

2011

State Leadership for Safer Chemicals Policy Reform: Lessons from California, Maine, Minnesota and Washington

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State Leadership for Safer Chemicals Policy Reform: Lessons from California, Maine, Minnesota and Washington

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May 6, 2011

A thesis submitted to the faculty of the Environmental Studies Program in
partial fulfillment of the graduation requirements for the Degree of Bachelor
of Arts with honors in Environmental Studies

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ABSTRACT

Chemicals regulation under the U.S. Toxic Substances Control Act of 1976 fails to protect human health. In the absence of federal protection, safer chemicals legislation and implementation is moving forward in four states: Maine, Minnesota, California and Washington. Working in response to a loud public cry of concern and persistent grassroots organizing, these four states have enacted laws that regulate chemicals in consumer products. Maine, Minnesota and Washington chose to focus on regulating the chemicals used in children's products, taking into consideration greater vulnerability in early development and the compelling public priority to protect children's health. The most important factors contributing to state leadership include: the presence of an active environmental health advocacy group that spreads awareness about the need for policy to protect human health; a supportive state legislature; an understanding of state-specific economic costs of inaction by the state legislature; stakeholder participation; and interstate information-sharing and communication about the regulatory process.

ACKNOWLEDGMENTS

I would like to thank Assistant Professor Gail Carlson for her inspiration, guidance, skillful editing and committed support throughout the year as my thesis advisor. I also want to thank Professors Philip Nyhus and Russell Cole for supporting my research and reviewing my work. My thesis would not have been possible without help of many interviewees who patiently answered all of my questions about their state's safer chemicals policies and implementation processes. I want to thank and acknowledge Andrea Lani at the Maine Department of Environmental Protection, Catherine O'Dell at the Minnesota Pollution Control Agency, Corey Yep at the California Department of Toxic Substances Control, Holly Davis, and John Williams at the Washington Department of Ecology, John James at the Maine Department of Environmental Protection and Mike Belliveau at the Environmental Health Strategy Center & Safer States, and Nancy Rice at the Minnesota Department of Health.

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LIST OF ACRONYMS

ACHM. Alliance for a Clean and Healthy Maine
CDC. Center for Disease Control and Prevention
CDHC. California Department of Health Services
CDTSC . California's Department of Toxic Substances Control
CHANGE. Californians for a Healthy and Green Economy
COEHHA. California Office of Environmental Health Hazard Assessment
CSPA. Washington's Children's Safe Products Act
CSPC. Consumer Product Safety Commission.
EDC. Endocrine Disrupting Chemicals
EPA. United States Environmental Protection Agency
EWG. Environmental Working Group
HPVC. EPA's High Production Volume Challenge to collect chemical data
KSPA. Maine's Kid Safe Products Act
MBEP. Maine Board of Environmental Protection
MDEP. Maine Department of Environmental Protection
MDH. Minnesota Department of Health
MPCA. Minnesota Pollution Control Agency
NEWMOA. Northeast Waste Management Officials' Association
PMN. Pre-Market Notifications for TSCA chemical registration
REACH . Registration, Evaluation, and Authorization of Chemicals in the European Union
SCP. California's Safer Consumer Products Law
SERC. State Environmental Resource Center
TFKA. Minnesota's Toxic Free Kids Act
TFLC. Toxic Free Legacy Coalition
TSCA. Toxic Substances Control Act
WDOE. Washington Department of Ecology
WSDH . Washington State Department of Health
WSL. Washington State Legislature
WTC . Washington Toxics Coalition

INTRODUCTION

“The growing body of new scientific research linking early-life exposures to toxic chemicals to increased risk of breast cancer, prostate cancer, learning disabilities and other diseases and disorders is too overwhelming to be ignored...We should honor the state’s authority and role, and harness the energy of state leadership to finally fix our broken federal chemical safety system.”

-Mike Belliveau, 2010a

Recent actions by U.S. States to legislate and implement safer chemicals policies have taken into account a new body of scientific evidence on the hazardous effects of synthetic chemicals in consumer products. Even as federal action to reform the regulation of chemicals in consumer products is stagnant, there has been rapid growth in the number of states moving ahead with chemicals regulation (LCSP 2009). Federal action has been repeatedly blocked by the chemicals industry (Belliveau 2010a).

Many states have demonstrated concern about the lack of federal regulation of toxic chemicals in consumer products by developing their own policies, laws and regulations to address these hazards. Generally, this issue resonates with a bipartisan audience of consumers, legislators and even businesses eager to move toward safer chemicals policies (Belliveau 2010a). However, there are tremendous challenges associated with drafting practical solutions and finding agreement about appropriate regulations to adequately protect public health. Historically, greater emphasis was placed on industrial pollution control where toxics policies were characterized by studying and monitoring a small number of chemicals, focused on regulating end-of-pipe, point source hazards and implementing single chemical bans. Now, a number of states are moving away from single chemical policies and end-of-pipe solutions to more comprehensive policies that prioritize and restrict the most harmful chemicals, and replace them with Safer Alternatives (LCSP 2009). These states are implementing safer chemicals policies. In this thesis, a safer chemical policy is defined as a policy that assesses risk based on hazard, rather than risk based on both hazard and exposure, and examines the safety of synthetic chemicals in order to prioritize the most harmful chemicals for regulation and

eventual replacement with Safer Alternatives. Safer Alternatives are chemicals that do not have the same hazard traits as toxic chemicals, and so can be used to replace them, because they fulfill the same functional purpose and have a similar cost. Many safer chemicals policies focus on children's consumer products, meaning products that are intentionally targeted to children or are used in the home environment. The goals of this thesis are to compile information on the legislation and implementation of these new state safer chemicals policies, to identify factors that contributed to legislative successes, and to define challenges that need to be addressed for future implementation to be effective.

Background

This thesis first provides background information about the need for safer chemicals policies by describing the failure of current federal legislation to regulate chemicals in consumer products. I also describe the role of states in legislative leadership.

Methods

The methods section explains how these states were chosen and how the research was conducted using both publicly available information and interviews with people implementing safer chemicals policies at state agencies.

Results

The results section has several parts. First, state profiles describe the safer chemicals policies in each state, beginning with the legislative history of chemicals regulation in the state, a description of the safer chemicals policy implementation process and the current status of each state's legislation and implementation as of May 2011. Second, common factors among these state policies are discussed, including the presence of a nonprofit advocacy organization, a state level biomonitoring project, and an economic cost assessment of inaction. Third, important communication and stakeholder involvement features is described, such as the role of intrastate and interstate communication and industry opposition to state reforms and the citizen petition which allows for public involvement. Finally, state positions and platforms for future federal policy reform efforts are discussed.

Discussion

The discussion will analyze why these states were able to enact safer chemicals regulations, by looking at how common factors contributed to state successes in safer chemicals legislation. Implementation challenges are discussed, such as unrealistic citizen and industry expectations, limited state agency resources and the high cost of Safer Alternatives analysis. Important factors that will be important for future implementation and new state policies, to solve the challenges will also be discussed. The discussion ends by considering state positions on federal reform in regards to the recently introduced Safer Chemicals Act of 2011.

Conclusion

The conclusion ultimately ranks the states on their progress thus far, and highlights the main lessons that can be learned from these states for future safer chemicals regulations at the state or federal level.

Background

Current federal chemicals policy is inadequate, and does not protect citizens from the unreasonable harm posed by exposure to chemicals in everyday products. The Toxic Substances Control Act (TSCA) is the federal law that regulates chemicals in commerce. It was enacted in 1976, and creates a chemicals inventory that separates chemicals into two categories: existing chemicals that were on the market prior to 1976 and new chemicals that were introduced to the market after TSCA was enacted. The existing chemicals are grandfathered into the system, and manufacturers of existing chemicals do not need to submit any safety data to the TSCA inventory. TSCA was intended to provide a framework for the regulation of chemicals which pose an “unreasonable risk of injury to public health and the environment,” however, among other failures to protect human health; “unreasonable risk” is never defined (Schwarzman and Wilson 2009). The United States Environmental Protection Agency (EPA) must have substantial evidence about the “unreasonable risk” of a chemical to require further testing of the chemical’s safety. When there is a tremendous data gap, any data that would indicate “unreasonable risk” is missing. Rather than placing the burden of obtaining data from chemical manufacturers,

EPA is responsible for obtaining safety data on existing chemicals, a burden that some say is “impossibly high” given that 83,000 chemicals are registered with TSCA (GOA 2009; Denison 2009). Currently, EPA has required testing for about 200 chemicals (Denison, 2009). This is not because less than 200 chemicals have evidence of potential harm, rather it reflects the time and substantial resources required to order further testing. Simply finalizing the rule to request further testing can take between two to ten years, between proposing the rule, receiving public comment and modifying the rule (GOA 2009). Also, proposed test rule are vulnerable to lawsuits by the chemical industry.

According to EPA, in 1998 screening-level hazard data for 43% of approximately 3,000 high production volume chemicals, produced in excess of one million pounds per year, was not publically available (Lowell 2008). In regard to the 62,000 chemicals in production in 1979 when TSCA began to review chemicals, the US EPA has only been able to take regulatory action to restrict five classes of chemicals. These restricted chemicals are: PCBs, CFCs, dioxins, and asbestos and hexavalent chromium. No chemicals have been banned since 1991. In the case of asbestos, the Federal Court overturned EPA decision to regulate, because the burden of proof that EPA had spent 10 years compiling provided insufficient evidence of harm to warrant regulation. The scientific and legal burden of evidence that EPA is required to provide is unrealistic, and serves as a strong barrier to regulation, which is needed to protect public health and prevent harm (Denison 2009).

On average, 2,000 new chemicals enter the market each year. Before a new chemical enters commerce TSCA does require that manufacturers submit a pre-market notification (PMN) be submitted to EPA, and about half of the PMNs submitted include toxicity information. Less than 40% have health or environmental data, and less than 20% include long-term toxicity information. Only 15% of PMNs include data on chemical health effects, and these data are industry-generated and may have an industry bias. In a testimony about TSCA John Stephenson, Director of Natural Resources and the Environment in the United States Government Accountability Office (GOA), said that approximately 95% of PMNs contain confidential business information, which limits EPA’s ability to provide information to the public about chemical production and risk. Currently more than 16,000 of the approximately 83,000 chemicals included in the TSCA

inventory are classified as confidential (ECOS 2010). Additionally, TSCA provides a disincentive for industry testing since there are penalties if a manufacturer has collected chemical toxicity data and does not share that data with EPA, but if no chemical toxicity data are collected there are no penalties. This discourages research about chemical toxicity, and leaves the public with a tremendous data gap about the safety of chemicals in commerce.

Since TSCA is not efficient or effective, EPA has instituted voluntary programs to aid chemical safety data collection. One of these programs is the High Production Volume Challenge, in which chemical manufacturers may voluntarily provide minimal test data for EPA to review. Any data are helpful, and the results collected are posted on EPA website. However, because this is a voluntary program the information is not comprehensive and the hoped-for data may not be provided.

Increased Public Awareness

Public awareness about the problem of inadequate chemicals regulation has grown, particularly in regard to the presence of toxic chemicals in everyday consumer products and in our bodies. In the 1960s with the publication of Rachel Carson's Silent Spring, we began to learn that "as we pour our millions into research and invest all our hopes in vast programs to find cures for established cases of cancer; we are neglecting the golden opportunity to prevent, even while we seek to cure" (Carson 1962). We know that by reducing or limiting exposure to toxic chemicals, we can decrease an environmentally attributable portion of diseases including cancer, but also neurological harm, disrupted reproductive development, and obesity. The overwhelming evidence from biomonitoring studies show that hundreds of industrial chemicals are present in human bodies. And from these studies we discover, as did environmental writer and safer chemicals policy advocate Sandra Steingraber, that "there is no away," no protection from exposure to toxic chemicals (Steingraber 1997). Framing this issue in a way that highlights the absence of barriers between unregulated toxic chemicals and our health provides momentum for states to develop safer chemicals policies and to reduce exposure to the most hazardous chemicals. This issue can also be framed in terms of environmental justice, as children and the developing fetus bear a disproportionate burden of harm because important developmental stages can be altered by endocrine disrupting

chemicals, which may result in irreversible damage. Protecting their health has been a driving factor for U.S. states to develop a safer chemicals policy. This knowledge has translated into active citizenship, as people have raised this concern in the media, around chemicals like Bisphenol-A (BPA). In response to concerns about BPA, 112 local or state level chemical policies have been proposed since 2006 to ban or restrict the use of BPA in consumer products (LCSP 2011). Businesses have also noticed consumer concern and many of them want their products to be trusted, and have used their influence in the market by requesting safer chemicals in their supply chains (LCSP 2009; Williams 2011).

Health Hazards from Environmental Exposures

The presence of toxic chemicals in consumer products is a significant risk factor for serious chronic diseases, subtle damage to cognitive development, and premature death. Environmental levels of exposure are related to increased prevalence of these diseases. Asthma, autism, attention deficit and hyperactivity disorders (ADD and ADHD), childhood brain cancer and acute lymphocytic leukemia and obesity are all rapidly becoming more common and are associated with increased exposure to toxic environmental pollutants (EWG 2005c; Lee et al. 2010). Reproductive health is also at risk as half of pregnancies in the U.S. end in miscarriage and 5-10% of couples are infertile. Additionally, 3-5% of their children are born with birth defects and chronic diseases have become leading causes of childhood death (EWG 2005c; Task Force 2007). All of these illnesses are linked to environmental contaminant exposure, and by establishing safer chemicals regulations, a portion of these diseases resulting from exposure to toxic chemicals can be reduced.

Biomonitoring

Pollution in humans is widespread. We know this from assessing the presence of chemicals in human populations through studies that test human blood, urine and hair samples for the presence and concentration of industrial chemicals. The study of chemicals in human bodies is called biomonitoring, and as the CDC states:

“Biomonitoring measurements are the most health-relevant assessments of exposure because they measure the amount of the chemicals that actually gets into people, not the

amount that may get into people” (CDC, NBP). Biomonitoring has been used to discover those synthetic chemicals, a small subset of all chemicals, to which we are most exposed.

