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Public Health and Government Preparations For Future Pandemics

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Abstract:

Substantial weaknesses in the preparation by public health authorities and governments increased the health and economic costs of the Covid-19 pandemic relative to what they would have been if pre-existing recommendations had been followed and a wider set of plans had been put into place. Therefore, we set forth recommendations for carrying out post-mortems on the Covid-19 experience, planning for future pandemics, and establishing transparent and accountable governance systems for ongoing implementations of pre-pandemic plans. These three areas are important in and of themselves, as well as for setting the groundwork for pandemic stress tests and wargames.

Keywords: Covid-19, economic policy, medical policy, pandemic models, lockdown.

JEL Codes: I18, H12, H51, H84, G21

1. Introduction

In an earlier paper (Longworth and Milne 2020a), we described substantial weaknesses in the preparation by public health authorities and governments for the Covid-19 pandemic. These weaknesses increased the health and economic costs of the pandemic relative to what they would have been if pre-existing recommendations had been followed and a wider set of plans had been put into place, including ones that would have better recognized the important interconnections between a pandemic, the overall effects on health of the population, and the economic consequences.

In this paper we set forth recommendations for carrying out post-mortems on the Covid-19 experience, planning for future pandemics, and establishing a transparency and accountability regime for ongoing implementation of all the elements of a pre-pandemic plan. These three areas are important in and of themselves, as well as for setting the groundwork for the pandemic stress tests and wargames recommended in Longworth and Milne (2020b).

In section 2 of this paper, we argue that, as the pandemic is coming to an end, each public health authority at the local and provincial/state level and each government at the provincial/state and national level should carry out post-mortems on why some previous plans were not put into place before and during the pandemic, what things were missing from those plans which should have been part of them, and what was learned that needs to be incorporated in plans for future pandemics. (These post-mortem reports would cover the types of weaknesses identified in Longworth and Milne (2020a) as well as many other weaknesses of both major and minor importance.) A process should be put into place so that misunderstandings across levels of governance (national, provincial/state, and regional/local) before and during the pandemic can be recognized in these reports. All post-mortems need to be transparent and made publicly available.

Section 3 of this paper argues that the short-comings identified in the post-mortems need to be taken into account in plans for pre-pandemic and pandemic actions. These plans need to be shared across levels of governance so that nothing falls between the cracks at the planning stage. A side-benefit of this planning is that some of it will be useful for broader public health readiness and economic readiness for other major shocks.

Section 4 of the paper takes a set of plans as given and argues for an appropriate governance system. It is not enough to have plans and recommendations coming out of exercises and wargames: it is too easy to have them written up and forgotten. They must be used to prepare for future emergencies. This requires a robust governance system that puts a high priority on transparency, accountability and the evaluation and enforcement of plans and accepted recommendations. Importantly, the evaluation needs to cover the following: the implementation of the official plan; the updating of the official plan arising from post-mortems, exercises, wargames, new findings, and new technology; and the training of staff and those involved in governance regarding the plan and its importance. In this section we discuss two examples of governance systems: the first is from the World Bank; and the second is from the IMF. We outline their basic goals, procedures and limitations. Drawing on these examples and reports of auditors-general, we set forth the key elements in an evaluation process. In the latter part of this section, we explore the limitations and possible reforms of such governance systems, as well as discussing some serious issues of organizational culture—inertia and obfuscation—and possible political corruption that can impede the governance system.

Section 5 briefly argues that having a set of plans which are transparent and for which institutions are accountable is a pre-condition to undertaking effective pandemic stress tests and wargames which should feed back into the improvement of plans and the planning process through time.

Overall, the purpose of the procedures set out in this paper is to deal appropriately with risks and to provide better outcomes for citizens.

2. Post-mortems as the Pandemic is Coming to an End

Typically, there would have been plans at regional/local health authorities, provincial/state authorities, and national authorities for pandemics. These plans would typically have had two components: preparation prior to the pandemic and what to do during the pandemic. It is important that at each of the three levels, post-mortems be carried out to see whether plans for preparations prior to the pandemic had been carried out, what other plans for preparations should have been made, whether the advance plans for actions during a pandemic had been carried out in a timely manner (and if not why) and what was learned that should be included in any future pandemic planning.

Those writing the post-mortems need to have sufficient independence that their views are not tarnished by those who failed to take planned actions before or during the pandemic. Although the post-mortems at the three levels of governance should be largely conducted independently, there needs to be consultations across levels on issues that are the responsibility of more than one level. Importantly, a process needs to be put in place so that misunderstandings and miscommunication across these levels both before and during the pandemic can be recognized in these reports. The purpose of these post-mortems is to improve the situation for the next pandemic, not to assign blame. All these post-mortems need to be specific about their recommendations, transparent about shortcomings, and made publicly available.

