



**SCENARIO PLANNING
GUIDEBOOK:
AN ILLUSTRATIVE EXAMPLE
FROM THE COVID-19
PANDEMIC**

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Introduction

Throughout history, scenario planning has been used as a mechanism to plan during highly uncertain times. Our current project utilizes this tool amid the COVID-19 pandemic, by identifying two uncertainties – vaccination uptake and the possibility of variants evading vaccines – to prepare for best and worst case pandemic scenarios.



History of Scenario Planning

Scenario planning is an adaptive organizational framework used to adapt strategy for the future during times of high uncertainty. Scenario planning strategy dates back to the 1940s, when the American game theorist Herman Kahn worked as a defense analyst for Rand Corporation to plan for the many possible scenarios in which nuclear weapons could be used against the United States by hostile nations (Kleiner, 2003; Wilkinson & Kupers, 2013). Kahn's strategy was described as "thinking the unthinkable," (Kahn, 1962) and gained popularity throughout the oil industry and global politics into the 1960s (Kleiner, 2003). Largely due to its popularity at Shell Oil and other corporations throughout the Twentieth Century, scenario planning remains popular in the private sector today, with a 2011 survey showing that 65% of companies expected to use scenario planning that year (Rigby & Bilodeau, 2011; Wilkinson & Kupers, 2013).

Scenario Planning Today

Although scenario planning is popular in the private sector (Kleiner, 2003; Rigby & Bilodeau, 2011; Wilkinson & Kupers, 2013), this planning strategy has broad implications for researchers, policymakers, clinicians, and stakeholders. For example, scenario planning has been used by these groups to plan for and adapt to a range of uncertain scenarios, such as the impacts of climate change (Flynn et al., 2018), natural disasters (Moats et al., 2008), and navigating complex medical prognoses (Schwarze & Taylor, 2017). The strategy is useful for uncertain situations because it allows people to plan for various outcomes using an "if all goes well, this is what is likely to follow, and if things go poorly, this is what we can expect" (Schwarze & Taylor, 2017) framework and adapt to each scenario accordingly in real-time.

To begin scenario planning, a group will develop a list of important uncertainties that could affect the situation of interest. Next, they focus their planning on a small number of critical uncertainties (most commonly, two) that are anticipated to have the greatest impact on the situation of interest. This stage of narrowing down the list of uncertainties can be driven by internal knowledge within the organization, feedback from stakeholders, or existing research on the topic.

Table 1. Scenario Planning Checklist

<input type="checkbox"/> 1. Identify important uncertainties	Think of the uncertainties associated with your situation of interest that you would like to strategically plan for.
<input type="checkbox"/> 2. Select two critical uncertainties	Choose the two critical uncertainties you consider most consequential to your situation of interest. You will use these to create your scenarios.
<input type="checkbox"/> 3. Develop four possible scenarios	Based on your two critical uncertainties, draw a 2 x 2 matrix of the four possible scenarios that could result if each of your critical uncertainties goes well or poorly.
<input type="checkbox"/> 4. Develop plans for each scenario	Strategically plan for each of the four scenarios. This will allow your organization to pivot rapidly as the scenario changes.
<input type="checkbox"/> 5. Monitor likely scenarios	Monitor your situation of interest and adjust your strategy accordingly.

Scenario Planning During the COVID-19 Pandemic

Despite great advances in COVID-19 research since the beginning of the pandemic (Saleska & Choi, 2021), the future of the virus' impact remains highly uncertain (Brooks et al., 2020).

