to pull out of ministerial databases or Statistics Canada filings that will give us a better sense of what we are investing for the long term and better sense of the benefits and risks for some of these costly, yet very helpful programs.*

A: These are the issues that we are confronting and are difficult decisions with finite amount of health care resources whether the investment goes into the Panitumumab-type drug or into screening programs. The model is really meant to help decision makers look at the value obtained from both and try to make decisions. The model is a model. As we get better data from administrative data sets in any province, we can fine-tune the model to come closer to truth.

Question #8:

Q: We are doing some other modeling here in Manitoba and using the Community Health Survey data for behavioural information as well. One of the areas that is a particular concern for health planners is smoking rates in young people. One of the things that we found was that the Community Health Survey suggested that smoking rates in teenagers was about 10% but we believe more reliable data sets suggest that it is actually twice that. I wondered what effect this kind of variation in your basic parameters would have in the model and how this would be accommodated? Can we do a sensitivity analysis on the basic parameters that were fed in through the CCHS?

A: Yes, we can certainly do a sensitivity analysis. I would be interested in the data that you are referencing with respect to a higher smoking rate. It may be that what we find from the model is that we need to go back to these monitoring surveys and seeing why the information does not square up and to reflect on this.

Q: I was interested in the comment about using Ontario cost data. I was recently made aware of the EBIC which I believe came out in 1998. I suspect this is largely driven by Ontario data as well. Is there a comment on the comparability of these two sources and what that might mean?

A: Actually, EBIC is correct in its totals - province by province - because it starts with provincial data. This has been assembled by the Public Health Agency of Canada. We had a lot of discussion when we started this project of whether we were going to use a top-down or bottom-up costing approach. There are certain strengths of using top-down because things have to add up and that is what EBIC does. They start with the global cost from provincial public accounts and from CIHI - the national health expenditure information - and then break it down as best as they can by asking each province to give them breakdowns of hospital stays, for example, by ICD codes. We thought about that but in the end, this was not practical for us. It is extremely difficult to get good-quality, disease-specific cost data out of the health care system. Hospitals are the best, and they are not perfect. As soon as you get beyond hospitals, it gets more difficult.

To the extent that Manitoba has its own cost data, you can go to the spreadsheets, where the cost information is, and if you would rather put one dollar number rather than what you see there, or if you believe from looking at Manitoba longitudinal data that the paths that people follow for various kinds of colon cancer-progression (say) are not as the proportions that are in the spreadsheets, you can change this to what would be appropriate for Manitoba.

Question #9:

Q: With regard to survivorship issues, quite often, there are cognitive and other impairments, depending on the complexity and severity of the treatment related effects, long term toxicity, and so on. Quite often, there are a lot of additional costs. Some patients develop hypertension, other complications, and so on. Was any of that factored in to look at these long term costs?

A: No. There is an explicit measurement of health related quality of life and that was based on an expert consensus panel of clinicians but it was about the various diseases in question. What you are pointing to is a very important area that needs further work. The fact that some individuals face co-morbidities with cancer and that these co-morbid conditions can be changed is a reality. In order to determine in some empirically feasible way what exactly these relationships are, really requires that we need longitudinal data, as exists in Manitoba. The type of analysis that would be needed for this model is not feasible at this point. To the extent that people start producing this information, the model architecture is such that we could take this on board.

Question #10:

Q: Does the model take into account the costs associated with acute and/or chronic adverse effects associated with the antineoplastics?

A: The short answer for the acute is yes. There are a proportion of patients that get Fibrile Neutropenia, so that part has been built in. For long term late effects, we have not been able to build this into the model because there is not easy access to data that would allow us to build that into the model readily.

Question #11:

Q: I wonder about also leaving room for genetic data for risk assessment (ie. Susceptibility genes) and risk reduction options, and also for pharmacogenomic data which can further tailor treatment and incur very different cost-effectiveness profiles etc.

A: The short answer is that this is not in the model at present. One of the advantages of the architecture of this model is that as information emerges, this can be taken on board. For example, right now people are tagged at birth with their sex - we know whether they are male or female. There is nothing stopping us, if we have the data, to tag individuals also with genetic susceptibilities or pharmacogenetic type information. From a compliance or modeling point of view, the 'bottleneck' as it were is where are the data?

As it relates to the pharmacogenetics, we could actually do this in the colorectal model because there is relatively recent information around KRAS mutations and the use of Cetuximab with combination chemotherapy. So in fact, we could do that modeling. Everyone needs to recognize that it is all about time, energy, and money. We built these two models under a fairly tight timeline and we are responsible for building two more rather quickly. But it is all within the realm of possibility. As others gain interest and facility with the existing model, they might be able to take on some of these tasks.

This is a very modular platform and so, if people have that capacity and expertise to use the model in a way, we would welcome any type of collaboration here at CPAC with groups out there who are interested in looking at extending disease components to the model.

Question #12:

Q: What kind of information do you have on the validity of this process? This strikes me as very similar to the POHEM modeling that they used to have around the year 2000, I believe that was a Health Canada initiative. How will you test the validity and how certain can people be that they can make interventions based on the information they get from this?

A: This is in fact an extension of the POHEM modeling. I wish Health Canada would take this up, but it was developed by Statistics Canada. You raise a fundamentally important question. We have endeavored to validate the model in various ways. But when it comes to projecting the next twenty years, the future is inherently uncertain so we can never know whether our projection is correct. Any user of the model should be cautious in that regard. Part of the reality is that people need to start using it, looking at the results, and discussing this with each other, and this will build confidence.

The longest running projections of this country are those of the **Chief Actuary who does the Canada Pension Plan that started in 1966**. The federal

Department of Finance in every budget provides economic projections, though there is always debate about how good those projections really are. Sometimes they get it right, sometimes they get it wrong. I don't expect this model to be perfect. That would be utterly unrealistic. The best we can do is say that with the knowledge that we have and the data that we have, this is the most sophisticated kind of extrapolation that takes account of a complex range of interactions, and it lines up with history.

Q: Will you be following individual organizations or provinces, for example, if they were to use your program to make a change. Would it be useful to see, in fact, how valid the program was in predicting what change would occur? Is that something that you will be doing on an ongoing basis?

A: One of features associated with this platform is that it is part of CPAC's portal at www.cancerview.ca; the portal has a functionality for users which is our collaborative space community. There, we are going to encourage users of the platform to share some of the different models and scenarios that they have constructed so we could look at that as an option to share this information amongst the user community.

If you have any further questions that were not addressed during the webinar, please email riskmgmt@cancerview.ca.