Depending on which level of governance is being considered, these post-mortems in the area of public health will need to deal with such topics as the presence, implementation, appropriateness, and effectiveness of:

- Past plans for sufficient availability of personal protective equipment (in the health-care sector writ large, long-term care homes, and for employees in other sectors), ventilators, other equipment, health-care workers and personal support workers, and hospital space
- Past conventions for updating plans, making them transparent, and ensuring that they are being followed before a pandemic
- Past clarity in federations or countries with regional health authorities of the role of the national government in providing additional personal protective equipment, ventilators, and other equipment
- Past plans (or options) regarding the closure of national or provincial/state borders to people
- Past plans to deal with identified operational risks such as: health-care and personal support workers being employed at more than one site, and laboratory capacity to process tests for a disease
- Past plans to ramp up testing and contact tracing capabilities quickly
- Past plans to collect comprehensive, comparable data on cases and deaths from a pandemic disease in a manner that is easily shared and aggregated
- Past plans to collect and quickly disseminate comparable data on all deaths by cause in a manner that is easily shared and aggregated

- Past plans taking into account the possible effects of public health restrictions on mental health and the health of those whose surgeries may be put off indefinitely
- Past plans giving guidance on the clarity of messages to the public
- Past plans considering the spread of communicable diseases in particular workplaces where workers work very closely with one another and in particular residences, such as long-term care homes, prisons, and migrant worker dormitories
- Past plans for the possible use of masks and their supply to the general public

Public health post-mortems will also have to identify other areas where there was insufficient planning before the pandemic, as well as where insufficient planning and decision-making was undertaken between the first and second (or further subsequent) waves. The way that evidence from other countries was taken into account during the pandemic in planning and decision-making should also be examined.

Importantly, new lessons from this pandemic about planning for future pandemics need to be noted.

A process should be established so that misunderstandings across levels of governments (national, provincial/state, and regional/local) can be recognized in these reports.

The teams performing the post mortems should exclude senior officials who were responsible for much of the implementation of pre-existing plans. They should include at least one senior person from outside the jurisdiction and (at the national and provincial/state level) at least one other senior person from another institution.

In addition to post-mortems in the public health area, provincial/state and national governments need to conduct post-mortems on what information and public policy preparation was missing, and what needs to go into planning for the next pandemic. Information would include: the input/output relationships among industries that could affect the transmission of lockdowns; the special surveys that should be commissioned from national statistical agencies and private polling companies during a pandemic; and the methods for dealing with transfer payments (including employment insurance), loans to firms and individuals, and subsidies to firms. Financial regulators should conduct post-mortems (both nationally and internationally) on the

appropriateness and effectiveness of various temporary changes in regulation or guidance during the pandemic—including those regarding foreclosures and delays in loan repayments.

All post mortems need to be thorough, transparent, and made publicly available. Provincial/state and national post mortems should be discussed in legislatures.

Learning from mistakes and unpreparedness in this pandemic is one of the major ways to prepare for the future. However, it must be recognized that no two pandemics will be the same.

3. Planning for Future Pandemics

Post-mortems are really only valuable to the extent that they lead to better planning and implementation in the future, both in the area of public health and the area of economic policy options.

It is clear that much has already been learned from the experience of the current pandemic, both from the evident gaps noted by many, including public health professionals themselves and journalists (see the examples in Longworth and Milne 2020a). As well, some post mortems have already begun, as in the three focussed ones by the Auditor-General of Ontario (2020), discussed in more detail in the next section.

Public health planning for future pandemics will, by its very nature, have two components: pre-pandemic planning and plans for actions that will need to take place during a pandemic itself.

Pre-pandemic planning will need to include, but not be restricted to:

- Keeping an up-to-date stock of personal protective equipment, ventilators and other equipment, extra hospital space, and laboratory capacity
- Putting into place and testing data systems which will allow data to be collected, rapidly disseminated, and shared in an analytic-friendly and research-friendly manner
- Establishing and implementing standards for the design of long-term care facilities, seniors' homes, migrant-worker housing, and housing for the currently homeless, and ensuring that are sufficient such facilities
- Providing adequate training regarding pandemic procedures and personal protective equipment for personal care workers and certain other health care workers

- Establishing norms for the extent to which personal care workers, nurses, and other health professionals can work in more than one location over the course of the week.