The CDC’s National Report on Human Exposure to Environmental Chemicals is the largest biomonitoring study. Beginning in 1999-2000, this survey is ongoing, with cumulative reports after every two year cycle. The most recent 2009 and 2011 reports make up only large, statistically significant and ongoing study. Blood, serum and urine samples from study participants are taken and examined for the presence of chemicals. Since the beginning of the study in 1999 to the latest studies in 2011, the CDC has tested for over 300 environmental chemicals, and has measured the presence of 219 separate chemicals in blood and urine samples (CDC 2011). Many chemicals are present at levels known to be toxic, at least in laboratory animals, and risks are greatest for “vulnerable populations such as young children, women of childbearing age, the underserved, and the elderly” for links between “exposure to selected chemicals and health effects” (CDC 2011c). These data provides valuable results used to guide human health research and legislative priorities that are based on overall spread and concentration level of chemical exposure. Ultimately these studies call for efforts to reduce exposure to the chemicals that pose the greatest threat to vulnerable populations such as pregnant women and children.

One of the most emotionally powerful biomonitoring projects was a 2005 biomonitoring study called “Pollution in Newborns” (EWG 2005c). This study specifically looked at chemicals found in umbilical cord blood, and provided evidence that the industrial chemical body burden of a mother can travel through her blood into the body of her growing child. This study was conducted by the Environmental Working Group, which looked for 413 industrial chemicals in cord blood from 10 babies born in 2004 (EWG 2005a). Researchers found an average of 200 chemicals. Of these chemicals, 47 are currently found as ingredients in consumer products. Also, 137 are associated in peer-reviewed research with cancer, 151 with birth defects, 154 with hormone disruption, 186 with infertility, 130 with immune system toxicity and 158 with neurotoxicity. They were found at levels high enough to have significant biological health effects for the newborns such as birth defects or low birth weights. If developmental processes are interrupted and altered at an early stage, this can lead to additional developmental problems at subsequent stages (Faustman et al. 2000). In addition, fetal exposures to

certain chemicals may not result in acute damage, but may result in health problems that appear after significant lag time, even in adulthood (EWG, 2005c; Diamanti-Kandarakis et al. 2009). For instance, exposure to toxic synthetic chemicals during particular stages of fetal development can result in health effects later on in life, such as early puberty, reduced sperm counts, and tendency toward obesity (EWG 2005a).

Endocrine Disruption

Much of the new science about chemical hazard is based on a greater understanding of endocrine disruption and endocrine disrupting chemicals (EDCs). According to a scientific statement produced by the Endocrine Society, there is “evidence that endocrine disruptors have effects on male and female reproduction, breast development and cancer, prostate cancer, neuroendocrinology, thyroid, metabolism and obesity, and cardiovascular endocrinology.” Also “results from animal models, human clinical observations, and epidemiological studies converge to implicate EDCs as a significant concern for public health” (Diamanti-Kandarakis et al. 2009). Recent evidence reveals that the timing of exposure can be more critical than amount of exposure to an EDC, particularly during stages of early development, because exposure at important developmental stages can result in permanent, irreversible damage that may not be realized until later in life, including damage such as reproductive dysfunction and tumor promotion (Diamanti-Kandarakis et al. 2009; Nichols et al. 2011). This also includes exposures in utero and during puberty. The study of endocrine disruption is complex, because it is hard to pinpoint the exact chemical or time of exposure, when there are many environmental exposures to a collection of harmful compounds, each of which can result in a number of different impacts leading to adverse outcomes as varied as impaired development and metabolic dysfunction (Nichols 2011). Endocrine disruption can also work with genetics in what is known as epigenetics. This is a recent field that describes greater variability in genetic expression and inheritance than can be explained by DNA sequence alone, because genetic expression responds to environmental conditions. For instance, endocrine disrupters can activate or block gene activity, and may create changes that are heritable and can last for several generations, but does not actually result in changes to DNA sequence. In terms of EDCs, it means that exposure to an endocrine disrupting chemical

as a child can play an important role in genetic expression that occurs much later in life, or impact the genetic expression of the next generation (Nichols 2011).

Furthermore, many EDCs do not follow a traditional dose-response relationship. For example in the association between POPs and diabetes, the associations are stronger at lower exposures (Grün 2010). For other EDCs, the exposure-disease relationship follows an inverted U-Shaped curve (Lee et al. 2010), which shows little effect at very low doses, stronger effects at low doses and little effect at higher doses, and U-shaped curves which shows higher impacts at very low doses. This better understanding of the exposure-disease relationship tells us that endocrine disrupting chemicals can be harmful at very low doses of parts per million (ppm) and parts per billion (ppb), which is the environmental relevant concentration of endocrine disruptors that have been found in biomonitoring projects. Assumptions that underlie toxicological experiments do not consider non-monotonic dose-response relationships, and instead presume that “the dose makes the poison.” For example, animal studies found low dose exposure to PCBs reduces mating activities in rats, and low dose BPA exposure to neonatal rats increases the incidence of prostatic lesions, predisposing the rat to carcinogenesis later in life (Diamanti-Kandarakis et al. 2009). Low dose exposure to BPA also binds with estrogen receptors and stimulates the reproductive development of female rats (Chapel Hill Panel 2007). The science of endocrine disruption has led to the understanding that to effectively regulate potent endocrine disrupting chemicals inherent hazard of the chemical rather than hazard and exposure, which should be the standard to adequately protect children.

Protecting Vulnerable Populations

Children are particularly sensitive to environmental toxicants. They are born pre-polluted with body burdens passed on from their parents, and if these chemicals contain hazardous endocrine disruptors then they are at risk for irreversible harm. They also have an increased likelihood of exposure from activities such as crawling on dusty floors and frequently putting their hands into their mouth. This results in a greater uptake of toxicants than dermal absorption or inhalation, and with a smaller body size, the dose they receive is stronger. Additionally, they are more vulnerable in terms of their developing systems being more easily damaged by the harm that the environmental toxicants can cause, because children are still developing organs and physiological

systems, including those “systems that detoxify and excrete chemicals” (Hayes 2008; EWG 2005b).

Safer Chemicals Policy

A safer chemicals policy is defined in this thesis as a policy that assesses risk based on hazard, rather than risk based on both hazard and exposure, and examines the safety of synthetic chemicals to prioritize the most harmful chemicals for regulation. This systematic approach ranking chemicals based on inherent hazard differs from previous toxic chemicals policies at the state level. The first toxics policies were designed to regulate point source emissions of hazardous chemicals, such as Maine’s Toxics Use and Hazardous Waste Reduction Act, which consisted of pollution prevention plans for toxic waste and business (Maine Statutes 2009). The next wave of policies comprised of single chemical bans that prohibit a known hazardous chemical in all products or in certain products. For example, Maine enacted a law in 2003 to ban the sale of arsenic treated wood (Maine Statutes 2008a). There has also be a shift from concern about point sources of industrial emissions and pollution to concerns about small, non-point releases and the transboundary migration of these chemicals (LCSP, 2009). Currently, a focus is on how to generate economically practical analysis of Safer Alternatives to find safer, functionally equivalent and economically feasible replacements for toxic chemicals.

An example of a successful safer chemicals policy is the European Union Registration, Evaluation, Authorization and Restriction of Chemical Substances, also known as REACH. This law entered into force in 2007, and is a model precautionary law that requires manufacturers to complete safety tests for their chemicals and submit health and safety information for all chemicals in commerce that are produced in quantities greater than 1 metric ton per year, with more extensive safety information required based on the tonnage produced (European Parliament, 2006). Once safety information is collected, chemicals are prioritized based on their potential for harm. The potential for harm is derived from scientific studies that consider whether the chemical is a proven carcinogen, mutagen or reproductive toxicant (CMR) and/or an endocrine disrupting toxicant and/or whether the chemical is persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) (ECEDG, 2007). Chemicals that are a CMR, EDC, PBT or are a vPvB are automatically designated as a Substance of Very

High Concern (SVHC), and these chemicals are regulated regardless of the tonnage produced. Over the course of a few years, these chemicals will be placed on Annex XIX to be phased out of the market, unless a manufacturer is able to obtain an individual chemical authorization to continue production (ECHA, 2007). Often a chemical fits into multiple categories (PBT and EDC or PBT and CMR), since these chemicals tend to share the characteristics of being lipids, which makes them persistent and biologically active.

Broader State Chemicals Policy Development

The number of states proposing and passing a range of toxic chemicals regulations is increasing. According to a 2010 study looking back at the previous eight years, 18 states passed 71 chemical safety laws with an “overwhelming bipartisan margin” (Belliveau 2010a). In January 2011, legislators and environmental health advocates pooled their knowledge about a range of upcoming toxic chemicals regulations, and realized that bills will be introduced in 30 states and in Washington DC this legislative session (Safer States 2011d). Among these proposed bills, nine aim to establish or broaden a systematic safer chemicals approach. These states are: Connecticut, Illinois, Massachusetts, Michigan, Minnesota, New York, Oregon, Washington and Vermont (Safer States 2011d). The Chemical Policy Database, maintained by the Lowell Center for Sustainable Production, lists many state level chemical policies that have been proposed, failed or enacted in the U.S. since 1957 (LCSP 2010). In this database, 70 chemical policies have failed to pass, 38 policies have been proposed and are in process or pending, and 512 policies were actually enacted. Of these policies there have been 33 multiple chemicals policies. And, in 2011 alone, five chemicals policies have been proposed, including a safer chemicals policy in Maryland that is similar in structure to the safer chemicals policies examined in this thesis.

Role of State Action

“Future federal policy development can draw on lessons and models generated from an ever-growing body of state government experiences... [There is a] longstanding pattern in U.S. government, whereby state action ultimately sets the

stage for deferral policy and some long-term sharing of authority between federal and state governments for policy implementation (Rabe 2007).

U.S. states can fill the visionary role for safer chemicals policies, and can test whether these policies actually work. These states have recognized that in the absence of federal chemicals policy reform they can move forward with legislation and implementation and hope that this will lead to a set of experiences that will be helpful when federal reform eventually happens. There have been several attempts to pass a federal Toxic Substances Control Act (TSCA) Reform, but in each attempt thus far industry lobbyists have been successful in preventing legislation from being enacted (Belliveau 2010b). A TSCA reform bill has been introduced this 2011 legislative session, but it is hard to know what the outcome will be. Even as federal chemical policies “are shifting and evolving in Congress, “states need to be “ready to act without clear resolution of federal policy” (MPCA and MDH 2010). Additionally, states have the ability to be more innovative than the federal government with policies that focus on rapid chemical prioritization, Safer Alternatives and green chemistry incentives. One thing “state legislators can do to prompt Congress to act is by passing more state-level restrictions on toxic chemicals. The chemical industry has expressed repeated frustration with the growing patchwork quilt of state laws and related decisions by product makers to stop using toxic chemicals” (Belliveau 2010a).

METHODS

U.S. States' Chemicals Policies

In the absence of federal reform of TSCA, numerous U.S. states have recently legislated their own safer chemicals regulatory policies. Four states emerge as leaders for their development of safer chemicals policies that set up a system to regulate the vast number of chemicals in their state's commerce: California, Maine, Minnesota and Washington. To identify these leadership states, I researched chemicals policy reports produced by third party policy organizations, such as the Chemicals Policy and Science Initiative at the University of Massachusetts Lowell. To supplement the reports, I found the website of a national umbrella environmental health advocacy organization called Safer States, which helped me to determine which states to research. California, Maine, Minnesota and Washington come from different geographic regions of the U.S., and each have a similar, yet varied safer chemicals approach. These regulations are at a different stage of implementation in each state, and the agencies involved with implementation face similar and different challenges. My research analyzes the safer chemicals laws and implementation processes in these four states. I believe that this is the first comprehensive review of key states working on chemical policy reform.

Publicly Available Information

As this area of U.S. state policy reform is new, there is little up-to-date information available in the peer-reviewed literature. Instead of doing a literature review, I began my research by reading state statutes. Draft regulations, recommendations by state agencies, public comments and safer chemicals implementation reports were also posted on the websites of state agencies responsible for implementation, along with broader policy goals.

I also searched the news media and websites of environmental health advocacy groups, as they often had up-to-date articles about what their states were doing. Of particular value were the websites of two national umbrella advocacy organizations called Safer States, which is made up of state coalitions that advocate for chemicals policy reform, and Safer Chemicals, Healthy Families, a coalition of many organizations and individuals. Both organizations support Federal and State chemicals policy reform,

and their websites have information about state advances and campaigns, states coordination, and links to state level advocacy groups. I learned about the involvement of state advocacy organizations, both from their websites, and by examining publicly available comments on state agency websites.

After exhausting publicly available information, I found that I needed more detailed information on why these states were able to introduce and pass safer chemicals legislation. I needed to have questions answered about how the law was developed. I also needed to know more about how the state agencies were implementing these new policies. Consequently, I followed up research that was based on publicly available information with interviews with key personnel responsible for implementing the laws.

Interview Protocol

I contacted the state agencies responsible for implementing chemicals policy regulation by email, described my research, and requested to speak with key personnel who work on safer chemicals policy implementation. Before each interview, I created profiles for each state summarizing the publicly available information, to understand state specific terminology, policy procedures and be equipped to ask appropriate questions about state programs and innovations. Taking this information into account, I developed a unique set of interview questions for each state, tailored to the individual state policies, as each policy differs in scope, implementation date, and progress (Appendix I).

I also wanted to compare consistent variables among cases, so I developed a list of common variables to cover in each interview.

