

## Evaluation of a Guaranteed Basic Income Benefit for Prince Edward Island

As demonstrated in *A Proposal for a Guaranteed Basic Income Benefit in Prince Edward Island* (Boadway et al., 2023), a guaranteed basic income project for Prince Edward Island (GBI-PEI) would considerably reduce poverty in the province. Just as importantly, however, it would offer a unique opportunity to study the management and impact of a GBI at the level of an administrative authority responsible for taxation and welfare programming. It is crucially important that these management lessons and impacts be monitored and assessed in a fashion that is intellectually rigorous to provide an authoritative record of procedural successes and failures and the magnitude of economic and social benefits and costs. For this to occur, the evaluation cannot be an afterthought or a late addition to the project but an integral part of the design and execution of the project itself. With that agenda in mind, this note is intended to serve as a supplement to the evaluation section 10 of Boadway et al. (2023) and a starting point for the GBI-PEI evaluation advisory team to be formed as part of the design and administration framework for the project.

### 1. A Causal Evaluation Framework for a Provincial-Wide GBI in PEI

The proposed GBI-PEI would be a demonstration project in which all PEI residents who are eligible for the GBI would receive it. Projects of this nature have been designed before, most notably in the Canadian context as the Dauphin, MB “saturation site” in the Manitoba Basic Annual Income Experiment (Mincome) and the Lindsay, ON saturation site in the Ontario Basic Income Project (OBIP) (Simpson, 2023). While the Ontario project was abruptly cancelled before any evaluation could be conducted (Mendelson, 2019), the Dauphin component of Mincome was completed and its outcomes have been analyzed. Another saturation site arising from an ongoing natural experiment, the Alaska Permanent Dividend Fund, has also been analyzed.

The Dauphin saturation site was unique because the remaining components of the five income maintenance experiments conducted in the United States and in Canada during the 1970s (Simpson, 2020) were designed as randomized control trials (RCT) in order to measure the *causal* effect of a GBI on various health and labour outcomes. Following the format of medical experimentation on participants to test the effectiveness of drugs and vaccines, the 1970 RCTs involved scattered or dispersed samples of participants (families) who were randomly allocated to treatment and control (no treatment) groups. This classical scientific experimental design is referred to as the gold standard in program evaluation research as randomization eliminates biases that would otherwise arise if individuals were to select into treatment. RCTs allow for simple estimates of the difference in outcomes between participants in the treatment and control groups; however, in the case of income maintenance programs, they do not address important administrative issues and community-level effects that could be tested using a saturation site (Simpson, 2020). Because RCTs are not able to provide information on these administrative outcomes, it is our recommendation that a GBI-PEI pilot be designed as a saturation site. The added benefit of a saturation site is that it potentially simplifies the enrollment process for the treatment group, since treatment is now well defined as all applicable members of the province who qualify based on tax records from the previous year.<sup>1</sup> The significant complication, however, is that a saturation site by definition lacks a control group since everyone at the site would receive the income maintenance (or GBI) benefit if eligible.

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<sup>1</sup> For discussion of the serious enrollment problems encountered in OBIP, see Mendelson (2019, 14-15).