Plans for what is to be done in the public health domain during pandemics themselves will have to include most of the other specific areas set out in the discussion of post mortems in section 2 of this paper.

Plans in the economic policy action area will consist of both gathering necessary economic data prior to and during the pandemic, setting out and evaluating policy options—including importantly transfers to individuals, wage subsidies, other subsidies to firms, and loans to firms—that could be used in a pandemic. Any policy option that is evaluated as being a highly appropriate option should then lead to the construction of computer and other systems necessary to implement it.

All pandemic plans need to be shared across levels of governance so that nothing falls between the cracks at the planning stage. It is important to note that a side benefit of this planning is that some of it will be useful for broader public health readiness and economic readiness for other major shocks or potential policy changes. As one example, proponents of an extension of "basic income" have noted the need for appropriate computer and other systems to implement it.

4. Review and Accountability of Governance Systems

4.1 Introduction

It is not enough to have post-mortems, plans, exercises and wargames: it is too easy for these to be written up and ignored. The reports must be used in preparing for future emergencies. This requires a robust governance system that puts a high priority on transparency, accountability and enforcement of the plans and recommendations. In this section we discuss how public organizations provide oversight and/or audit their operations. There are a range of organizational models across countries and government organizations and agencies. Many countries have

government Auditors and/or have Inspector General departments who play these oversight roles.[1]

We will outline two examples of oversight systems: the first is from the World Bank and the second is from the International Monetary Fund (IMF). For the World Bank we outline their basic goals and procedures. Their oversight system provides a good guide of the issues that we wish to explore here.

The IMF has implemented a review system of their Evaluation process. The IMF review is important for it reveals how the results of evaluations (exercises or wargames) can be ignored, and not acted upon as a matter of course. This is very revealing in explaining bureaucratic impediments to action.

In the latter part of this section, we use the IMF's example to explore the limitations and possible reforms of the governance systems surrounding reviews (exercises or wargames); and discuss some serious issues of organizational culture, incompetence and political interference that can impede the governance of an oversight system.

In summary, it is important to recall that there are five things that need to be evaluated regularly:

1. The implementation of the official plan: are pre-pandemic actions on track and specified targets being met? What is the overall state of readiness?

2. Has the official plan incorporated recommendations from post-mortems, exercises and wargames?

3. As required by an agreed-upon updating schedule, has the official plan been updated to incorporate new scientific/medical findings and new technologies?

[1] For the USA see the U.S. Department of Justice Office of the Inspector General: https://oig.justice.gov/. For their ongoing oversight of the US policy response to the Covid-19 virus, see https://oig.justice.gov/coronavirus.

4. Are all senior staff and key personnel being trained in the content of relevant parts of the official plan and its importance?

5. Are those in governance roles (e.g., ministers) being trained about the key elements and importance of the plan?

4.2 The World Bank Evaluation Process

The World Bank has set out the basic principles of its evaluation process as follows:

"In line with international practices in evaluation, evaluations in the World Bank Group system should adhere to three core principles that can help ensure the quality and effectiveness of evaluation.

1. **Utility**. Evaluation utility refers to the relevance and timeliness of evaluation processes and findings to organizational learning, decision making, and accountability for results. Utility can be enhanced throughout the evaluation process by reflecting on what to evaluate, when, how, with whom, and for what purposes.

2. **Credibility** is a prerequisite for utility. Without careful monitoring, important data cannot be collected. The availability of good monitoring data is necessary for good evaluation.

3. **Evaluation independence** is in place when the evaluation process is free from undue political influence and organizational pressure. Independence can be achieved through various mechanisms. Structural independence is ensured when the evaluation function has its own budget, staffing, and work plan that are not subject to approval by World Bank Group Management but directly under the supervision of the Board of Executive Directors for each institution (hereafter referred to as the "Boards"). Functional independence refers to the ability of the unit managing the evaluation to decide on what to evaluate and how to go about the evaluation. Finally, behavioral independence implies professional integrity and absence of bias in the attitude and behavioral conduct of the evaluator."[2]

[2] See pages 4 and 5 in the World Bank document:

The document then goes on to elaborate on the procedures to implement these principles:

"The World Bank Group evaluation system refers to the different types of evaluations, processes, activities, actors, and roles and responsibilities regarding evaluation within and between the World Bank Group institutions. Evaluation structures within the World Bank Group institutions have evolved over time in line with each institution's requirements, business models, and clients. The World Bank Group distinguishes among three main evaluation modalities: independent evaluation, mandatory self-evaluation, and demand-driven self-evaluation.