These variables include:

- State toxics policy history
- Impetus for chemical policy development
- Agency responsible for implementation
- Current extent of regulations
- Extent of public comment
- Number of staff responsible for implementation

- Participation in interstate communication
- Challenges to implementation
- Policy successes
- Speculation for policy future

I was successful in obtaining an interview with at least one key person from each state. Table 1 lists the interviewee's names, titles, state agencies where they work, and interview dates. The two Maine interviews were held in person at the Maine Department of Environmental Protection in Augusta. I spoke with out-of-state interviewees over the phone. I interviewed the two people from Washington together in a conference call. At the beginning of each interview, I asked permission to record the conversation to provide a more accurate record. All interviewees were willing to have the conversation recorded, although some requested no direct quotes in the thesis. I also took handwritten notes throughout the conversation. Within a day after the interview, I transcribed the conversation, and then analyzed the transcript text. The interviews provided the context for and rationale behind policy implementation, and facilitated better understanding of publicly available information.

Table 1. Interviews conducted with state agency personnel involved with state implementation of safer chemicals policies.

State	Title	Interviewee	Agency	Interview
California	Associate Deputy Director, Office of Legislation and Regulatory Policy	Corey Yep	Department of Toxic Substances Control	March, 7th 2011
Maine	Environmental Specialist, Safer Chemicals in Children's Products	Andrea Lani	Department of Environmental Protection	December 13th, 2010
Maine	Bureau of Waste Management and Remediation	John James	Department of Environmental Protection	March 15th, 2011
Minnesota	Environmental Health Division	Nancy Rice	Department of Health	February 18th, 2011
Minnesota	Special Studies unit of the Environmental Analysis and Outcomes Division	Catherine O'Dell	Pollution Control Agency	March 14th, 2011
Washington	Senior Scientist Children's Safe Products Act	Holly Davies	Department of Ecology	March 2nd, 2011
Washington	Reporting Rule Coordinator	John Williams	Department of Ecology	March 2nd, 2011

Analysis

I analyzed the interviews in three ways:

1. I summarized the interview information about the context for safer chemicals policy, how the law was passed, and who were the key actors in passing the law. I combined information from the interview with publicly available information, which I used to describe the context of safer chemicals policy in each state.
2. I summarized how the laws are being implemented to describe the current status of safer chemicals implementation in each state.
3. I compared common variables among states by creating a table of commonalities and differences. In addition to state comparisons, I also made lists of critical state-specific factors.

My overarching goal was to answer two primary questions: (1) Why have these states have taken a position of environmental health leadership? and (2) what factors have led to challenges or successes in chemicals policy implementation?

RESULTS

At first, there does not seem to be a obvious shared factors that explain why these four states: California, Maine, Minnesota and Washington would be able to pass a safer chemicals law. They do not have a similar population size, they differ significantly in land area, there is a wide range in median household income and in the number of private businesses in the state (Table 2). There is not even a shared political majority. However, In the following results some shared factors that may contribute to safer chemicals leadership emerge.

Table 2. State facts from the U.S. Census demonstrating widespread variability in population size, area, median income, number of businesses and political climate.

State	Population (2009)	Land Area (square miles)	Median Household Income (2008)	Number of Private Businesses (2008)	Current Political Majority	Political Party of Governor
California	36,961,664	155,959	\$61,017	879,025	Democrat	Democrat
Maine	1,318,301	30,862	\$46,419	41,755	Republican	Republican
Minnesota	5,266,214	79,610	\$57,318	148,845	Republican	Democrat
Washington	6,664,195	66,544	\$58,081	182,207	Democrat	Democrat

STATE PROFILES

California, Maine, Minnesota and Washington have all legislated for a safer chemicals policy in the last four years, and while they share a number of characteristics, each policy has a unique history and regulatory approach. These states all acknowledge the inherent toxicity of a number of chemicals, including the toxicity of certain chemical classes, and recognize the need for a more comprehensive system to address the regulation of a universe of chemicals in consumer products. To this end, they have passed a range of policies intended to prioritize the most harmful chemicals, test for Safer Alternatives, and create an institutionalized structure to replace the most hazardous chemicals with Safer Alternatives. Each state is at a different point in the implementation process. These states are working independently, but are aware of the actions other states have taken and communicate to share strategies and information.

Each state profiled here is a leader in chemicals policy legislation. It is helpful to understand a brief history of chemicals regulation in California, Maine, Minnesota and Washington and how the current policy is built from previous regulatory efforts, in addition to how they are implementing their new laws, and where they currently are in the implementation processes. Each state profile combines information from publicly available sources and interviews. Analysis of each experience highlights commonalities and differences among them.

Table 2 describes basic information about the safer chemicals policy enacted in each state. The name of the safer chemicals policy in each state is listed, along with the date it was enacted by the state legislature. In several of the states, an influential environmental advocacy group or coalition was the driving force behind the policy. In both Maine and Washington, as seen in Table 2, the state-level advocacy group actually submitted draft legislation to the state legislature.

Table 2. Safer chemical regulations by state, date enacted, state specific influential environmental health advocacy group and whether that advocacy group was responsible for introducing the bill.

State	Policy Name	Date Passed	Primary State Advocacy Group	Proposed by Advocacy Group
California	Safer Consumer Products	1/1/2009	Californians for a Healthy and Green Economy	no
Maine	Kid Safe Products Act	4/17/2008	Alliance for a Clean and Healthy Maine	yes
Minnesota	Toxic Free Kids Act	5/7/2009	Healthy Legacy	Recommended
Washington	Children's Safe Products Act	3/10/2008	Toxic-Free Legacy Coalition	yes

CALIFORNIA

Safer Consumer Products

California has a tradition of taking innovative and bold steps to address environmental issues, including the threat of toxic chemicals exposures.

Legislative History

In the 1980s, the Department of Toxic Substances Control (DTSC) started out as a division of California Health Services. In the early 1990s, this division was made into a department when California consolidated all of its environmental programs (California DTSC 2007; Yep 2011). Over the years California established many laws to further awareness about toxic chemicals and to begin to address the harm that they cause.

One of the first laws was Proposition 65 (Prop 65), which grew out of consumer concern about the safety of chemicals, and was enacted in 1986 (COEHHA, 2003). It mandated that the state “publish a list of chemicals known to cause cancer, birth defects or other reproductive harm” (COEHHA, 2011). According to the law, this list of chemicals, made up of additives and ingredients in pesticides, common household products, food, manufacturing, construction, and even byproducts such as vehicle exhaust, must be updated each year. Under Prop 65, businesses must notify Californians about “significant amounts of chemicals in the products they purchase, in their home or workplace, or that are released into the environment.” Prop 65 defines significant amounts as 1/1000th of the no observable effect level to provide an “ample margin of safety” from the level known to cause harm. This allows Californians to use this information to protect themselves from hazardous chemicals in their daily lives. Additionally, Prop 65 “prohibits California businesses from knowingly discharging significant amounts of the listed chemicals into sources of drinking water (COEHHA, 2011.)

Another law called the Safe Cosmetics Act was passed in 2005. It mandates reporting of chemicals in cosmetics that cause cancer and reproductive harm, although industries are not required to report trade secrets under the U.S. Food and Drug Administration (California Senate Bill No. 484). In this law, manufacturers must submit information to the California Division of Environmental and Occupational Disease

Control (CDEOHC) in the Department of Health with a list of their cosmetic products that contain any ingredient identified as a carcinogen or reproductive toxicant and are sold in California. The CDEOHC is also authorized to require that manufacturers submit safety testing of these chemicals to the Department. Additionally, there is a state program authorized to investigate cosmetic products containing chemicals that are identified via independent testing in the European Union or the United States as a carcinogen, reproductive toxicant or “other ingredients of concern.” Under this law, the CDEOHC also has authority to test cosmetic products to determine if the manufacturer’s claim is true. If the division finds that a product has been falsely declared safe, then it can refer those findings to the Attorney General for enforcement.

Additionally, California has passed a number of single chemical regulations, such as the law to reduce phthalate exposure for children (California Assembly Bill No.1108). In this law, California restricts the concentration of phthalates to be no more than 0.1% of any toy or child care article sold in the state and prohibits manufactures from replacing phthalates with chemicals known to be carcinogens or reproductive toxicants. However, a key change in the regulatory approach was made evident in a letter from Governor Schwarzenegger to members of the California State Senate in 2008. In this letter he returns a bill to ban perfluorinated chemicals with the message that “a chemical by chemical, product by product approach to these issues is not the most effective way to make chemical policy in California” and instead offers support for a “more systematic, science-based approach that would take into account the health effects, risks, and available alternatives for chemicals used in commerce today” (Schwarzenegger, 2009).

Two companion bills, passed in 2009, furthered California’s role as a state leader in safer chemicals policy. Assembly Bill 1897, known as Safer Consumer Products (SCP) was enacted January 1st, 2009. SCP directs California’s DTSC to develop a comprehensive system to deal with toxic chemicals in consumer products (California Assembly Bill No. 1879). The bill was passed in 2008, but was only to be enacted alongside Senate Bill 509 and so they were both enacted on the same day (California Assembly Bill No. 1879). SCP calls for the DTSC to adopt a set of regulations that establish a process to identify and prioritize chemicals of concern. Once identified, the DTSC must develop a system to evaluate hazard, limit exposure, and ultimately reduce

the level of harm (California Assembly Bill No. 1879).

The SCP calls for chemical data gathering, in which manufacturers and distributors must fully disclose Priority Chemicals data, including the types, categories and classes of products that contain Priority Chemicals and the amount of priority chemical present in a product or product component. Additionally, the DTSC will require reporting information from manufacturers on: potential exposures for the whole product lifecycle, including the number of products sold in the state, sales locations, the targeted customer base, and potential chemical releases during production and end-of-life management, in their identification of Priority Chemicals. If this information is not submitted to the DTSC, the manufacturer or distributor will be put on a Failure to Comply list on the DTSC website. The DTSC may supplement the chemicals data it receives from manufacturers and distributors with independent chemicals testing, to prioritize and evaluate which chemicals pose the greatest public health and environmental risk. Excluding chemicals that are already covered by a federal or California regulatory program, two lists of chemicals will then be created: “Chemicals under Consideration” and Priority Chemicals. “Chemicals under Consideration” will be a much broader list of chemicals that exhibit certain chemical and physical properties associated with hazard or are known to cause adverse health impacts. The Priority Chemicals will be composed of those chemicals that pose a higher threat, as substantiated by reliable information on hazard, prevalence and exposure. The priority list will also take into account whether sensitive subpopulations of pregnant women and children are put at an elevated risk. These Priority Chemicals will be listed on the DTSC website, along with the name of consumer products containing them.

The companion bill; Senate Bill 509, known as the Green Chemistry Initiative Toxics Information Clearinghouse, requires California’s DTSC to collect and distribute information about specific chemical hazards, through a toxics information clearinghouse (COEHHA 2011b). This green chemistry initiative would support the work of SCP and other states and governmental entities that would benefit from increased information about the use of chemicals of concern. However, this bill is separate from the SCP and is being implemented by another team at the DTSC (Yep pers.comm. 2011).

Implementation

A team of four individuals at the DTSC is responsible for implementing Safer Consumer Products. Essentially, the law mandates that the DTSC develop a plan to ensure that the chemicals in consumer products will be safe. The implementation process is still in the planning stage, and no concrete requirements have been established to date. The first stage of implementation involves crafting regulations to design how to identify hazardous chemicals and Safer Alternatives, and how to limit or ban chemicals once they've been identified. This process began by scoping out systems that states and other countries, such as the European Union through its REACH policy, have implemented to prioritize and limit or ban toxic chemicals in consumer products, and learning from them about how those rules were developed (Yep pers.comm. 2011). At this point implementation involves setting up a process for identifying chemicals of concern, rather than actually identifying those chemicals. A rule for this process needs to be passed before chemicals can be prioritized, reporting can begin, and harmful chemicals can be phased out. But before that can happen there needs to be time for public input through a public comment period.

This policy regulates chemicals in all consumer products, and so public participation is tremendous, and lots of time is absorbed by making a change, pausing for public comment periods, altering that implementation rule and pausing for more public comment (Yep pers.comm. 2011). Public comment periods provide opportunities for communication and valuable feedback from stakeholders, and the chance to vet issues of concern. However, significant time dedicated to accepting and processing public comment substantially lengthens the implementation process. In the initial SCP bill, plans for an implementation strategy were supposed to be finalized in January 2011, but due to the large number of public comments received this deadline has been extended until September 2011 (Yep pers.comm. 2011). The level of public comment for the SCP is far above the normal level of public comment, and is comparable to the level of comment received for California's first hazardous waste regulations (Yep pers.comm. 2011).

The breadth of California's proposed policy makes it more challenging to craft practical regulations, and two years into implementation the deadline for regulations has been extended, as regulation strategies are still being discussed. Unlike other state

processes, California's statute does not dictate all of the details, instead the DTSC team is charged with that responsibility. This discussion about regulatory details continues through formal processes of drafts, reports, expert committees and public comment periods. The challenge is establishing a process to identify chemicals, prioritize them and figure out how they can be effectively regulated, in a way that both protects the public and is possible for manufacturers to achieve. There are so many comments, and each one needs to be considered, and this stretches out the length of the process (CDTSC 2010a).

A unique feature of California's SCP law is that it will require independent Safer Alternatives analysis for chemicals of concern (Yep pers.comm. 2011). This means that alternative assessments must be completed by an independent third party, or at least reviewed and verified for accuracy by a qualified third-party assessor (CDTSC 2011c). California wants to have an independent alternatives analysis, to avoid industry bias in the reported safety of chemicals. Most states and countries do not require an alternatives analysis, to ensure that the replacement chemicals will actually be safer than the chemicals that are initially banned (Yep pers.comm. 2011). This means that a precedent for the Safer Alternatives process is not fully established. So, part of California's implementation has been learning from people who do alternatives analysis including communication with manufacturers, who often conduct their own alternatives analysis, to learn more about that process (Yep pers.comm. 2011).