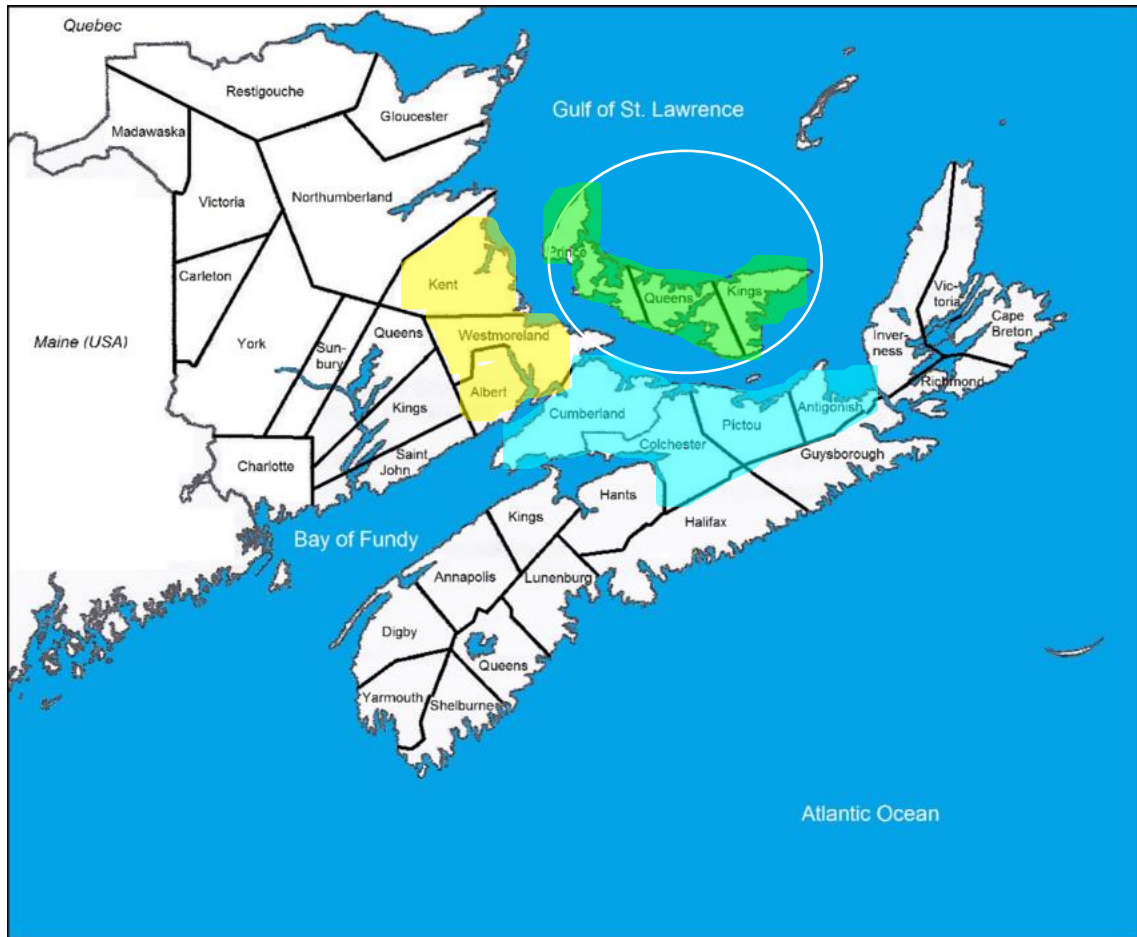
We outline three approaches that could be used to address the lack of a control group. The first approach involves randomly selecting families to participate in control and treatment groups in areas outside of the PEI. In the Mincome experiment, program facilitators formed treatment and control groups in small rural dispersed samples within Manitoba that were provided the same single benefit plan as the Dauphin site. This established the rural control group as a possible control group for Dauphin, although not in the classical experimental sense where the control group members would be chosen randomly from the same site as the treatment group. As a consequence, there could be important but unknown site-specific differences between Dauphin and the sites from which the rural group were chosen that would affect outcomes and contaminate estimates of the experimental effect.<sup>2</sup> Calnitsky and Latner (2016) found that labour force participation in Dauphin declined relative to the rural control sample but also relative to the rural treatment sample to a smaller extent, implying that some (about 30%) of the labour supply response could be interpreted as a community effect that would escape detection in the classical experimental framework.

The second approach adopted by Forget (2011) matched administrative records from the University of Manitoba Centre for Health Policy for residents of Dauphin with other residents of rural Manitoba to compare health outcomes. This approach conforms to a now well established quasi-experimental design (Royal Academy of Sciences, 2021) that uses statistical methods to match participants who are treated to those who have not received the treatment using variables important to the treatment selection process; these variables could include personal or site-specific characteristics. Compared to those outside Dauphin (those not treated to the Mincome benefit but matched to the Dauphin sample), Forget found lower hospitalization rates and physician claims for mental health disorders in Dauphin and, using administrative records from the Manitoba Department of Education, found higher rates of continuation into grade 12 in Dauphin.