1.Independent evaluation: A fully independent evaluation is carried out by entities that are structurally, functionally, and behaviorally independent from those responsible for the design and implementation of the intervention. In the World Bank Group, fully independent evaluations are conducted by IEG, which reports directly to the Boards. The emphasis is primarily on accountability and learning at the level of the Boards or their Committee on Development Effectiveness (CODE). In addition, independent evaluations support learning at the levels of Management and operations. The target audiences for independent evaluations are, therefore, the Boards, World Bank Group Management and staff, clients, and development partners, as appropriate. In addition, to different degrees independent evaluations also inform other actors such as (representatives of) beneficiaries and the general public.

2.Self-evaluation: Self-evaluations are conducted by operational staff or specific units within the management structures of the World Bank, IFC, and MIGA and are therefore not fully independent of World Bank Group Management. They are usually closely linked to decision making and organizational learning processes within each institution. Self-evaluations are also conducted for purposes of accountability to World Bank Group Management and/or development partners/investors. The target audiences for self-evaluations are primarily operational units, Management, clients, and development partners. In addition, to different degrees self-evaluations also inform other actors such as (representatives of) beneficiaries and

https://ieg.worldbankgroup.org/sites/default/files/Data/reports/WorldBankEvaluationPrinciples.pdf

the general public (see figure 2). There are two broad types of self-evaluation in the World Bank Group.

(a) Mandatory self-evaluation. At the core of the evaluation system across the World Bank Group are mandatory self-evaluations of specific lending operations, investments, guarantees, country programs, and advisory services. These evaluations are prepared by the responsible operational units and are embedded in the project and program cycles. They are neither structurally nor functionally independent, but the principle of behavioral independence applies. Behavioral independence is further strengthened by IEG's review and validation (sometimes on a sample basis). Mandatory self-evaluations complement the implementation and monitoring arrangements that are embedded in each institution's project and portfolio management processes. Self-evaluation adheres to methods and guidance that are jointly accepted by World Bank Group Management and IEG, with predetermined concepts, formats, and scope that are closely linked to the premises applied at the time of intervention approval and during reporting cycles. Aggregate analyses of (validated) self-evaluation reports enable cross-sectoral and cross-regional comparisons of performance as well as reporting at the corporate levels and to the Boards.

(b) Demand-driven self-evaluation: A variety of evaluation activities are undertaken in response to specific donor, client, or internal demands, or as an element of operational or research work—for example, retrospective studies of various products and instruments, trust fund evaluations, and impact evaluations to assess the impact of activities and interventions. Demand-driven self-evaluations are structurally embedded in managerial processes. However, they are often either conducted, managed, or commissioned from external consultants by functionally independent units within the institution. In addition, the principle of behavioral independence applies." [3]

This detailed outline of the World Bank evaluation activities provides a good guide for the type of evaluation processes in many other organizations. But in the next subsection, we will discuss the IMF's review of their own evaluation system – and find it wanting.

[3] See pages 5-7 in the World Bank document: https://ieg.worldbankgroup.org/sites/default/files/Data/reports/WorldBankEvaluationPrinciples.pdf

4.3 The IMF's Review of its Evaluation Process[4]

The IMF created an Independent Evaluation Office (IEO) that has been in operation for many years.[5] The IEOs' purpose is summarised in the following paragraph:

The Independent Evaluation Office (IEO) has been established to systematically conduct objective and independent evaluations on issues, and on the basis of criteria, of relevance to the mandate of the Fund. It is intended to serve as a means to enhance the learning culture within the Fund, strengthen the Fund's external credibility, and support the Executive Board's institutional governance and oversight responsibilities. IEO has been designed to complement the review and evaluation work within the Fund and should, therefore, improve the institution's ability to draw lessons from its experience and more quickly integrate improvements into its future work.

The IEO's purpose is similar to the World Bank's evaluation process – and many evaluation bodies attached to large private and public organizations. Although the details may vary across organizations, we will concentrate on the effectiveness of this type of review body in improving the operations of the main organization.