As is required by the SCP bill, an advisory group of relevant experts including manufacturers, public health professionals, professors of green chemistry and environmental health advocates, named the Green Ribbon Science Panel has been formed to assist the DTSC by providing recommendations for the implementation process. They are called to reconvene at various points during implementation, especially when the DTSC needs advice on the kinds of plans developed.

The most recent work on the Green Chemistry Initiative's Toxics Information Clearinghouse was a public hearing held on January, 29th, 2011, to brainstorm ideas for implementation (COEHHA 2011b). Funding mechanisms may be of concern, but at this point this work seems to be moving forward. Many states are anxiously waiting to hear what will happen with California's Toxics Information Clearinghouse, because it would play a large role in an interstate information sharing program called the Interstate

Chemicals Clearinghouse, and organization to support and assist state regulatory efforts and to share chemical reporting information among government agencies (NEWMOA 2011a). The Interstate Chemicals Clearinghouse would share information about chemical use, hazard, exposure and alternatives, so that states would be able to avoid information duplication, and could begin to fill in the data gap which can prevent future legislation from moving forward. All member states could add new chemicals information to the clearinghouse. Additionally, it would list information about the strategies and outcomes on chemical prioritization initiatives, so that new initiatives could easily be based on information about what has been done and build off of previous safer chemicals work. All of this information would be available to government agencies, businesses and the public to “ensure ready access to high quality and authoritative chemicals data, information and assessment methods” (NEWMOA 2011a).

Current Status

At this point a set of draft regulations for the SCP have been prepared by the DTSC. The current proposed rules establish a system for chemicals data gathering and prioritization, product prioritization, alternatives assessment and based on this information priority product redesign or prohibition (CDTSC 2011c). A public comment period was held between November 16, and December 3, 2010, to solicit feedback on the draft regulations, and the DTSC received many stakeholder comments (CDTSC 2010b; Yepers.comm. 2011). The Green Ribbon Science Panel has been asked to reconvene in April 2011 to discuss the public comments and the draft regulations and to come up with recommendations (CDTSC 2011).

According to the proposed rules, once chemicals have been prioritized the DTSC plans to use this information to prioritize the products that contain one or more Priority Chemicals, with the creation of two similar lists: “Products under Consideration” and “Priority Products”. The name of the “Priority Chemical” responsible for the designation of the product will be listed next to each product. These products will be identified based on volume produced and sold, and type of exposure (taking into account vulnerable populations), and the potential for releases of the priority chemical into the environment (CDTSC 2011c). A list of “Priority Products” will be named, based on the relative degree of threat, availability of data to substantiate that threat and the availability of alternatives

assessments relevant for the product or the priority chemical in the product. Each list of chemicals and products will be available for public comment before being finalized.

The proposed rules also describe the process for alternative assessments, which must compare the “Priority Chemical” with alternative chemicals using three kinds of comparisons: a Chemical Hazard Assessment to see if the alternative would pose a greater or equal threat; an Exposure Potential Assessment to see if chemical exposure from the alternative would be greater or equal to that of the priority chemical; and a Multimedia Life Cycle Evaluation that would consider differences in function and performance. Manufacturers shall complete these assessments, and must provide a report detailing their methodology. After examining the full alternatives assessment and the estimated economic impacts of switching to a safer alternative, manufacturers must also develop an alternative assessment work plan. This work plan is made up of information about the product supply chain and whether the manufacturers plan to redesign a product to reduce its priority chemical concentration or to replace the priority chemical with a different, safer material. In this plan they must include key milestones and dates for how they plan to alter their products. The minimum amount of a priority chemical allowed in a product without regulation is 0.1% by weight, unless reliable information proves the chemical is hazardous at lower levels, in which case the minimum amount will be below that hazardous level (CDTSC 2011c). In the work plan adverse affects for public health and the environment that may result from production, and harmful exposures during production, use and end-of-life management of consumer products and their chemical ingredients must be reduced when technologically and economically feasible.

Unless a manufacturer submits a notice that the priority chemical will be removed from commerce, within two years after an alternatives analysis report is submitted to the DTSC, the DTSC will require the manufacturers to create and maintain a product stewardship plan, which will include a system for collecting and recycling the product containing a priority chemical. This collection system will be developed in consultation with California retailers and collection sites, which will be compensated for collecting discarded products that contain “Priority Chemicals.”

All of the information used by the DTSC to make decisions regarding chemical and product prioritization, alternatives analysis and associated reports and product work plans will be posted on the DTSC website.

These rules have been proposed but are still in draft form. The DTSC has received public comments, and is now waiting for recommendations from the Green Ribbon Science Panel. Once it has those recommendations, the DTSC will revise the proposed SCP rules to be finalized by September 17, 2011, the scheduled date to either accept the revised proposed rules or continue to edit them (Yep pers.comm. 2011).

MAINE

Kid Safe Products Act

Legislative History

In 2008, Maine passed *An Act To Protect Children's Health and the Environment from Toxic Chemicals in Toys and Children's Products* (Maine Statutes 2007a). This law, known as the Kid Safe Products Act (KSPA), gives Maine the authority to collect information on chemical uses in children's products, create lists of chemicals of concern, prioritize the most harmful chemicals and prohibit the sale of children's products containing Priority Chemicals when Safer Alternatives are available (Maine Statutes 2007a).

Policy making for the KSPA involved designing a system to address uncertainties about the dangers of childhood exposure to toxic chemicals. Children are most vulnerable during early development, so products intended for use by children, including baby products, toys, car seats, personal care products, clothing and food products specifically for children under age three are covered by this legislation. Consumer products that may result in the exposure of a fetus may also be considered for regulation (Maine Statutes 2010). Public involvement by industry lobbyists and environmental advocacy groups and citizens has been very high, both at public hearings and in written comments submitted to the DEP. The level of comment is comparable to issues of shoreline zoning, but is much higher than normal DEP rulemaking, with a couple of hundred people commenting on the designation of a priority chemical in the summer of 2010. This public support for protecting the health of Maine's children influenced the success of this bill becoming law (Lani pers.comm. 2010).

Maine has a history of toxics leadership. One of Maine's first toxics laws addressed lead poisoning in children. It was initially passed in 1973 and banned the use of lead paint and lead in and upon (surface covering) children's products, interiors, and fixtures (Maine Statutes 1999). Another early toxics law passed in 1989 to reduce the amount of heavy metals (cadmium, hexavalent chromium, lead and mercury) in packaging (Maine Statutes 2008b). Maine legislated a number of first-in-the-nation mercury laws that banned mercury in certain products. The first mercury law, enacted in

1999, restricted the sale of certain mercury added products and required that a collection system for other products containing mercury be established (Maine Statutes 1999). After that the state conducted a review of mercury-containing battery sales in 2003, which led to an amendment of the requirement to design an appropriate collection system for recycling and labeling them (Maine Acts 2003). Shortly thereafter, a 2005 law required the removal of mercury switches before product disposal (Maine Statutes 2008c). In 2006, Maine enacted yet another mercury law, a reporting requirement for mercury amalgam supplied to dentists (Maine Acts 2006). To address different single toxic chemicals, Maine passed a law in 2003 restricting the sale of arsenic treated wood without a proper permit (Maine Statutes 2008a), and then in 2007 Maine passed law banning penta- and octa- brominated flame retardants, which was later expanded to include deca-brominated flame retardants (Maine Statutes 2007b). The brominated flame retardant bans were first-in-the-nation laws (James pers.comm. 2011).

Leading up to the passage of the KSPA, Maine passed a preferable purchasing law to encourage the use of safe chemicals in public schools in 2007 (Maine Acts 2007). Additionally, there have been product stewardship laws in Maine, intended to give some end-of-life responsibility to product manufacturers. For instance, an electronic waste law passed in 2003 required that the name of a manufacturer to be labeled electronic products and that the manufacturer develop a plan for electronic waste collection and recycling (Maine Statutes 2008d).

The direction for the KSPA can be traced back to one key individual: Mike Belliveau, co- founder and executive director of an environmental health advocacy group called the Environmental Health Strategy Center (EHSC). Not only did the EHSC raise public concern about the lack of legislation to protect the public from toxic chemicals in everyday products, this organization persistently brought this issue to the attention of state legislators who realized the importance of this kind of legislation, and were compelled to act (James pers.comm. 2011). As a result, Governor Baldacci convened a task force to examine the need for a regulation to address toxic chemicals in consumer products. The Task Force to Promote Safer Chemicals in Consumer Products produced a report in December 2007 outlining recommendations for Maine to take legislative action

on this issue (MDEP, 2007). Consequently, John James at the Maine Department of Environmental Protection (MDEP) was given the responsibility of writing legislation to begin implementation of those recommendations. Simultaneously, Mike Belliveau and the EHSC put forward a similar bill based on the same recommendations from the Governor's Task Force, but much broader in scope than the MDEP bill, and with an unrealistic fiscal note given the limited resources at the MDEP. Both bills were heard at the same time. Over the course of a weekend they were combined and were put forward as an amendment to the MDEP bill (James pers.comm. 2011). Eventually, this amendment was acted into law with strong bipartisan support, in which 102 Democrats and 59 Republicans voted in support, and 0 Democrats and 9 Republicans voted in opposition. (Belliveau 2010a).

Implementation

Chemicals of High Concern

The first stage of implementation identifies hazardous chemicals for regulation. The KSPA called for the identification of Chemicals of High Concern by January 1st, 2010. A list of chemicals, known as the "Chemicals of High Concern" List was compiled by Dr. Deborah Rice at the Maine Center for Disease Control (MCDC), with the help of Andrea Lani at the Maine Department of Environmental Protection (MDEP) (Lani pers.comm. 2010). All of the chemicals on the list were previously documented by an authoritative government agency to have credible scientific evidence of being:

- A. A carcinogen, a reproductive or developmental toxicant or an endocrine disrupter
- B. Persistent, bioaccumulative and toxic
- C. Very persistent, and very bioaccumulative

The list of Chemicals of High Concern may be revised by the MDEP at least every three years, either to add new chemicals that meet the requirements for concern, or to remove chemicals based on evidence that they are not present in children's products (MDEP, 2010a). Ahead of schedule, in June 2009, a list of 1,739 Chemicals of High Concern including brominated flame retardants, heavy metals, PCBs, phthalates, petroleum gas and petroleum derivatives, was posted online (MDH, 2010).

Priority Chemicals

Working from this list of Chemicals of High Concern, MDEP and MCDC go through a process of naming one priority chemical at a time (Lani pers.comm. 2010). Deborah Rice at MCDC is responsible for researching the toxicological evidence for each chemical and Andrea Lani at MDEP puts together all of the evidence in a “Basis Statement”, describing why the priority chemical has been proposed and summarizing the science of the chemical’s hazard. The KSPA directed the Maine Board of Environmental Protection (BEP) to name a minimum of two Priority Chemicals by January 1, 2011, although more Priority Chemicals could be named, depending on the strength of political will and availability of department resources (MDEP 2010a). Commissioner David Littell of the MDEP was very supportive and advocated naming as many as six Priority Chemicals in the first year (Lani pers.comm. 2010). However, further requirements for classifying Priority Chemicals must be met, and gathering all of the information takes considerable time and effort.

Credible scientific evidence for naming a priority chemical must show that exposure to the chemical is ubiquitous in the environment, the home or the human body. More specifically, evidence must demonstrate that:

- A. The chemical has been found through biomonitoring to be present in human blood, including umbilical cord blood, breast milk, urine or other bodily tissues or fluids;
- B. The chemical has been found through sampling and analysis to be present in household dust, indoor air, drinking water or elsewhere in the home environment;
- C. The chemical has been found through monitoring to be present in fish, wildlife or the natural environment;
- D. The chemical is present in a consumer product used or present in the home
- E. The chemical has been identified as a high production volume chemical by the federal Environmental Protection Agency; or
- F. The sale or use of the chemical or a product containing the chemical has been banned in another state within the United State.

In the KSPA statute, the MDEP is given the responsibility to convene a stakeholder group, including “representatives from consumer product and chemical manufacturers, retailers, trade associations, non-profit health organizations, businesses, environmental groups and other affected parties” as well as independent experts, to develop recommendations for implementing an appropriate protocol for the proposed Priority Chemicals and to raise issues of concern (MDEP, 2010a). Ideally, this stakeholder group will raise all concerns, and will generate valuable suggestions as to the most appropriate mandates to regulate the proposed priority chemical. The Maine BEP passed two implementation rules in the Spring of 2010 to allow the KSPA implementation to move forward. One of these defines children as 18 years of age or younger and the other gives the DEP the authority to collect a Priority Chemical reporting fee from manufacturers to pay for implementation (MDEP, 2010b). Two Priority Chemicals Bisphenol-A (BPA), and Nonylphenol (NP)/ and Nonylphenol ethoxylates (NPE), were proposed by the MDEP and MCDC. Subsequently public hearings were held in front of the Maine Board of Environmental Protection (BEP), BPA was heard in August 2010, and NP/NPE in October 2010, and as all of the priority chemical requirements were met, these two Chemicals of High Concern were designated as Priority Chemicals by the (BEP) on December 16th, 2010 (MDEP, 2011b and MDEP, 2011c). After designation, BPA needed to go before the Senate. On April 12th, 2011 the Senate voted unanimously to support the BPA ban (Bangor Daily News, 2011a). Governor LePage chose neither to sign nor veto the BPA rule, and so, because it passed unanimously in the senate, and with a 145-3 vote in the House, it will become law 90 days after the legislative session ends on June 15, 2011 (Bangor Daily News, 2011b).

All of the research was compiled and a basis statement was written to propose a class of chemicals, known as brominated flame retardants, as the third priority chemical to be regulated under the KSPA in December 2010, but the MDEP decided not to go forward with the designation of brominated flame retardants because just as it was introduced the administration was putting a hold on all rulemaking (James pers.comm. 2011) due to the upcoming change in the governorship of Maine.

