Strategic Planning for Border Security

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Thank you, Chairmen Buschon and Broun and Ranking Members Lipinski and Maffei, for the opportunity to testify today on the strategic planning and technology dimensions of land, air and sea border security.

As part of my job at RAND, I run one of five studies and analysis Federally Funded Research and Development Centers (FFRDCs) for the Department of Defense. These FFRDCs help the Secretary of Defense and other senior leaders address key policy challenges.

In this capacity, we routinely use performance measurement and modeling to provide decisionmakers with policy insights and options. For example, if the Secretary of Defense wanted to add a major new weapon system, we would help identify the most cost-effective set of requirements by using well developed models to estimate the effects on mission and cost as performance on different dimensions is varied. The Secretary of Defense also typically has sophisticated combat models at his disposal to help understand how the equipment will perform in operational situations.

We also use modeling and simulation at a more tactical level. For example, we can employ campaign models to help the Secretary to determine the best mix of weapon systems and forces to execute a major contingency operation or to estimate how outcomes would likely change with the introduction of new technologies, new operational concepts, or larger forces.

But now let's turn to our nation's analytic capability in the border security arena. What if Secretary Johnson wanted to know the effectiveness of adding 10,000 Border Patrol agents, or

wanted to know the impact of a proposed border detection and surveillance system? We simply do not have all of the information and analytic tools in place to address these kinds of questions about the border.

It was these kinds of questions that I had in mind when I testified before House Homeland Security Committee's Subcommittees on Economic Security, Infrastructure Protection and Cybersecurity and Emergency Preparedness, Science and Technology at a field hearing in Washington State on August 8, 2006. In my testimony I noted:

> *"If there is an overarching theme to this testimony, it is that we have woefully underinvested in developing, evaluating, and refining a comprehensive and integrated border security strategy. We have invested in numerous border security programs and initiatives but the impacts and cost effectiveness of virtually all of these initiatives are poorly understood. We are virtually flying blind on a topic of critical national importance."*

Almost exactly eight years later, we are still struggling with some of these issues.

So, let me try to say it in a different way. We need investment in the basic policy science of homeland security. We need a strategy, data and technology infrastructure that lets us accomplish three things:

- Accurately and confidently measure and track the extent of relevant border activity, including illegal crossing activity and smuggling.
- Integrate that measurement and tracking data into frameworks that can be used to assess the effectiveness of border control policies.
- Integrate knowledge about effective border control policies into frameworks that help us understand the broader economic effects of border control.

Over the last decade, we have increased considerably the resources for border control with very little regard for the return on investment. Continuing the current investment patterns will be costly and provide progressively lower returns on investment.

Let me turn now to provide more detail on how we can get smarter about where to invest.

Measurement and Data Infrastructure

Effective border control begins with understanding why and how people cross the border. For purposes of the testimony today, I want to distinguish three different types of illegal border crossings.[4]

First are those crossings that are motivated principally the opportunity for a path to a better life in the U.S., often through the economic opportunity of working here, and more recently represented by the surge of children at the southern border. Second are those crossings that are primarily motivated by another kind of economic opportunity, that which comes from smuggling contraband across the border. Finally, the third kind of illegal border crossing is one that is intended to support terrorist activity. Research on individuals apprehended at the border reveals that economic opportunity is a primary motivation for illegal border crossings.[5] Indeed, more than two-thirds of the apprehended border crossers reported that economic opportunity was the primary reason for repeated attempts to cross the border.

The same policies do not necessarily work well against each type of motivation. Migration motivated by economic opportunity, for example, may best be controlled by a combination of border deterrence and labor market enforcement programs. In contrast, smuggling-related border crossings may be best addressed by deterrence and technological detection. Terrorism-related border crossings will demand yet another mix of policies.