What is novel is that the IMF has been running periodic reviews of the IEO and its impact on the operations of the IMF. In the 2018 review. The findings are summarised below: [6]

The IEO has too little impact in the Fund :

The Panel's main conclusion is that there is a lack of traction of the work of the IEO – surveys of country authorities and the IMF Executive Board reveal substantial goodwill towards the IEO

[4] This section draws upon the 2018 IMF document "Time for a reboot at a critical time for multilateralism: The Third External Evaluation of the IEO".
https://www.imf.org/en/News/Articles/2018/07/17/pr18296imf-executive-board-considers-external-evaluation-of-the-independent-evaluation-office
[5] For the IEO's terms of reference, see https://ieo.imf.org/en/our-mandate/Terms-of-Reference
[6] This is an extract from the Executive Summary:
https://www.imf.org/en/News/Articles/2018/07/17/pr18296imf-executive-board-considers-external-evaluation-of-the-independent-evaluation-office

but a subdued rating of its impact. The lack of traction in a broad sense cannot be attributed to a single factor or stakeholder; the Panel believes there has been a missed opportunity for the Board, management and staff, and for the IEO itself. The Board has missed the opportunity to effectively use the IEO as an oversight and governance tool, and management as a learning channel.

The IEO can play an important role in promoting accountability and learning, and thereby also the credibility of the IMF. In order to do so, the IEO has to be more than a watchdog, it has to be an effective change agent. Notwithstanding the credibility that the IEO has built up, the Panel finds that there is more to be done for independent evaluation to fully contribute to the success of the IMF.

The context the IEO operates in has changed:

Since its creation seventeen years ago, the IEO has firmly cemented its independence, both substantive and perceived; it has built up a body of credible evaluations and an external reputation as the Fund's watchdog; and support among the membership and the Executive Board for its mandate remains high. At the same time, the IEO of today operates in quite a different environment than that of seventeen years ago when it was established.

The IMF has changed; it has become much more transparent and it is easier for the outside world to scrutinize its work. It has also demonstrated an ability to learn from its experiences and made significant changes to its surveillance and lending toolkit following the Global Financial Crisis. This has raised the bar for the IEO.

The Fund is now also facing new challenges. The global community is at a critical juncture for multilateral cooperation at a time of weakening trust in both domestic and international institutions. Political support for institutions like the IMF cannot be taken for granted. Trust is a variable that needs maintenance in order to be a constant. It is therefore critically important for the IMF to strengthen the trust among its diverse membership. Mechanisms of governance and accountability should be reinforced. More than ever, the IMF needs to demonstrate that it is open to look at itself critically, hear different views, and to learn from them.

The IEO risks becoming "routinized and bureaucratized":

A survey conducted of IMF staff reveals low awareness of the IEO's work, and interviews with senior staff generally report little learning value or relevance in IEO reports (with some exceptions). The large number of management actions in response to Board-endorsed recommendations with delayed implementation also suggest a low level of ownership. There is a real risk, therefore, of the independent evaluation process becoming "routinized and bureaucratized"… Learning is not embedded into the organization. Change is only at the level of measured activity – and even on this, the record shows substantial delays in implementation.

…..

The root causes of the lack of traction are three-fold:

The Board has not consistently demonstrated to management and the IEO the importance it attaches to independent evaluation. After discussing IEO recommendations, the Board has not given sufficient attention to the progress in implementation and has not adequately held management and staff to account for poor implementation progress.

Management has not instilled the importance and value of the IEO's work in the IMF's senior staff, nor given incentives to shape desired behavior. As a result, amidst a high workload, staff has typically not accorded high priority to learning from IEO reports (with some exceptions).

The IEO has not engaged sufficiently with management and staff at each stage of the evaluation to ensure understanding of each other's viewpoints so that the learning value of the evaluation can be maximized. There have been improvements recently, but the IEO has not done enough to "sell" its work and messages. How the evaluation topics are eventually selected is not transparent enough, and reports tend to be too long without enough demonstration of how the proposed solutions are practical and actionable. There is also a "key person risk" at work, in that the IEO's engagement is not sufficiently institutionalized and varies with the personal approach of the Director of the IEO.

Although this critique deals specifically with the operations of the IEO, the failures are common to many review systems in large organizations. The lessons we can draw from this report are similar in substance to the lack of serious responses to pandemic exercises (wargames) that we

explored in an earlier paper.[7] There were no serious reforms when these exercises revealed major deficiencies. Nor were there major adverse consequences for bureaucratic and political leadership when they failed to implement reforms. The review process fails if the lessons are not learned and acted upon. As we have observed in the Covid pandemic, the health, economic and social costs are very high when there is a lack of adequate preparation.