A third approach, used in the study of the Alaska Permanent Dividend Fund (Jones and Marinescu, 2022) and many labour market studies, would be to find a region or regions of the country with population and other characteristics that are closely matched to PEI. Two possible regions that could provide comparison groups for the PEI intervention are Southeast New Brunswick (Albert, Westmoreland and Kent Counties) and Counties across the water from PEI in Nova Scotia (Colchester, Cumberland, Pictou and Antigonish) (see Figure 1). Besides immediate geographic proximity to PEI, these two sub-provincial regions of New Brunswick and Nova Scotia likely have comparable populations and income characteristics to PEI. Southeastern New Brunswick has a city larger than Charlottetown, while the Nova Scotia Counties have urban centres comparable to PEI's cities other than Charlottetown. Southeastern New Brunswick and PEI have both had comparably strong economic and population growth in recent years. Both non-PEI regions are unlikely to see comparable interventions with respect to income assistance as with a GBI in PEI. PEI, Southeastern New Brunswick and the Nova Scotia region have seasonal workers, comparable labour market conditions with respect to Employment Insurance, and minimum wages which the three provinces compare against each other.

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<sup>2</sup> It is not clear from the documentation how the rural sites or Dauphin were chosen.



**Figure 1: Potential control sites that could be used to examine the impact of a GBI-PEI**

While each of the three approaches requires the choice of an external control sample, statistical matching methods ensure that those in the control sample look like those the treated group on observable characteristics and hence would have received the GBI had they lived in PEI; balancing tests that examine covariates across treated and control matches can be used to demonstrate the effectiveness of the matching algorithm. Matching also aligns with the third approach to the analysis of what would be a natural experiment occasioned by the GBI-PEI project akin to the Alaska Fund. Since matching every individual in PEI to corresponding individuals elsewhere would be both complex and time-consuming, particularly in terms of program implementation, the third approach in which PEI is matched to a specific region elsewhere, as applied in the analysis of the Alaska Fund, seems to be the best approach to follow.

Once the control groups are selected, the GBI could be evaluated using an event-study difference-in-differences design, which is a quasi-experimental empirical method often used in program evaluation research. The approach would involve comparing GBI recipients in PEI to non-recipients in the non-treated areas outside of GBI (see Figure 1) before and after the implementation of the program. The difference-in-differences methodology is used widely in economics, and particularly in labour economics (see Fredriksson and Oliveira (2019) for an overview). More recently, economists now implement the difference-in-differences methodology as event studies in order to establish parallel trends in outcomes

(such as labour supply, health, food security, etc.) prior to the policy intervention under assessment. The data requirements of the event-study difference-in-differences design are discussed further in Section 3.

## 2. Topics of Study

There are a number of outcomes that require attention in the evaluation of a province wide GBI in PEI. While the income maintenance experiments adopted labour supply response (participation and annual hours worked) as a principal focus, more recent basic income projects have adopted a wider focus on the societal benefits and costs of a GAI. Careful consideration needs to be given to the topics that need to be studied, including both administrative issues and the diverse impacts of a GBI-PEI. A good starting point might be the topics examined in OBIP, along with a careful assessment of other recent basic income projects in the U.S., Europe and perhaps elsewhere.

One problem may be the limited documentation available from OBIP and the other basic income projects. While more information may be available offline and in archives, the online information seems very limited (Simpson, 2020).<sup>3</sup> OBIP, for example, simply provides the following list of outcomes: food security, stress and anxiety, mental health, health and healthcare usage, housing stability, education and training, and employment and labour market participation.<sup>4</sup> It is not clear what survey questions or administrative records might have been used, if any, before the demise of the project.

While analysis of the outcomes of the GBI-PEI will be important, evaluation of administrative issues should be given priority as well. While Mincome documentation such as the administrative review in Billet et al. (1979) may offer some useful ideas, taxation and other technology for the delivery of a GBI has evolved considerably since then. OBIP documentation on administrative matters, on the other hand, may be limited or inaccessible. Other recent basic income projects may provide some additional guidance (Pinto et al, 2021), but the best assessment of administrative issues and costs may lie in project evaluations in spheres beyond basic income.