We have the capability to estimate these different types of attempts at illegal border crossings. Among the approaches that are promising are:[6]

- **Capture-recapture methods**. These methods focus on the elapsed time between border apprehensions. The methods can be augmented by interviews with apprehended crossers to both understand crossing histories as well as intentions for the future.
- **Stratified sampling of border segments**. In this approach, the land border could be divided into low, medium and high risk zones, with enforcement resources allocated

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[4] While there may be other motivations for illegal border crossings – such as family reunifications and flight from persecution – these three kinds of illegal border crossings comprise the bulk of illegal border crossings.
[5] Mark Grimes, Elyse Golub, Alexandra Durcikova, and Jay Nunamaker, "Reasons and Resolve to Cross the Line: A Post-Apprehension Survey of Unauthorized Immigrants along the U.S.-Mexican Border," National Center for Border Security and Immigration, University of Arizona, May 2013.
[6] Andrew R. Morral, Henry H. Willis and Peter Brownell, "Measuring Illegal Border Crossing Between Ports of Entry", RAND 2011.

based on risk. Crossing estimates can then be constructed by weighting apprehensions with enforcement intensity.

- **Population surveys.** One promising method is based on interviewing migrants about their crossing intentions as they pass through towns and choke points on the southern side of the border. A second is to start with a non-random sample of migrants in the US and, through networking or "snowballing," build a larger, more representative sample.
- **Synthetic and proxy measures**. Examples in this category include building estimates from visa overstays and extrapolating from changes in the cost of coyote (human smuggling) services.

However, as far as I can tell, these estimation methods have not been formally adopted, and to the extent they have been examined, they have not received sustained or sufficient support for continued development and refinement.

The first two methods – capture-recapture and stratified sampling – are especially relevant to smuggled goods. However, other than Office of National Drug Control Policy efforts to estimate illicit narcotic flows, I am not aware of any systematic effort to estimate other contraband over borders. In other words, a similar type of accounting framework needs to be built for contraband. That is, we need long-term data on how people attempt to smuggle goods over land borders and through other ports of entry.

Resource Allocation, Program Effectiveness and Adaptive Behavior

Once this foundation of data and information is established, the data can then be combined into models – mathematical representations – of how the border and border control policies work.

The types of questions we can answer once we have the data and models are:

- Should we do more of something?
- What policies or technologies can we substitute for approaches that are not working especially well?
- How do adversaries – particularly smugglers and terrorists – adapt their behavior to policy changes?

Recall the dilemma I posed for Secretary Johnson at the beginning of this testimony: how effective would it be to add 10,000 additional Border Patrol agents? Using the kind of data I

sketched out in the first section, we could not only assess the effectiveness of 10,000 additional agents, but give guidance on where and how to deploy them.[7]

Relatedly, machines and other instruments are often good substitutes for, or good complements to, people. A motion sensor, for example, might be better than having a person stand on guard duty. Night vision goggles, in contrast, might increase the effectiveness of people serving on guard duty. Again, using data and different modeling methods, we could make better decisions about when to use people, when to substitute technology, and when to use them together.

We know smugglers adapt their strategies to border security measures. One such example is the proliferation of tunnels under the U.S.-Mexican border. Another is the shift to small submarines. But, with better data, we might be better able to *predict* how behavior might adapt. At a minimum, we would likely detect the changes earlier in the adaptation cycle.

Finally, we tend to treat the different border types – air, land and sea – separately and discretely and this is likely a mistake. There is potentially tremendous value in integrating our understanding of how these borders interact. For example, greater stringency in detecting illicit cargo coming through ports may increase the incentives to use land smuggling routes.

By way of comparison, we as a nation fund such basic science data collection in many other policy realms including substance abuse (National Household Survey on Drug Abuse; Monitoring the Future; etc.). Twenty years ago, RAND used these data sources to model the cost-effectiveness of various interventions against illegal drugs, including source country control, border interdiction, domestic enforcement and treatment of heavy users. The insights that came from this work – namely that dollar for dollar treatment and prevention are more cost effective – would not have been possible without the data infrastructure and the modeling.

Understanding the Broader Economic and Social Implications of Border Control

Because our borders are so vital to commerce and the economy, policies implemented for border control purposes can propagate throughout the economy in unanticipated ways. Thus, it is not sufficient to know only whether a policy is effective at the narrow issue of border control. In many cases, we have to know something about a policy's broader economic and social effects before we can implement a policy with confidence.

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[7] Joel B. Predd, Henry H. Willis, Claude Messan Setodji and Chuck Stelzner, Using Pattern Analysis and Systematic Randomness to Allocate U.S. Border Security Resources, RAND, 2012 is a recent report on using modeling to guide resource allocation.