4.4 A Covid-19 Public Policy Case Study: The Ontario Auditor General's Report[8]

In November 2020 the Ontario Auditor General (OAG) reported on the Provinces' response to the Covid-19 pandemic, its planning, the effectiveness of its case management and contact tracing. The reports make lamentable reading. This summary of their findings is reproduced from the OAG news release.[9]

Detailed Findings:

• Ontario's command structure evolved to become overly cumbersome, and it was not dominated by public health expertise. The Chief Medical Officer of Health and other public health officials did not lead Ontario's response to COVID-19. Ontario's COVID-19 response structure included a Health Command Table that took on an increasingly complex structure during the pandemic and had grown from 21 members to 83 participants by August. For months, all communications were by teleconference, which created confusion. It was not until July 14 that meetings began to be held by videoconference, meetings were not held in person, and there is no fulsome documentation of the discussions that took place. In total, more than 500 people are now involved in the Health Command Table.

• Given the significant changeover in leadership in Ontario's Provincial Emergency Management Office (EMO), outdated emergency plans and the lack of sufficient staff, the province was not in

[7] See Longworth and Milne (2020) "Covid-19 and the Lack of Public Health and Government Preparation", QED WP No.1436, https://www.econ.queensu.ca/sites/econ.queensu.ca/files/wpaper/qed_wp_1436.pdf
[8] These reports can be accessed at: https://www.auditor.on.ca/en/content/news/news.html#2020
[9] https://www.auditor.on.ca/en/content/news/specials_newsreleases/newsrelease_COVID-19.pdf

a good position to implement the provincial response structure in its provincial emergency response plan when the province declared an emergency on March 17, 2020. It responded by hiring an external consultant to create a new governance structure, based on the belief that there was a need to create a whole-of-government approach. This approach took time, with a Central Co-ordination Table being established that held its first meeting almost a month into the emergency, on April 11, 2020. In contrast to Ontario, other provinces activated their existing response structures and emergency plans. As well, we found that when we completed our work, the EMO had still not undertaken detailed planning or worked with municipalities to plan for subsequent waves of the pandemic.

• We found that key lessons identified in the aftermath of the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 had not been implemented by the time COVID-19 hit Ontario and were not followed during Ontario's COVID-19 response. For example, the SARS Commission's final report identified the precautionary principle—taking preventative measures to protect the public's health even in the absence of complete information and scientific certainty—as the most important lesson of SARS. Following this principle means taking decisive action early. This is not what we saw in our audit work; instead, we saw delays and confusion in decision-making.

• The Chief Medical Officer of Health did not fully exercise his powers under the Health Protection and Promotion Act to respond to COVID-19. He did not issue directives to local Medical Officers of Health to ensure public health units responded consistently to the COVID-19 pandemic, nor did he issue directives on their behalf. In May 2020, 34 local Medical Officers of Health jointly prepared and signed a document stating there needed to be more direction and regional consistency. For instance, it was the province, not the Chief Medical Officer, that finally issued an emergency order in early October 2020 to require masking for the general public.

• Public Health Ontario played a diminished role in the overall provincial response, and even regional response structures were generally not led by public health experts. Some tasks that typically would have been Public Health Ontario's responsibility were done by Ontario Health instead, such as reporting provincial surveillance data to the Health Command Table and co-ordinating provincial laboratory testing for COVID-19. Local Medical Officers of Health

informed us that they were confused by provincial politicians delivering critical public health advice in place of the Chief Medical Officer of Health.

• Variations in management and operations among public health units contributed to fragmentation and inconsistencies across Ontario. Public health in other jurisdictions, such as British Columbia, Alberta and Quebec, is more simply organized. Public health reform recommended about 15 years ago by the SARS Commission had not been fully acted on. As of the writing of this report, Ontario's 34 public health units were still operating independently, and best practices were still often not being shared.

• The Ministry of the Solicitor General did not implement our recommendations from three years ago to regularly update and finalize its emergency response plans. As well, the Ministry of Health had not acted on recommendations in our 2003, 2007, 2014 and 2017 audits to address the weaknesses in public health lab and information systems. This had negatively impacted the work of public health units during COV-ID-19. Information systems now in use have limited functionality for case management and contact tracing. Also, the Ministry of Health did not make the improvements needed in its fragmented management of the laboratory sector. Laboratory testing still follows a substantially manual, paper-based process, and the laboratory information system is not integrated with the public health information system.

• Ontario did not contact all travellers entering the province due to a lack of dedicated resources and the inability to receive accurate, complete and timely information from the federal government. Between April and August 2020, about 2.5 million international travellers entered Ontario. Approximately 9%, or 233,000, of them were reported to Ontario.

These failings are not uncommon in other Provinces, States or countries. There are some jurisdictions that have performed much better in being prepared, moving swiftly to implement policy actions that carefully balanced health, social and economic factors. Nevertheless, the OAG report demonstrates that even when lessons were documented and reforms recommended, Ontario Liberal and Conservative governments had ignored the recommendations made in the OAG's 2003, 2007, 2014 and 2017 audits.