To designate a class of chemicals as a priority chemical would have been another groundbreaking decision for Maine, but the rationale for this kind of designation was very clear. Essentially, all brominated flame retardants have a similar chemical structure, giving them similar biological behaviors and a similar level of hazard. They also break down into similar metabolites in the environment. Since this class of chemicals can cause the same kind of harm, limiting or restricting the use of one brominated flame retardant, only to replace it with another brominated flame retardant, would not demonstrably increase the safety to children from this class of toxic chemicals (James pers.comm. 2011). Since the MDEP decided not to act on brominated flame retardants, current work at the MDEP under the KSPA is focusing on the two designated Priority Chemicals.

Current Status

The MDEP is working on the next stages of implementation: to collect data from manufacturers on the presence of Priority Chemicals in children's products. This information will help them on the next step, in which they mandate that Safer Alternatives must be substituted, for the product to continue to be sold in the state. Under the KSPA law, manufacturers are required to submit in writing to the MDEP "the children's product, the number of units sold or distributed in the State or nationally, the priority chemical contained in the children's product, the amount of such chemicals in each unit of the children's product and the intended purpose of the chemicals in the children's product" (Maine Statutes 2010). This information must be received by the MDEP in the 180 days after the priority chemical has been identified. If the MDEP needs more information about use of the priority chemical and its potential risks, it can request supplemental information from the manufacturer, such as likelihood of child exposure or presence in environment. The MDEP can also ask for cost and feasibility assessments about the potential for harm to health and the environment. Manufacturers or distributors are welcome to provide further information to the MDEP about the potential for harm caused by the chemical to human health and the environment for specific uses. If there is "substantially equivalent" or similar information from previous studies or independent analysis that is already available to the commissioner of the MDEP, or if the specified use of a chemical is minor, then manufacturers do not need to submit unnecessary information. A temporary implementation rule with a reporting fee was passed in 2010 to

cover the cost of data collection and management, but major substantive rulemaking may be needed to establish an appropriate and stable fee for manufacturers (MDEP 2010b).

Once the data are collected, the Maine Board of Environmental Protection (MBEP) reviews the data to determine whether children are directly or indirectly exposed to the priority chemical through the distribution of a product. The MBEP must also be certain that at least one safer alternative is available at a comparable cost. The KSPA legislation defines a safer alternative as any chemical that is not listed as a chemical of high concern. If the priority chemical has already been banned in another state within the US, or if the product is clothing or a novelty item, then the MDEP assumes a safer alternative is available. If these conditions are both met (children are exposed, and a safer alternative is available), then the MBEP may initiate major substantive rulemaking, to “prohibit the manufacture, sale or distribution of a children’s product containing the priority chemical” in Maine. If approved by the Maine legislature this rule becomes effective 180 days after the chemical has been prohibited. During those 180 days, manufacturers and distributors are required to submit a compliance plan for their products that contain the designated priority chemical, with a timeline, to the commissioner of the MDEP. In this compliance plan, they must indicate whether they intend to substitute a safer alternative for the priority chemical, or whether they intend to remove their product from the Maine market.

There are currently two proposed bills to amend the KSPA. These bills are listed as LD 1129 and LD 1185. LD 1129 would substantially limit the scope of the KSPA by changing the definition of child from 18 to 12 and excluding the developing fetus (Maine Legislature, 2011a). It would weaken the definition of credible scientific evidence, and raise the minimum level of a chemical allowed in a product without reporting and regulation to 1,000 ppm. And, it would make it harder to ban a toxic chemical with the KSPA, even if Safer Alternatives are available. The alternative bill LD 1185 would limit the KSPA, but not as drastically (Maine Legislature, 2011b). It would create a smaller list of 10-50 chemicals from the “Chemicals of High Concern” list, and future Priority Chemicals will be derived from that list. LD 1185 would also allow for additional momentum, since it calls for the MDEP to designate at least two additional Priority Chemicals by January, 2013. The decision will likely be a compromise between the two

bills. “It appears that both sides will be making some concessions, but the KSPA will not be significantly weakened” (Carlson pers. comm. 2011).

Some major points of debate are:

- (1) Re-examining the list of chemicals of concern and remove chemicals that are not present in consumer products
- (2) To create a smaller intermediary list of Chemicals of High Concern, from which to choose future Priority Chemicals.
- (3) Establish a minimum level of a chemical, below which manufacturers will not have to report
- (4) Changing definition of children’s product to limit it to toys and products used in the home or school
- (5) Including inaccessible components in a product
- (6) Definition of child from age 18 to age 12, and whether the fetus will be protected

The Maine BEP, which is a key part of the KSPA public comment process, is also under threat. The Regulatory Fairness and Reform Committee reassigned most of Governor Paul LePage’s controversial proposals to other committees. It decided against Governor LePage’s proposal to replace the citizen BEP with a panel of three judges. As an alternative, it proposed reducing the ten member board to seven members, but it has added an expertise requirement for three of those future members and has taken away enforcement responsibilities.

Framing as a Public Health Issue

In Maine, and perhaps in other states too there was a “very conscious effort” to reframe this issue as a “family health issue,” talking about the vulnerable fetus, fetal brain development and childhood learning disabilities, not just an environmental issue (Belliveau, 2008). “When you pull on biodiversity and major species, you get this certain core, hard core 2-10% of the public.... When you talk about the safety of drinking water or the safety of food and healthy families, 80-90% of people support it...we didn’t want

to pigeon hole this pollution as just another environmental issue” (Belliveau, 2008). Protecting children’s health is a compelling story and framing chemicals regulation in this way builds a broader citizen support base, and makes law makers who oppose child health protections seem heartless.

Framing the issue in a positive light that talks about preventing harm, and taking the opportunity to make the right decision also makes it more appealing. In Maine, Mike Belliveau talks about spinning safer chemicals policy in a positive light. “We had this major issue about the solution. We are not only campaigning about the bad chemicals, but we are campaigning to create the safer materials that will create jobs and wealth and open a new market for Maine businesses and Maine agriculture” (Belliveau, 2008).

MINNESOTA

Toxic Free Kids Act

Legislative History

The Minnesota Toxic Free Kids Act (TFKA) was passed in 2009 (Minnesota Statutes, 2009). According to Minnesota's Catherine O'Dell, who works in the Special Studies unit of the Environmental Analysis and Outcomes Division at the Minnesota Pollution Control Agency (MPCA), this showed that a state not known for leading the nation in toxics regulation was able to pass safer chemicals legislation (pers. comm. 2011). Even so, Minnesota has passed several toxics prevention bills. Along with most other states, Minnesota passed a Toxic Pollution Prevention Act in the 1990's (Minnesota Statutes 1990; LSCP 2011). More recently two single chemical bills were passed, addressing brominated flame retardants in 2007 (Minnesota Statutes, 2007) and bisphenol-A in 2009 (Minnesota Statutes, 2009). Leadership for the TFKA began with grassroots organizing to raise awareness about the need for safer chemicals legislation in the state. Healthy Legacy, the environmental health advocacy group made up of 29 smaller public health, learning disabilities and environmental groups raised awareness about the need for Safer Chemicals Legislation. These efforts led Representative Kate Kanuth to introduce the TFKA to the state legislature (O'Dell pers. comm. 2011). The introduction of this legislation led to substantial debate about unregulated and potentially toxic chemicals in children's products (MDEH and MPCA, 2010). However, the TFKA is the first piece of legislation to provide comprehensive information to the Minnesota legislature about the hazards associated with chemicals used in consumer products (O'Dell pers. comm. 2011).

Individual citizens and advocacy groups in Minnesota and other states have been very encouraged that the bill passed, and while it is not a big piece of legislation "it's something to work on" (O'Dell pers. comm. 2011). It is a simple piece of legislation, requiring the Minnesota Pollution Control Agency (MPCA) to work with the Minnesota Department of Health (MDH) and together publish and update two lists of chemicals known as "Chemicals of High Concern", and Priority Chemicals (Minnesota Statutes, 2009 and Rice pers. comm. 2011). They used Maine's KSPA model as an example (as discussed below).

Implementation

Nancy Rice works full time at the Environmental Health Division at the MDH on the chemical lists. She is the principal employee focusing on the TFKA, but she seeks input and help from others, such as the state toxicologist and the partner MPCA agency. The Legislation was passed in mid 2009 and in the span of a year the first list of Chemicals of High Concern was published in July 2010. By January 31st, 2011 the second list of Priority Chemicals was published.

Chemicals of Concern Lists

In an effort to save time and resources, Minnesota started prioritizing “Chemicals of High Concern” using previously constructed chemicals lists from reputable government agencies. Minnesota used Maine’s list of “Chemicals of High Concern” as a starting point, since Minnesota’s criteria include the criteria Maine used to develop a list of Chemicals of High Concern. From the statute, a

“chemical of high concern means a chemical identified on the basis of credible scientific evidence by a state, federal, or international agency as being known or suspected with a high degree of probability to:

1. harm the normal development of a fetus or child or cause other developmental toxicity;
2. cause cancer, genetic damage, or reproductive harm;
3. disrupt the endocrine or hormone system;
4. damage the nervous system, immune system, or organs, or cause other systemic toxicity;
5. be persistent, bioaccumulative, and toxic; or
6. be very persistent and very bioaccumulative”

By working from pre-existing and compiled data from other states, Minnesota has been able to save resources, and speed up the implementation process (although Maine also moved rapidly to make with their lists). Like other states, Minnesota realized that it is unnecessary to do extensive initial research, when much of that information is

readily available. Andrea Lani, Environmental Specialist, Safer Chemicals in Children's Products at the Maine Department of Environmental Protection, and John Williams, Reporting Rule Coordinator, at the Washington Department of Ecology both mentioned having conversations with Minnesota officials (Lani pers.comm. 2010; Williams pers.comm. 2011). In addition to referencing the work done in Maine, Minnesota looked to other resources, including but not limited to, the California Environmental Protection Agency, the Washington Department of Ecology, the U.S. Department of Health and Human Services, the U.S. Environmental Protection Agency, the World Health Organization, and European Parliament Annex XIV concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (Minnesota Department of Health, 2011a). The methods for naming the Chemicals of High Concern are publicly posted on the Minnesota Department of Health website in a document called "Minnesota Chemicals of High Concern Methodology." Consequently, the Minnesota list is a similar length to Maine's list, although is somewhat different. Minnesota did not include chemicals that do not have a Chemical Abstract Number, so all of the chemicals listed are intentional ingredients that manufacturers can identify with a number to make it easier for to track their use of these chemicals of concern. Minnesota also excluded all chemicals that are not found in consumer products, but added 373 chemicals that are not on Maine's list (Rice pers.comm. 2011).

To further prioritize chemicals of greater concern, Minnesota employed the same strategy as Maine by creating a list of Priority Chemicals. The criteria for this list are as follows (Minnesota Department of Health, 2011b):

- (1) The chemicals have been identified as a high-production volume chemical by the United States Environmental Protection Agency;
- (2) And:
 - (i) the chemical has been found through biomonitoring to be present in human including umbilical cord blood, breast milk, urine, or other bodily tissues or fluids;
 - (ii) the chemical has been found through sampling and analysis to be present in household dust, indoor air, drinking water, or elsewhere in the home environment;

or

(iii) the chemical has been found through monitoring to be present in fish, wildlife, or the natural environment.

On January 31st, 2011, seven chemicals were named Priority Chemicals in Minnesota: bisphenol-A (BPA), cadmium, decabromodiphenyl ether (decaBDE), formaldehyde, hexabromocyclododecane (HBCD), lead and phthalates [Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), Di (2-ethyhexyl) phthalate (DEHP)].

In addition to the chemicals lists, the TFKA statutes called for three reports to the legislature. The first two included a detailed methodology for the “Chemicals of High Concern” and Priority Chemicals lists, along with descriptions of what other states and countries had done to regulate toxic chemicals. The first two reports were completed in January 2010 by the MDH, and the MPCA. The third report from the MPCA was completed in December 2010 (MDH and MPCA, 2010). In the third report are recommendations for future legislation to “reduce and phase-out the use of Priority Chemicals in children’s products and promote the use of Safer Alternatives (MDH and MPCA 2010a) More specifically, these are the suggested actions:

1. Manufacturers of products that contain one or more Priority Chemicals must report what they are using to the MDH;
2. Require the MDH and MPCA to produce educational information about ways to limit Priority Chemical exposure;
3. Allow the MPCA and MDH to continue to participate in the Interstate Chemicals Clearinghouse;
4. Allow the MPCA and MDH to support state’s initiatives that support TSC reform by requiring that manufacturers provide safety information to EPA, allowing confidential business information (CBI) submitted to EPA to be accessed by states and making the manufacturer substantiate their CBI claims, and supporting TSCA reform that will not pre-empt state legislation;

5. Explore the possibility of expanding Minnesota's preferential purchasing initiative to give preference to products without Priority Chemicals;
6. Expand Green Chemistry Programs by providing tax incentives to manufacturers pursuing green chemistry or by including Priority Chemical reporting fees or Priority Chemical use fees.

However, the MDH does not know if the state legislature will act on these recommendations, and if the state legislature does act the MDH does not know what the new laws will be (Rice pers.comm. 2011).

Current Status

At this point, there are no requirements associated with regulating the chemicals on the list. It is up to the Minnesota legislature to decide where the safer chemicals regulation should go next. Representative Kate Kanuth, who originally introduced the Toxic Free Kids Act, has expressed the possibility of bringing forward legislation which would build on the Toxic Free Kids Act, taking into account the recommendations from the MDH and possibly following a model for Priority Chemical reporting and phase-out similar to Maine's Kid Safe Products Act (Rice pers.comm. 2011).

Public comments responding to the chemicals of concern and priority chemical lists are being accepted on the Minnesota Department of Health website. These comments will be posted to the Minnesota Department of Health website, and will be considered by the MDH when the lists are next revised. The "Chemicals of High Concern" lists are revised by the MDH at least every three years, and the "Priority Chemical" lists are revised each time a new "Priority Chemical" is designated (MDH 2011c).