An important administrative consideration will be program participation. One common criticism of a GBI delivered through the tax system has been that it misses an important group of poor individuals and families who do not file taxes. GBI-PEI should carefully track tax filing and program participation and compare it to levels and trends in the control group to determine whether the simplification of the transfer programs available to low-income families via the GBI increases tax filing rates. Related to this is the important issue of information about both the existence and details of the GBI program. There is a growing literature in economics indicating that many low-income individuals and families are not aware of the benefits they are eligible for and, if they are, may not understand the implications of various program structures (for example, reduction rates). Such information barriers may warrant an information intervention in terms of: 1) the existence of the program; 2) accessing the program (i.e., tax filing); and 3) program details (benefit amounts, reduction rates, etc.). This could be accomplished using a randomized information intervention within PEI in which some individuals/families receive information about the

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<sup>3</sup> The contrast is with the extensive documentation available for Mincome and online in the University of Manitoba Libraries Dataverse at <http://dataverse.lib.umanitoba.ca/dataverse/mincome> (Simpson, Mason and Godwin, 2017).

<sup>4</sup> <https://www.ontario.ca/page/ontario-basic-income-pilot>. A more detailed list can be found in the original project proposal from Segal (2016).

program (treatment), while others do not (control). This would permit a triple difference-in-differences analysis, in which researchers could examine the combined effect of the information treatment and GBI receipt separately from the GBI receipt on its own on a variety of outcomes (relative to residents in the control areas).

### **3. Data Collection and Program Evaluation**

A great deal of thought needs to be put into data collection and analysis. While surveys provided the main data source during the era of Mincome, development and analysis of administrative data has become popular more recently. OBIP appeared to be planning to rely on administrative data extensively, although a mixture of survey and administrative data might have been intended.

In both Mincome and OBIP, the Census was used to choose sites and develop samples. Given the suggested event-study difference-in-differences empirical approach above, however, an alternative source of data would be required in order to establish similar pre-trends in outcomes between PEI and the selected control areas outside of PEI. For example, if one is interested in examining the impact of the GBI on hours worked in the proposed framework, it would be necessary to compare average hours worked in PEI and the control areas using data from at least five years prior to the introduction and ensure that the trend in hours worked in the former is similar to that in the latter.<sup>5</sup> For income and health outcomes, it is possible to establish this prior to pilot implementation using confidential administrative data made available by Statistics Canada, including:

- 1) The Longitudinal Administrative Databank (LAD), which is comprised of a 20% sample of tax filers in Canada and contains information on income, taxes and socio-demographic information on each household member;
- 2) The Discharge Abstract Database (DAD), which contains the hospitalization records of all Canadians outside of Quebec;
- 3) The T1 Family Tax Files (T1FF), which contains tax information on all tax filers in Canada including socio-demographic characteristics;
- 4) The LAD linked to the DAD, in which Statistics Canada has linked the tax files of individuals selected for the LAD to hospitalization data.

It is possible to begin an immediate analysis of scoping potential control areas that have similar trends in the outcome of interest as tax data, labour force data and health data is all available up until and including 2022. It might also be possible to obtain access to provincial administrative data, particularly regarding information on social assistance or receipt of in-kind transfers. Such data would be incredibly valuable by allowing researchers to examine whether and how participation in these other programs changes following receipt of the GBI.

The above data are released on an annual basis. If monthly data on incomes and other variables are required to augment what is available from administrative data, then a monthly survey could have to be designed and administered. Modern online survey methods would reduce the cost and burden

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<sup>5</sup> Note that it is not necessary for the levels of the outcomes examined to be the same, as these will be differenced out in the analysis.

imposed by interviewer-to-person visits during Mincome. In addition, there are a number of existing monthly surveys administered by Statistics Canada that could potentially be used for the purposes of assessing outcomes such as food security, self-reported physical and mental health, household expenditures, and labour supply. These surveys include:

- 1) The Canadian Community Health Survey (food security and self-reported physical and mental health outcomes);
- 2) The Survey of Household Spending (expenditure outcomes);
- 3) The Labour Force Survey (labour market outcomes including extensive and intensive measures of participation).

One caveat of the monthly data available through Statistics Canada is that samples are relatively small compared to the administrative data and, more importantly, may not contain a sufficient number of respondents in the selected control areas. In this case, to ensure sufficient statistical power for the empirical analysis, it might be necessary to over-sample respondents in the control areas. In these data, due to the likely issue of limited sample sizes in the control areas, it would not be possible to examine parallel trends prior the GBI introduction at the country level, though this issue could be mitigated by examining these outcomes at the provincial level (for which there are precedents).

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