4.5 The Key Elements in an Evaluation Process

From the previous discussion, we can summarize the key elements in an evaluation process.

(a) An evaluation process should occur on a preset date, to avoid tardiness and other excuses for inaction.

(b) The evaluation should be carried out by an independent body that includes personnel with who are competent with the latest techniques.

(c) The reports should be readily available with significant penalties for attempts to muzzle the evaluation.

(d)The reports should include a list of recommendations for improvement.

(e) Within a fixed time, there should be a follow-up report investigating whether the recommendations were acted upon.

(f) Failure to remedy failures and implement recommendations should trigger significant penalties on senior management.

4.6 Bureaucratic and Political Impediments in the Evaluation/Reform Process

As we observed in our previous discussion, bureaucratic inertia and/or poor organizational design can frustrate implementation of recommendations. A potentially more dangerous problem is deliberate bureaucratic and/or political obfuscation that frustrate reforms in an attempt to shift blame for failures in a crisis. And finally a pandemic, with poor preparation and rushed policies, can be exploited by the unscrupulous in the private and public sectors for financial, political or bureaucratic advantage. We will explore all three problems.

4.6.1 Bureaucratic Inertia and Poor Organizational Design

Our discussion in section 4.4 provides examples of organization inertia where reviews and suggested reforms have been placed on low priority, or ignored. This may be because not from any desire to avoid issues, but because the reforms were placed on a lower priority due to more pressing demands. It is tempting to ignore or downplay low-frequency, high-cost events by arguing that they will not happen in the foreseeable future.

The way to combat this response is to enforce reform with penalties, unless there are deep reservations about the suggested reforms. But the reservations should be included in the review process so there is no benign neglect.

4.6.2 Deliberate Bureaucratic and Political Obfuscation

This impediment is potentially far more dangerous and costly. Given a pandemic or major event, there will be examples of failures that can be detected with hindsight. A well-functioning organization will prepare the political and media systems for possible failures given the inherent uncertainties of new pandemics. The correct approach is to admit uncertainties as they unfold, explaining any errors as they occur, including prompt remedial actions.

The worst response is to not admit errors, abuse honest critics and try to cover up failure. This is not a sensible long-term strategy as invariably with investigative reporters, leaks, etc. the truth will out. Then officialdom and their political masters compound error with lying. This destroys public trust which is difficult to remedy.

4.6.3 Case Study of Political and Bureaucratic Failure and Obfuscation[10]

In Australia, the State government of Victoria has presided over a Covid policy and implementation crisis. The facts are these:

1. Until June 2020, Australia through rigorous quarantine and border entry restrictions had very limited Covid infections and deaths.[11]
2. The Australian Federal government had offered all the states defense personnel to act as hotel security for international arrivals. The Victorian state government declined the offer.
3. The Victorian state government in a hurried decision, employed a private security firm to act as security personnel in the Melbourne quarantine hotels. The security firm was not

[10] Some of the material in this case study is taken from the following media sources: https://www.theguardian.com/australia-news/2020/nov/06/victorian-hotel-quarantine-inquiry-calls-for-police-to-be-on-site-24-hours-a-day https://www.youtube.com/watch?v=QKxrfVYOfzI&list=PL2OFHLSeLxlbGzt7FOq8P2SE9GJajLYKh

[11] See https://www.worldometers.info/coronavirus/country/australia/

on the prescribed list and a subsequent inquiry could not determine who made this decision.[12]

4. Subsequently some arrivals infected the private security personnel, who in turn infected Melbourne citizens. There were allegations that the security firm employees had minimal training for their quarantine security tasks.

5. A Victorian COVID-19 hotel quarantine inquiry has observed in November 2020 that 99% of the more than 20,000 Covid-19 cases and over 800 deaths related to Covid-19 in Victoria since late May could be traced back to the outbreaks among staff and security guards at the hotels. By December 2020, Australia had just over 900 deaths, with 820 in Victoria. Nearly all Victorian infections and deaths were in the greater Melbourne region.[13]

6. An additional failing was the lack of adequate preparation in aged-care homes. By mid-June there was ample evidence that aged-care homes were major risk centres for Covid infections. The existing structure was a tragedy waiting to happen.[14]

7. Subsequent media investigations alleged that the state government did not follow due process in hiring the security firm. A senior bureaucrat and a minister resigned. The Premier of the state denied responsibility, although there are strong allegations that he dominates government administration.