Meanwhile, a voluntary stakeholder process is being led by a nonprofit called the Minnesota Environment Initiative. So far, a workgroup has been convened to facilitate discussions between academics, advocacy groups, industry representatives, and government representatives who have expressed interest in Minnesota's approach to chemicals regulation and green chemistry, in two phases (MEI, 2010a). Phase 1 began in January 2010, and the stakeholders reviewed approaches taken by other states in

chemicals regulations, identified policy gaps and barriers, and come up with four core opportunities: to advance public and environmental health, to demonstrate Minnesota's leadership, to increase publically available information, and to position Minnesota to benefit from improved chemicals management. Phase I also produced six priority issues for the state (MEI, 2010b):

1. Sound science should be used to review chemicals;
2. Manufactures should give necessary safety information to EPA;
3. Risk management should include vulnerable populations, cost and availability of Safer Alternatives;
4. Manufacturers and EPA should act in a timely way on Priority Chemicals;
5. Green chemistry and public access to information should be strengthened;
6. EPA should have sustained funding to ensure implementation.

The goal for phase II, which is anticipated to begin in spring 2011 and to end by December 2011, is to provide a critique of the current policies and to produce recommendations for Minnesota's next steps.

WASHINGTON

Children's Safe Products Act

The Children's Safe Products Act (CSPA) works to decrease exposure to toxic chemicals in children's products by placing those chemicals deemed to be of highest concern on a list. Manufacturers and distributors of children's products are then required to notify the Washington Department of Ecology (WDOE) if any of their products contain chemicals that are present on the list (Williams, 2010). The reporting rule will help to fill the data gap about chemical usage that exists for both consumers and agencies (Williams, 2010). By simply listing the most harmful chemicals, WDOE hopes manufacturers will recognize the potential for harm associated with these chemicals and will, of their own accord, switch to Safer Alternatives. Once more data about chemical use has been gathered, the next step (not part of the current CSPA) is likely to involve a mechanism to get information about Safer Alternatives, information that is currently unavailable (Williams's pers.comm. 2011). Then, Washington may decide to further develop the CSPA to give it the authority to restrict or ban the most harmful and threatening chemicals it finds.

Legislative History

Washington has also had legislative successes on toxics. In 1988 a pollution prevention law was passed to encourage the voluntary reduction of hazardous substance use. In 1991, Washington passed a law prohibiting packaging with concentrations of cadmium, hexavalent chromium, lead and mercury (WSL, 2008). Then, in 2003 Washington passed a chemical action plan for labeling fluorescent bulbs, properly disposing of mercury products and prohibiting mercury thermometers and the purchasing of mercury products, for primary and secondary classrooms (WSL, 2003). Washington passed a requirement in 2006 that all manufacturers selling electronic products in the state label their product with their brand name, and develop and pay for a system to collect, transport and recycle electronic products after their useful life (WSL, 2006).

Additional toxics laws in Washington fit under two broad ongoing initiatives at the Washington Department of Ecology (WDOE). One of these, called the Persistent, Bioaccumulative and Toxic (PBTs) Chemicals Initiative, is intended to reduce and

phase-out the use, release and exposure to PBTs in Washington and thereby reduce and eliminate threats to human health and the environment (Washington Department of Ecology, 2011b). Some well known PBTs, like the pesticide DDT still persist in human body burdens, even though they were banned many years ago. In 2004, Governor Gary Locke gave an executive order to develop a plan of the actions that Washington State could take to reduce threats posed by PBTs and PBDEs (brominated flame retardants), and to exercise preferable purchasing to avoid PBTs and PBDEs in products purchased for the state (WSOG, 2004). The next year funds were put towards rulemaking and development of additional chemical action plans for PBTs (WSESSB, 2005). As part of this initiative, Washington's WDOE passed the PBT rule in 2006, which developed criteria for naming PBTs, created a list of PBTs and calls for a Chemical Action Plan to examine the uses and releases of a specific PBT chemical. Like Maine, it passed a law that restricted the sales of PBDE flame retardants in 2007 (WSL, 2007). The second initiative, called Reducing Toxic Threats, works under the belief that the cheapest way to protect health of people and the environment is to prevent exposure to toxics. It is a voluntary initiative that encourages manufacturers to reduce the amount of toxic chemicals in consumer products, and minimize the amount of toxics in storm water runoff. At this point, most of the work is gathering data through a WDOE collaboration with the Puget Sound Partnership to study toxic contamination in Puget Sound (Washington Department of Ecology, 2011c).

The Children's Safe Products Act (CSPA) is intended to protect children, which it defines as individuals under age 12, from exposure to toxic chemicals in consumer products (WSL, 2008a). It was proposed by the Washington Toxics Coalition, a Washington State environmental health advocacy organization (William, 2011). Initially, it was not supported by the WDOE, because the WDOE did not think they had sufficient resources to start a new project, but in 2008 it was passed unanimously by the house and received enough support to pass in the Senate, before being signed into law by Governor Chris Gregoire. Since it was enacted, the WDOE is now responsible for its implementation and is excited to be working on safer chemicals regulations.

There were two major components to the CSPA law. The first part restricted the amount of lead, cadmium and phthalates found in children's toys, cosmetics, jewelry, teething items and car seats, made and sold in Washington State. However, in July 2008, the U.S. Congress passed the Consumer Product Safety Improvement Act (CPSIA), which overlapped with the CSPA in its plans to regulate lead and phthalates present in children's products (USCSPC 2008) and cadmium present in the paint of children's products. Since regulation was required at the federal level under CSPIA, this part of the CSPA was withdrawn, because it would have been pre-empted by the CPSIA (WDOE 2009), so it was withdrawn by the WDOE (WDOE 2008). The federal process is moving more slowly than Washington planned to move and the requirements are not as strict (applying only to the surface layer, not the entire product) (USCPSC, 2008). But, ultimately the WDOE sees it positively, because it regulates the same chemicals in children's products on a broader geographic scale (Williams's pers.comm. 2011). Also, because the federal government took the project over, the state saves limited resources.

The second part of the CSPA calls for WDOE to work with the Washington Department of Health to compile a list of "Chemicals of Concern", including those toxic chemicals that have been found in children's products or are present in human tissue. Manufacturers must then report back to the WDOE whether their products contain any of these "Chemicals of Concern." If a product does contain one of these chemicals, they must further disclose the component of the product containing the toxic chemical and the total amount in weight per component (Williams's pers.comm. 2011). This allows for better understanding of the chemical use and potential exposure routes than the traditional toxicological approach of considering the weight of the harmful chemical as a proportion of the weight of the entire product. For instance, a teddy bear could have a lead button, but this might not be heavy enough to qualify for regulation if the amount of lead was described in terms of total weight. Since there is a tremendous lack of information about the extent of chemical use, gathering this kind of data is necessary to determine appropriate regulatory strategies for the future (WDOE 2011c).

Throughout the legislative process, there was intentional transparency, outreach and encouragement for public comment. An advisory group, made up of stakeholders

including manufacturers, public health officials and environmental health advocates, was also convened, to have the opportunity for “face to face” meetings in which to bring up issues of concern and suggestions, and also to submit written comments (Washington Department of Ecology, 2011e). According to John Williams, of the WDOE, “there was a larger amount of outreach on this bill than on any others I can remember,” meaning the amount of public comment and solicited stakeholder involvement is much greater than normal (pers. comm. 2011).

Implementation

Washington State utilized a pilot rule process in the development of a reporting rule for the Children’s Safe Product Act. In the pilot phase, manufacturers are given the opportunity to test how the rule may affect them, and are asked to submit comments and suggestions to be considered by the WDOE when the final draft is prepared (Washington Department of Ecology, 2011f).

Washington’s list of “Chemicals of Concern” is intentionally much shorter than the lists created in Maine and Minnesota, to make it more practical for implementation, especially with limited state resources (Williams pers.comm. 2011) John Williams, Reporting Rule Coordinator, is the one full-time employee at the WDOE working on the CSPA, but is assisted by others at the WDOE and at the Washington Department of Health who have expertise in chemistry, PBTs and public health. A draft of the list was put forward in January 2010, and was updated in July 2010 (MPCA and MDH 2010a).

There is also prioritized list called “Chemicals of High Concern for Children” (CHCC) made up of 66 chemicals, with a detailed selection process. An extensive description of this process is available in a WDOE Report on the CSPA (WDOE 2009). Here is a simplified version of the process.

First, the WDOE put together an extensive database of high priority chemicals, built from many previous reputable government lists. In the beginning, the list was limited to chemicals with a Chemical Abstracts Service Registry Number (CAS), so manufacturers would be able to comply (Williams pers.comm. 2011). High Priority Chemicals were

identified by a state or federal agency, or accredited research University, on the basis of credible scientific evidence to:

- a. Harm the normal development of a fetus or child or cause other developmental toxicity;
- b. Cause cancer, genetic damage or reproductive harm;
- c. Disrupt the endocrine system;
- d. Damage the nervous system, immune system or organs that cause other systemic toxicity;
- e. Be persistent, bioaccumulative and toxic; or
- f. Be very persistent and very bioaccumulative.

Second, these 1800 High Priority chemicals found were examined for further criteria that demonstrate potential child exposure based on credible science, put into an algorithm for exposure by Dr. Catherine Karr at the University of Washington, using this kind of information:

- a. Human biomonitoring data
- b. Indoor air and dust data
- c. Drinking water data
- d. Product data

In terms of exposure, these chemical lists look at exposure in a different way from traditional risk analysis, and look for presence in home, dust and body tissue to find areas of exposure. Of particular value was the body burden studies, because if the chemical is present in human tissue, then it needs to be addressed (Williams pers.comm. 2011).

Third are a variety of other factors considered by WDOE, in the prioritization process. High Production Volume Chemicals, which are produced in excess of 1 million pounds per year, means that the possibility for exposure would be larger than for chemicals produced in smaller quantities. Data for both the parent chemical, and degradation products are examined, and a parent chemical may be listed if it degrades into chemicals that meet all of the criteria (Williams, 2010). Additionally, when there is

conflicting data about the relative hazard of a chemical, the WDOE takes a protective position to respond to the more concerning data (Williams pers. comm. 2011).

Current Status

At this point, the CSPA is only a reporting law, collecting data from manufacturers on the use of Chemicals of High Concern to Children, but the WDOE is supporting an amendment to the existing law to allow for analysis of Safer Alternatives. At this point, it is not clear what the final draft of this amendment will look like. However, the philosophy is that before regulating and banning toxic chemicals, information about Safer Alternatives is needed. This ensures that a safer replacement exists before a hazardous chemical is banned (Williams pers.comm. 2011).

The public comment period for the proposed reporting rule was extended from December 31st 2010 to January 7th, 2011 (Washington 2011d). From January until March 2011, John Williams worked to prepare the final draft and finalize supporting documents (cost benefit analysis, small business statement, significant legislative rules criteria document, citation list, and rule implementation plan), taking the public comments into consideration. In April, the WDOE plans to have adopted and published the reporting rule, at which time they will send out a Rule Adoption Notice. Provided the rule is adopted, it will go into effect in May of 2011.

COMMON FEATURES OF STATE SAFER CHEMICALS POLICY MAKING

Each State has a slightly different scope to their policy. Table 3 reviews what is covered in each of the safer chemicals statutes. All of the states either already have or have proposed a list of “Chemical of Concern”, which is the first step toward prioritization for all of the chemicals that have enough hazard data to warrant concern. This chemical prioritization process identifies the most harmful subset of chemicals are the most consistent feature across all four states. All of the states require credible scientific information demonstrating harm, and evidence of widespread exposure. The states differ in the language and specific requirements describing how chemicals are prioritized, while the lists are similar, they are not identical. Minnesota has the most basic law consisting of listing and prioritizing “Chemicals of Concern”, and does not take the next step that California, Maine and Washington have taken to require manufacturers to report on how much of the “Priority Chemical” is circulating in the state and in which products. The information from a reporting rule helps the state agency to determine appropriate measures for limiting or banning the priority chemical. The burden for providing safety data is required from the product manufacturer if additional studies examining hazard are needed, putting the burden of cost onto the manufacturer, rather than relying on the state to pay for safety testing. In Maine and California, the statutes also call for Safer Alternatives testing, to see if chemicals available that fulfill the same functions of a priority chemical at a comparable price. Information about Safer Alternatives availability then helps the state determine if the Priority Chemical can be replaced. If a replacement is available, the statutes in California and Maine give the state agency the authority to phase out the Priority Chemical. The Minnesota statute is limited in comparison with the other states, but the state agencies responsible for implementation submitted a report to the state legislature recommending amendments to strengthen the law.

Table 4. Basic features of state safer chemicals regulation statutes.

State	Chemicals of Concern List	Prioritized Chemicals	Prioritized Chemicals Reporting Rule	Safety Information required from	Safer Alternatives Testing	Authority to Phase Out
California	Yes	Yes	Yes	Manufacturer	Yes	Yes
Maine	Yes	Priority Chemicals (2 named)	Yes	Manufacturer	Yes	Yes
Minnesota	Yes	Priority Chemicals (7 named)	Recommended	Recommended for manufacturers	Recommended	Recommended
Washington	Yes	Chemicals of High Concern for Children	Yes	Manufacturers	Recommended	No

At this point, California's law covers the largest number of products, but California the furthest behind in terms of actually beginning to make a list and prioritize chemicals. Maine's law is furthest along in the implementation process, and is the only one that has designated Priority Chemicals and voted to ban a priority chemical. With the impending amendments, part of the current debate around the future of Maine's Kid Safe Products Act, is whether they should follow an implementation approach more similar to Washington implementation by creating a 50-chemical subset of the Chemicals of High Concern from which Priority Chemicals are named, and this idea was proposed in LD 1185. Washington's policy has gathered the most chemical-use information, and is poised to take the next step of requiring Safer Alternatives analysis (James pers. comm. 2011).