Scenario planning can be particularly helpful for researchers, policymakers, and practitioners during the pandemic. The COVID-19 pandemic has impacted researchers as the pandemic required that they rapidly adjust their planned studies to switch between in-person and remote



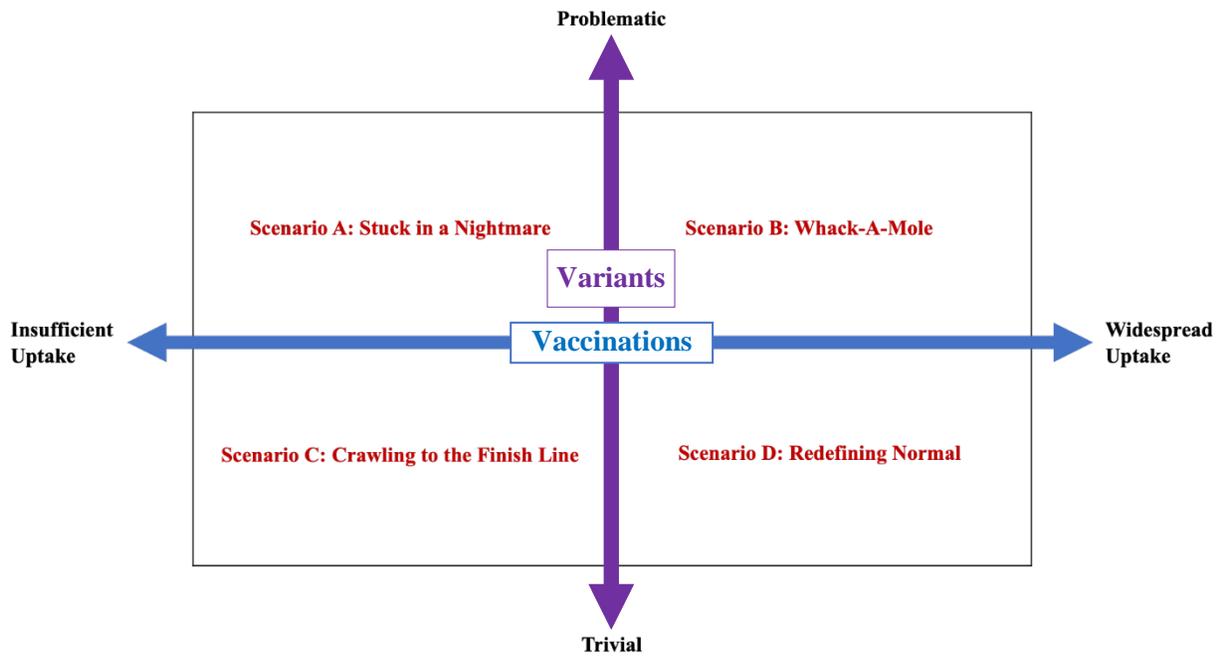
modalities and communicate changes with participants and/or research staff (Lumeng et al., 2020). Researchers can use scenario planning to anticipate how their procedures and research objectives may be modified strategically as the circumstances of the pandemic change and avoid confusion as circumstances rapidly shift. Policymakers can use scenario planning to allocate funds effectively as pandemic circumstances change and ensure that those seeking funding account for the uncertainty of the pandemic in their proposed research. Practitioners can use scenario planning for risk management throughout the pandemic by developing contingency plans in conjunction with stakeholders.

Scenario Planning: An Illustrative Example

In May 2021, we relied on a poll of local stakeholders as well as epidemiologist ratings (Cain Miller, 2021) to identify two near-term critical uncertainties of the pandemic most relevant to the project period: vaccination uptake and the potential for variants that evade vaccines. We used these two critical uncertainties to make a 2 x 2 matrix of plausible scenarios - if each uncertainty went well (high vaccination uptake and variants that are not able to evade vaccines) or poorly (low vaccination uptake and variants that are able to evade vaccines). Within this matrix, we named, described, and examined the potential implications of each scenario for the proposed project (Figure 1). The process was useful for involving stakeholders and imagining how the focus of the research might shift under different pandemic scenarios. For example, under the best-case scenario (Scenario D), the project would focus on addressing pandemic outcomes like the longitudinal impact of long COVID. Under a worst-case scenario (Scenario A), the project would focus on more acute stressors, such as mitigation techniques, anxiety, and timely diagnosis. Other projects can use scenario planning to envision how their projects would

change under different circumstances of the pandemic or in response to other major uncertainties.

Figure 1. Scenario Planning



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