8. The State government imposed a very restrictive lockdown in Melbourne. The economic and social damage to the state has been extremely serious. The state has had its debt rating downgraded.[15]

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[12] There has been a Victorian COVID-19 hotel quarantine inquiry that reported late December 2020. See: https://www.parliament.vic.gov.au/file_uploads/0387_RC_Covid-19_Final_Report_Volume_1_v21_Digital_77QpLQH8.pdf

[13] See https://covidlive.com.au/states-and-territories and https://covidlive.com.au/vic/postcode

[14] See the discussion in the Lancet. https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2932206-6

[15] See https://www.abc.net.au/news/2020-12-07/victoria-loses-its-aaa-credit-rating-after-s&p-downgrades-state/12957626

To summarize: this disaster showed serious policy and implementation errors, bordering on incompetence. The Premier has denied responsibility, even though the evidence suggests that he played a central role in the decision-making.

4.6.4: Political and Bureaucratic Corruption [16]

Whenever there are major government decisions that require large increases in expenditure and procurement, there are increased incentives for political and bureaucratic corruption. These incentives are magnified when policies are introduced in haste, and the usual safeguards and protocols are under stress. There may be good reasons why protocols that are appropriate for normal times cannot be followed because the risk of the costs of waiting to procure needed equipment or to make decisions based on the timelines implicit in normal protocols outweighs the risk of not making the best decision (when viewed ex post).

These implications of any major crisis that involves hurried large increases in expenditure should be anticipated. A pandemic is just an example of a major crisis. As the Covid crisis finally comes under control, and the costs are counted in health, social and economic consequences, there will be increasing allegations of corruption at various levels. For example, financial support to firms or workers can be misdirected either because they have been rolled out in haste, or exploited using loopholes, or are straight out fraud. In some jurisdictions where political corruption is more common, a crisis provides opportunities for large-scale fraud and embezzlement. Jurisdictions with high quality audits should reveal the extent of these costs

To reduce the costs of excess public expenditure, due to fraud and related activities, planning and exercises simulating crises should include protocols and procedures that reduce these costs Clearly effective legal and bureaucratic procedures are of great importance. We will include a reference to these recommendations in our next section, which outlines the use of wargames and exercises for pandemics.

5. Pandemic Exercises and Wargames:

[16] This section draws upon: https://images.transparencycdn.org/images/Getting-ahead-of-the-curve.pdf, and https://www.transparency.org/en/press/open-letter-to-the-g20-finance-ministers

Having the type of plans discussed in section 3 combined with the transparency and accountability discussed in section 4 is a pre-condition for undertaking effective stress tests and wargames. Those exercises can then feed back to improve both the plans and the planning process over time. In Longworth Milne (2020b) we provide a detailed discussion of how stress tests and wargames are valuable means of preparing for pandemics. Here we summarize the conclusions of that paper.

There has been a clear lack of preparation by many countries in dealing with the Covid-19 virus epidemic. The resultant economic and social costs have been very large. Policy decisions were taken under considerable uncertainty about the virulence and lethality of the virus. The consequences of this uncertainty could have been reduced by playing wargames so that policy makers were better prepared.

Although pandemic war games had been played in the past, and reports on previous pandemics prepared, in most cases there appears to have been little action taken to implement lessons learned, or the creation of effective and cost-efficient responses. We have argued that preparation for pandemic and other major exogenous events will require regular wargames. Previous exercises have been too limited, and have not taken into account very important social, economic, financial and fiscal factors that have become apparent in the current crisis. These games or exercises should include medical, social, political, economic and financial components that prepare various agents in these sectors for a major systemic event. Coordination and cooperation in these sectors are critical in managing a crisis.

The results of these exercises should be available publicly for critical examination by experts in associated fields. Open debate and analysis are crucial for drawing conclusions – especially for preparing realistic, future wargames and analysis. The results from wargames should be summarized by an independent group. The group charged with evaluations (as discussed in section 4 of this paper) should review actions taken from recommendations in the game summary. That review should take place within a year while the analysis is still fresh in the minds of the participants. Lack of action should be reported publicly. The greatest danger is that bureaucratic lethargy, turnover of experienced players, etc. can blunt the lessons and dilute future preparation. As time passes, history is forgotten, and the crises are neglected - until another crisis arises with its panicked, costly response.

One important role of wargames is to train individuals and organizations to prepare them for emergencies. This educative process must be conducted regularly to avoid loss of corporate and organizational memory.

Authorities should explore appropriate public communication strategies to reduce confusion and panic. Political leaders need to understand the crucial role of managing uncertainty and the importance of public communication to avoid panic and nefarious activities which exploit weakness and fear.