DRIVING FORCE OF NONPROFIT ADVOCACY ORGANIZATIONS

In each state, there is a nonprofit advocacy group at the center of state activities. These advocacy groups share many of the same features. All of them are made up of a diverse group of state-wide organizations already supporting a variety of public health, environmental health organizations. The key to getting the amount of public support needed to pass safer chemicals regulations seems to be creating high profile state campaigns, by working with already existing environmental, health, business, educational and faith-based organizations. These nonprofit advocacy groups (Table 4), one of which is present in each state, work to coordinate a message and have been hugely influential in the success of state safer chemicals policies.

Table 5. State specific environmental advocacy coalitions for safer chemicals reform.

State	Nonprofit Advocacy Organization	Participating Organizations	Generates Public Comments	Participation in Interstate Collaboration
California	Californians for a Green and Healthy Economy	39 partner organizations	Yes	Safer States
Maine	Alliance for a Clean and Healthy Maine	12 partner organizations 46 endorsing organizations	Yes	Safer State and Safer Chemicals, Healthy Families
Minnesota	Healthy Legacy	29 partner organizations	Yes	Safer Chemicals, Healthy Families
Washington	Toxic-Free Legacy Coalition	50 diverse member organizations	Yes	Safer States

California

Californians for a Healthy and Green Economy (CHANGE) supports a better system for regulating toxic chemicals in California. This growing coalition is made up of many smaller organizations that also actively work to promote safer chemicals policy and like other states, share this information through existing networks. Most recently CHANGE has been gathering comments to oppose the DTSC proposed Safer Consumer Products regulations, because they believe that the revision gutted the regulation and it is no longer strong enough to adequately protect public health (CHANGE 2011).

Maine

The Alliance for a Clean and Healthy Maine (ACHM) is an impressive coalition made up of many Maine-based organizations that support public health and work to phase out toxic chemicals in everyday life. The first legislative successes of the ACHM began in 2003, when the state legislature banned arsenic-treated wood and mercury in most consumer products (ACHM 2011). Since then it has grown into an effective organization that gathered tremendous support for the Kid Safe Products Act and bio-based plastics in the state. It is made up of smaller organizations with wide bases of public support, including the Environmental Health Strategy Center, the Natural Resources Council of Maine and Maine Organic Farmers and Gardeners. The ACHM sponsored several studies, including the Body of Evidence biomonitoring study of Maine People. Once these studies have been done, the ACHM disseminates the information around the state through existing networks and the media, and has made Toxic Chemicals Regulation a Priority for Maine's environmental community.

Minnesota

In 2006, Healthy Legacy developed as a joint project between the Minnesota Institute for Agriculture and Trade Policy and Clean Water Action of Minnesota to represent healthcare, citizens with disabilities, environmental justice and environmental health. Healthy Legacy has been a driving force in Minnesota to support safer chemicals policy, including the Toxic Free Kids Act. It has also signed onto the Safer Chemicals, Healthy Families platform for TSCA reform (HL 2011).

Washington

The Washington Toxic-Free Legacy Coalition is a broad state organization, made up of 50 diverse nonprofit organizations that are interested in supporting public and environmental health by phasing out toxic chemicals and promoting Safer Alternatives (TRLG 2011). It is led by a steering committee, which includes smaller organizations like the Washington Toxics Coalition, which began work in 1981 to protect both public health and the environment by advocating for regulating toxic pollution. They make it easy for the public to get involved in toxics advocacy, and actively support many successful hazardous chemical regulation campaigns. Washington Toxics Coalition has conducted a number of state-specific reports, which it uses in these advocacy campaigns, including the *Pollution in People* body burden study, and another study examining chemicals in house dust and laundry water called *Puget Sound, Down the Drain*, to better understand how these chemicals get into Puget Sound (WTC 2011).

BIOMONITORING IN STATES

All of the safer chemical statutes in California, Maine, Minnesota and Washington cite the presence of a chemical in human body samples as a reason for chemicals regulation, since biomonitoring studies demonstrate extensive human exposures to toxic chemicals. According to the CDC, these are the “most health-relevant assessments of exposure because they measure the amount of the chemicals that actually gets into people, not the amount that may get into people” (CDC 2011).

According to Washington’s John Williams, the CDC and Prevention’s National Report on Human Exposure to Environmental Chemicals is the gold standard for biomonitoring and body burden studies (pers. comm. 2011) that inform the process of prioritizing a list of chemicals for potential regulation. This study was particularly useful for passing the BPA ban in Washington, because it is powerful to express a need for regulation by saying that BPA was present in over 90% of the population (Williams pers.comm. 2011).

The CDC biomonitoring study is very valuable and is the only study that can allow for national conclusions about pollution in people, because it is the only statistically relevant biomonitoring study. However, the CDC has also provided grants for smaller biomonitoring studies of populations within states (Table 5; SERC 2004). States

that used these CDC grants are California, Washington and New Hampshire, to develop small scale biomonitoring projects (SERC 2004; LSCP 2009) like the biomonitoring pilot projects conducted in Minnesota. Additionally, there have been smaller biomonitoring studies funded by state environmental health advocacy organizations in Washington and Maine. Local biomonitoring projects are politically helpful, since knowing that the people who live around you have high levels of known or suspected toxic chemicals in their bodies is a compelling message to do something. These studies demonstrate the concept that pollution does not remain outside of our bodies and personalize the data in an alarming way that moves policy forward, because they show that ordinary people have a heavy body burden of chemicals known or suspected to cause harm to human health. These smaller scale studies reinforce the result of the nation-wide study.

Table 6. Scope and date of state level biomonitoring projects.

State	Biomonitoring Project	Sponsor of Project	Date	Type of Project
California	California Biomonitoring Plan	Initial CDC Grant	2003	Plan for statewide monitoring program
	California Environmental Contaminant Biomonitoring Program	State Government	2006	Ongoing statewide monitoring program: results reported every 2 years
Maine	Body of Evidence Report	Alliance for a Clean and Healthy Maine	2007	Study of chemicals present in state residents
Minnesota	Environmental Health Tracking and Biomonitoring Advisory Panel	State Government	2007	Coordinate data collection and sharing for designated chemicals. Community Studies. Pregnant Women and minors.
	Biomonitoring Pilot Projects			Regional Projects for specific populations and chemical categories
Washington	Washington State Plan for Priorities for Biomonitoring	CDC Grant	2003	Developed list of priorities for state level biomonitoring projects
	Pollution in People	Toxic Free Legacy Coalition	2005	Study of chemicals present in state residents

RESULTS OF STATE BIOMONITORING PROJECTS

California

In California, Senate Bill 1379 was signed into law in 2006, creating the California Environmental Contaminant Biomonitoring Program (California Statutes 2006). It calls for the first biomonitoring system in the state's history to "determine baseline levels of environmental contaminants in a representative sample of Californians, establish time trends in chemical levels and assess the effectiveness of current regulatory programs. Intended to provide public information about environmental chemical exposure every two years, the first data summary was supposed to be released in July 2010, but it now slated to be released in July 2012 (Biomonitoring Data Summary 2010). Currently several biomonitoring projects are underway at "various stages of development".

Maine

A coalition for environmental public health in Maine, called the Alliance for a Clean and Healthy Maine, conducted a body burden study called *Body of Evidence*, in 2007. In this study, 13 Maine men and women, representing a variety of ages and occupations including Elise Roux, a high school senior, Betty Kettell, a hospital nurse, Dana Dow a Republican state senator and furniture store owner, and Russell Libby an organic farmer and executive director of Maine Organic Farmers and Gardeners Association. Each person volunteered to submit samples of blood, urine and hair to be tested for 71 chemicals, of which a total of 46 chemicals were found. On average, each participant had measurable levels of 36 toxic chemicals in their body. This report personalized the threat of toxic chemicals, and shocked people who did not expect to have high levels of toxic chemicals residing in their bodies, that accumulated through routine and widespread exposure (Alliance for a Clean and Healthy Maine, 2007).

One of the participants named Hannah Pingree, a 30 year old Maine resident from North Haven, and former House Majority Leader in the Maine Legislature, reported being shocked by what she learned, and has been a strong leader for safer chemicals regulations in Maine. Over the years Pingree has sponsored several bills in the State of Maine, including a bill to phase out two hazardous flame retardants in 2004 and the KSPA in 2008. This report made her "almost zealous about these types of issues" and she

has been a “strong voice for the phase-out of unnecessary dangerous chemicals in Maine” (Belliveau, 2008). The body burden report concluded with recommendations to create safer policies that search for Safer Alternatives and require that industrial chemicals are proven safe, that manufacturers provide health and safety data for their chemicals and that Maine invest in green bio-based chemistry to “boost the state’s economy through production of Safer Alternatives to toxic petroleum-based plastics” (Body of Evidence, 2007).

Minnesota

At the same time that a body burden study was being conducted in Maine, the Minnesota Legislature passed a law requiring the Department of Health to run four very specific biomonitoring pilot projects (Minnesota Statutes 2007; MDH 2011a). Two of these projects are now complete: the South Minneapolis Children’s Arsenic Study, which tested arsenic levels in urine of 40 children who lived near a former pesticide storage facility where arsenic is present in the soil and found good news: most of the children had lower levels of arsenic than anticipated. The other study was the East Metro Perfluorochemical (PFC) Biomonitoring Pilot Project, which found PFCs in the blood of all 196 adults who participated. The reason for the latter study is that 3M is located in an eastern metro suburb and there is known PFCs contamination. Two studies are underway: the Riverside Prenatal Biomonitoring Pilot Project to test for eight chemicals, and the Lake Superior Mercury Project to assess population level mercury exposures for 1,100 newborns.

Washington

Between 2002 and 2003, Washington State developed a report listing biomonitoring priorities within the state using funding from the CDC (WDH, 2003). Later on, in 2005, an advocacy organization called the Toxic-Free Legacy Coalition, did a smaller study with ten Washington resident volunteers, tested hair, blood and urine for the presence of toxic chemicals belonging to six chemical groups: phthalates, brominated flame retardants, heavy metals, perfluorinated chemicals, pesticides and two persistent chemicals that were already banned: PCBs and DDT (Pollution in People, 2006). Like Maine, an eclectic combination of people volunteered for this biomonitoring study,

including Laurie Valeriano, the toxics policy expert of the Washington Toxics Coalition, Rev. Dr. Anne Holmes Redding, an Episcopal priest, Allyson Shrier, a children's book author, and Senator Lisa Brown, former Majority Leader in the Washington State Senate. Overall, they tested for 39 chemicals that are part of everyday products and found that each person tested had between 26 and 39 of the chemicals present in his or her body (Pollution in People, 2006). Like Maine's report, the *Pollution in People* report personalizes the concept of exposure to environmental chemicals, and describes both the health impacts of finding these harmful chemicals in our bodies, as well as the kind of necessary policy changes that can be taken to minimize exposure (2006).

ECONOMIC COSTS OF INACTION

Significant costs are associated with not taking action on toxic chemicals regulation, including regulating toxic chemicals in consumer products. These include tremendous societal and economic costs consisting of increased chronic disease, neurodevelopment disorders and other disabilities associated with environmental chemical exposures. The most evident costs for children's health are direct health care payments and increased educational costs for the growing number of students with special needs. Indirect costs include those resulting from subtle impacts on IQ and population—level income and productivity (Taskforce, 2007, University of California, 2008).

In 2002, an economist named Landrigan created a model to estimate the costs of four childhood disease categories that can be attributed to exposure to toxic environmental contaminants: lead poisoning, asthma, cancer, and developmental disabilities. This study found that the U.S. national costs of these four diseases are approximately \$55 billion per year (Davies 2005). Since then, the Landrigan model has been used to estimate the disease burden associated with exposure to environmental contaminants. According to a recent 2011 study, the cost of childhood illnesses (examined the same categories of disease) caused from exposure to air pollution and toxic chemicals now costs the U.S. \$76.6 billion per year (Jacobs 2011).

Following methods from this influential study and learning from one another, Massachusetts, Washington, Maine, Minnesota, and California conducted more localized economic cost assessments of childhood diseases resulting from environmental exposures in their own states. These states used state-specific information when possible, but filled in the gaps with national figures. Features of these studies are listed in Table 6. Here, only the overall costs are mentioned, even though in the state studies overall costs are divided by disease category. These cost assessments demonstrate that “there is not only a moral imperative to reduce the impacts of these preventable diseases” but it also makes good long-term economic sense to protect public health (Schuler et al. 2006)” More detail about the economic assessment in each state is provided below.

Table 7. Economic cost assessments of preventable childhood diseases from exposure to environmental contaminants.

State	Year	Cost Assessment Title	Total Cost (million\$/year)
Washington	2003	Economic costs of diseases and disabilities attributable to environmental contaminants in Washington State.	\$310.6 (direct), \$1,565 (indirect)
Minnesota	2006	The price of pollution: cost estimates of environment-related childhood disease in Minnesota.	\$1,393 (direct), \$1,890 (indirect)
California	2008	Costs of Toxic Chemical-induced Occupational Diseases Among Adults and Environmental Diseases Among Children within California	\$318.1 (direct), \$862.3 (indirect)
Maine	2009	An Economic Cost Assessment of Environmentally-Related Childhood Diseases in Maine	\$319.4- \$484.3 (direct)

California

In the publication by the University of California, Berkley named *Green Chemistry: Cornerstone to a Sustainable California*, one section is dedicated to the costs incurred from childhood exposure to environmental contaminants (University of California Berkley 2008). This publication teases out the data relating to childhood exposures from a study looking at childhood, adult and worker exposures to environmental contaminants, which was completed in 2005, and sent to California's Department of Toxic Substances Control in 2008 by Professor J. Paul Leigh at the University of California Davis. Like the other studies, the costs were broken down by disease category. The diseases examined here were asthma, cancer, mental retardation and cerebral palsy. This study also accounted for both direct medical payments and for indirect costs associated with morbidity and mortality. When cost estimates for both adult and childhood diseases

resulting from exposure to environmental contaminants were combined, the total direct cost was 1,015 billion/year and the total indirect cost was 1,455 billion/year (Leigh 2008).