Consider some examples.

Sometimes the effects of border control policies are relatively diffuse and difficult to document. The scale and complexity of US ports provides an example. Each year, approximately $500 billion of goods enter and $200 billion exit the United States through ports. Among this is cargo that is perishable, goods that are critical inputs into manufacturing processes, and seasonal materials that have limited periods of retail relevance. Thus, changes to the intensity, cost and speed of cargo security inspections can have broad and highly dispersed effects.

In other cases, the consequences of border control may be difficult to detect. For example, visas became a target for reform in part because all 19 of the terrorists involved in the 9/11 attacks were in the United States on legitimate visas. Residents of many countries can travel to the United States without obtaining a visa, but those traveling from other nations, such as Pakistan, Saudi Arabia, and Yemen, must obtain one by providing extensive documentation (of the individual and, in some cases, family members, business associates, and the sponsor) that is investigated using homeland security, intelligence, and law enforcement databases and resources, and undergoing an in-person consular interview. By making it harder to come to the United States, we deter not only terrorists but also an unknown number of legitimate travelers—foreign tourists, foreign students, and qualified foreign workers—whose presence provides great benefits to our economy and the vibrancy of our culture.

In still other cases, border enforcement affects issues as fundamental to U.S. society as employment. Labor market enforcement is one example. Right now, labor market enforcement is relatively weak. For example, there were 639 criminal indictments and 586 convictions related to worksite enforcement investigations in 2011.[8] E-Verify, which allows employers to check the work eligibility of their employees, is currently voluntary. There are significant errors in the E-Verify database, which means that people legitimately able to work in this country are sometimes rejected. This is one reason that making E-Verify mandatory is a potentially risky step.

One mechanism for strengthening E-Verify and reducing errors is to have employers submit their verified I-9 forms to E-Verify. Employers must fill out an I-9 form for each new employee. Completion of this form certifies that the hiring authority has confirmed an applicant's identity and eligibility to work by examining a document such as a passport. However, employers are only required to maintain the I-9 information at their offices. If these documents were instead submitted as part of E-Verify, it would greatly increase the intelligence and information that DHS

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[8] Andorra Bruno, "Immigration-Related Worksite Enforcement: Performance Measures", Congressional Research Service, May 10, 2012.

has about illegal employment patterns and it might deter employers from being willing to hire improperly documented employees. This approach is not without controversy, as it imposes a new compliance requirement on employers.

These opportunity costs – and many others – need to be accounted for in a national border control strategy.

Next Steps and Conclusions

Various pieces of legislation, including HR 1417 in the 113th Congress, have called for the development of this critical analytical capability, though none that I am aware of have been signed into law. HR 1417 required:

> *"estimates of the relative cost effectiveness of various border security strategies and operations, including deployment of personnel and technology, and construction of new physical and virtual barriers."*

It is encouraging to see a call for this kind of modeling to inform decisions about where and how to invest. To my knowledge, no such modeling, and no such approach to border security, is currently being undertaken.

Finally, I would be remiss if I did not note how difficult it is to conduct effective policy analysis in this area.[9]   It is difficult to get access to data to conduct effective modeling. It is also difficult to publish in the scientific literature in this area. The ability to get data and to publish are what help attract bright minds to policy challenges. But publishing is also important for another reason: by submitting the work to public and scholarly scrutiny, we ensure that the work is accurate. While I realize that border security presents many important security challenges, too often contracts with the Department of Homeland Security place unnecessary and unproductive restrictions on public, academic, and policy discussion of these important issues.

Let me close by repeating something I noted in my 2006 testimony: there is no single programmatic fix. Border security will be achieved through a network of mutually reinforcing, and to some extent redundant, layers of defenses. The solutions will span the bounds of cabinet agencies in the federal government. As a consequence, we need to consider not just the effects of individual programs, but the interaction effects of multiple programs. It is important that we get

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[9] Alicia Carriquiry and Malay Majmundar, editors, "Options for Estimating Illegal Border Entries at the U.S.-Mexico Border," Committee on National Statistics, National Research Council.

an analytic framework in place soon so that we can begin to make more informed decisions about border control resource issues.