This study is independent from the California Department of Toxic Substances Control. It likely was used to strengthen the need for California's Green Chemistry program, since it is included in a University Booklet advocating for Green Chemistry as the way of achieving sustainability in California.

Maine

Mary Davis, an adjunct assistant professor at the University of Maine's School of Economics conducted Maine's economic cost assessment of diseases resulting from exposure to environmental contaminants (Davis, 2009). This report reflects a conservative estimate of the amount and cost of environmentally-related childhood disease, in part because the diseases considered are limited to four categories: lead poisoning, asthma, cancer, and neurobehavioral disorders. Another reason is that for disease categories such as cancer and neurobehavioral disorders, the environmentally attributable factor for the number of disease outcomes is more uncertain, and so a conservative estimate was used to account for that uncertainty (Davis, 2009). This study has been influential in advocating for strengthening the Kid Safe Products Act. This study was completed after the act passed, but Mary Davis, the author of this study has testified before the Maine Board of Environmental Protection, and submitted a report to the Maine DEP to demonstrate the need for even stronger legislative action.

Minnesota

Kathleen Schuler, Susan Nordbye, Samuel Yamin and Christine Ziebold worked together for the Institute for Agriculture and Trade Policy and the Minnesota Center for Environmental Advocacy to estimate the cost of childhood disease resulting from environmental exposure to hazardous pollution. Like Washington, Minnesota calculates the overall burden of childhood disease from the same five categories: asthma, cancer, lead poisoning, birth defects, and neurobehavioral disorders (Schuler et al. 2006). Healthy Legacy used the data to campaign and lobby for the Toxic Free Kids Act.

Washington

In 2005, Kate Davis of the Environment & Community, Center for Creative Change at Antioch University—Seattle worked with Dietrich Hauge as a research assistant, to produce their best conservative estimate of the cost of adult and childhood diseases that are caused by exposure to environmental contaminants. The intent was to find out the cost of disease that could be prevented or reduced with the elimination or limitation of exposure to harmful environmental contaminants. The direct healthcare costs, and indirect morbidity costs of the diseases are both calculated. The study considers five disease categories: asthma, cancer, lead exposure, birth defects, and neurobehavioral effects. For adults, the disease categories are expanded to also include cardiovascular disease. Combining the costs for adults and children, the direct health care costs are \$782.1 million/year, while the indirect morbidity costs come to \$1,953 million/year in the state of Washington (Davies and Hauge, 2005). The figures for children only are \$310.6 million in direct health care costs and \$1,565 million in indirect costs. These figures have been used in toxics advocacy campaigns by the Washington Toxics Coalition to demonstrate the need for safer chemicals regulations (WTC, 2007)

STAKEHOLDER ADVISORY GROUPS

Within all of the states, there is considerable communication between the implementation team at the state agency and the regulated community (businesses), public health professionals, green chemistry academics and environmental health advocates. Formal public comment periods and stakeholder advisory groups facilitate this process. They discuss the need for new safer chemicals laws, how implementation should proceed, future legislative and rule-making needs and how the processes can be improved. These stakeholder/advisory groups are listed in Table 6. Each advisory group is a bit different, but serves a critical role in improving the chemicals policy in their state.

Table 8. Stakeholder involvement in state level advisory groups in each state.

State	Stakeholder Advisory Group	Why Convened	Ongoing Involvement
California	Green Ribbon Science Panel	Discuss Comments, advise the DTSC, and give recommendations for appropriate implementation plans	Yes
Maine	Task Force to Promote Safer Chemicals in Consumer Products	Examined the need for regulation and recommended legislative action	No
Minnesota	Minnesota Environment Initiative	Discuss Minnesota's options for future chemicals regulation	Yes
Washington	Advisory Group	To develop and improve a pilot rule	Yes

CALIFORNIA

The Green Ribbon Science Panel in California is the largest advisory group, made up of 27 individuals who review many aspects of California's Green Chemistry Program,

which is the overarching green chemistry initiative including the Safer Consumer Product Legislation. The Green Ribbon Science Panel continues to meet and serves as a third party to offer advice to the DTSC implementation team and provide feedback on proposed drafts and public comments. It is made up of many experts, with varying perspectives on toxics, and they help the California implementation team design appropriate rules.

MAINE

In Maine, after learning about the need for safer chemical policies from the Environmental Health Strategy Center and the Alliance for a Clean and Healthy Maine, Governor John Baldacci convened a 13 member Task Force comprised of representatives from Maine businesses, labor organizations, law firms, those doing economic development, public health, and environmental advocacy like the Environmental Health Strategy Center, the Natural Resources Council of Maine, and the Alliance for a Clean and Healthy Maine. This Task Force to Promote Safer Chemicals in Consumer Products came up with a report in 2007 detailing the need for safer chemicals regulation in Maine, and offered recommendations that were later incorporated into Maine's Kid Safe Products Act. Since there is no chemical industry based in Maine, the chemical industry was not invited to be a part of the task force (Belliveau, 2008). They recommended that the state take legislative action and their recommendation led the Maine to develop one of the two versions of the Kid Safe Products Act and to support the introduction of the KSPA.

MINNESOTA

The Minnesota Environment Initiative was convened in January 2010, to begin to collaboratively discuss and assess the issues and opportunities for improving chemical regulation and implementation in Minnesota (MEI, 2010a). This stakeholder group is made of 18 members from the business community, academia and the nonprofit advocacy sector. They produced a report at the end of 2010 with Phase I broad recommendations for improving chemicals regulation in the state (see State Profile: Legislative History for details of suggested policy improvements), and plan to come together for phase II to

more specifically discuss improvements in Minnesota's chemical regulation approach in 2011.

WASHINGTON

The Washington Advisory Group is made of 12 individuals, and is part of a pilot process to provide suggestions and input for the implementation of the Children's Safe Products Act. They met periodically throughout the pilot test phase from 2009 to 2010 (WDOE, 2011e) to give feedback to the WDOE about chemicals regulation implementation. The stakeholder meeting process established good communications and showed the business community that the WDOE believes that this kind of work can be accomplished more effectively through cooperation and open communication (Williams pers.comm. 2011).

CITIZEN PETITION

All of the state policies have a provision for direct citizen involvement. In each state, protocols for rulemaking are established by the state version of the Administrative Procedures Act, which dictates the policy process. As part of this protocol citizens can request their state agencies to adopt or modify regulations, as long as there is evidence to substantiate this change (Maine Statutes 1977; Minnesota Statutes 1995; Washington State Legislature 2005; COAL 2007). Regarding safer chemicals policies, if citizens can provide the evidence, they can request their state agency to move forward with the designation of a priority chemical if the agency has the authority under the state chemicals law. If a state agency does not have the resources to follow through with the request, they are not required to do so. Not one citizen has used this mechanism to name Priority Chemicals, in California, Maine, Minnesota or Washington yet, but this is a potential way for citizens to accelerate the rate of priority chemical designation by bringing together the evidence needed for basis statements that demonstrate the chemical under consideration meets the criteria for designation.

INTERSTATE COMMUNICATION

As states began to develop their safer chemicals policies, they realized that through interstate communication they can avoid unnecessary duplication of efforts including data collection and policy design. From the advocacy perspective, broad state coalitions advocating for safer chemicals policies can band together to share their successes and

strategies and to complement each other's work. Each state agency participates in interstate communication, and has the authority to participate in a recently developed interstate chemicals clearinghouse.

Interstate Chemicals Clearinghouse

One of the ways that states are working together to share information is through a newly developed program called the Interstate Chemicals Clearinghouse (IC2), whose mission is to assist and support state safer chemicals programs by closing the chemical safety datagap (NEWMOA 2011a). California, Maine, Minnesota, and Washington are all authorized to participate in this clearinghouse as part of their commitment to a safer chemicals policy. State, local and tribal governments, along with supporting businesses and non-governmental organizations, are all welcome to become IC2 members and to collaborate and share chemicals information (NEWMOA 2011b). The ultimate goal is to promote a "clean environment, healthy communities and a vital economy through the development and use of safer chemicals and products." (NEWMOA 2011a).

The first meeting for the IC2 was in the summer of 2008 at the Lowell Center for Sustainable Production in Massachusetts. The Lowell Center and Northeast Waste Management Officials' Association (NEWMOA) have worked together to administer the emerging program. This kind of chemicals organizing grew out of a program administered by NEWMOA to organize the IMERC mercury-containing products database (first created by a Maine law), which is a unique and similar model to the IC2. According to a July 2010 document titled *Envisioning the Future of the Interstate Chemicals Clearinghouse*, the IC2 aims to have the organization's structure figured out before the end of 2010 and to have begun functioning as a clearinghouse to promote better access to data by the end of 2011. As of January 2011, nine states were participating in the Interstate Chemicals Clearinghouse: California, Connecticut, Massachusetts, Michigan, Minnesota, New Jersey, New York, Oregon, and Washington (NEWMOA 2011b). They also hope to collaborate with federal organizations like EPA and international organizations like European Chemicals Agency, and to link all of the chemicals safety and use data that are generated. This information will all be put together in an extensive online database accessible to participating organizations with chemical

safety and Safer Alternatives data, Priority Chemical evidence, and implementation procedures from states (NEWMOA 2010).

Initial goals for the IC2 are to:

- avoid duplicating efforts by sharing critical confidential business information about chemical safety and Safer Alternatives effectively and efficiently;
- assist state agencies in identification and promotion of safer chemicals and products; and
- And ensure access to high quality authoritative information on chemicals data and assessment methods to state agencies, businesses and the public (NEWMOA 2010).

Knowledge about the availability of Safer Alternatives allows states to restrict or ban Priority Chemicals. Sometimes completing risk and health analysis of a priority chemical can be a barrier to a state for implementing a new policy, because it takes so much effort (LCSP 2009).

As each state moves forward with their implementation, they will be able to share the data that they gather as a part of their chemical reporting requirements in a coordinated data collecting system. One feature will be a Priority Chemicals resource to combine state Priority Chemical Lists into a searchable database that will provide easy access to source lists, hazard traits for chemicals and additional supporting information (NEWMOA 2010a). A Safer Alternatives Wiki is also in the plans, and this program will provide technical assistance/tools to standardize the definition of a safer alternative to a chemical of high concern among states. If all of the states can agree on a methodology and definition of a safer alternative, then the Safer Alternatives wiki would be able to disseminate that information and states could use the expensive studies done by one another.

A current challenge is that in the beginning stages, the IC2 is relying on California Toxics Information Clearinghouse, the sister law to California's Safer Consumer Products, which would fulfill many of the IC2's needs. However, the severe budget crisis in California has limited the development of California's clearinghouse (NEWMOA, 2010).

INTERSTATE ADVOCACY

State advocacy organizations have recognized the benefits of networks and coordination with other advocacy groups, and they have been building partnerships and sharing ideas. One example of this is called Safer States, which is a partnership of state and national advocacy organizations working for safer chemicals policies (Safer States, 2011a). Safer States is committed to “championing solutions to protect public health and communities from toxic chemicals.” These states share and publicize what states are doing to learn from one another and build momentum. The states that are part of Safer States are: Alaska, California, Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New York, Oregon, Vermont and Washington. These states also organize campaigns and advocacy strategies for TSCA reform.

Another organization called Safer Chemicals, Healthy Families focuses more on campaigning for TSCA reform than coordinating state strategies and helping states achieve safer chemicals regulations, even though many of the state organizations have signed on as supporters. This organization has member organizations and individual members, and represents more than 11 million people, including parents, public health professionals, learning disabilities advocates, environmentalists, businesses and state organizations, who are all united through their concern about the presence of toxic chemicals in consumer products, at home and at work (SCHF 2011c).

Industry Opposition to State Action

While a number of states have passed safer chemicals regulations, there has been a “loud and highly paid opposition from the chemical industry” in each state (Safer States, 2011), an industry that makes profits in the trillions of dollars from the production of toxic chemicals. The American Chemistry Council is a trade organization representing over 150 chemical manufacturers, including the “\$46 billion chlorine industry and the plastics industry which touches every part of our lives, provides \$379 billion in annual shipments and employs 850,000 workers” (Safer States, 2011). One of their strategies is to employ local lobbyists who know what is happening in the state legislature, and they have spent millions on endeavors to halt toxics reform. These industries advertise their interest in

reforming TSCA in favor of a safer policy, with website ads that talk about the importance of modernizing TSCA to protect the health of their customers. But, according to their opposition, Safer States, this interest is only serious in terms of increasing business profits through positive advertising, and may not reflect a true commitment to improving public health (Safer States 2011d). State personnel did not talk directly about industry lobbying, but said that the biggest challenge was crafting a policy that protected health but could be fulfilled by manufacturers. All of the interviewees mentioned that there was a huge industry response to proposed legislation. Even in Minnesota, where there is not yet a reporting requirement or law to phase out Priority Chemicals there have been comments against the Toxic Free Kids Act from the American Chemistry Council, the Personal Care Products Council, the Toy Industry Association, the Consumer Specialty Products Association and the Grocery Manufacturing Association.

Weaker Industry Influence at the State Level

National and international chemicals industries are paying close attention to state laws, and actively lobby and participate in public comment period to weaken the regulations and exempt their chemical for consideration. In these four states, the chemical lobby was not powerful enough to prevent safer chemicals regulation from passing. However, pressure from the chemical industry makes it a constant challenge to move forward with safer chemicals policy implementation. The number of public comments received from both public and the industry has stalled the implementation of California's Safer Consumer Products law. Perhaps this is because safer chemicals policies are addressing a small subset of chemicals produced, and in-state chemical companies may not have as much to lose as bigger chemical industry that is often based out of state. According to Mike Belliveau, the power of industry is concentrated in Washington D.C. and "they don't control the state legislatures and executive branch like they control the federal government... their strategy is always to stop federal policy or eviscerate the federal agencies" (2008). The Maine Environmental Health Strategy Center also said that not one Maine business opposed the Kid Safe Products Act or the BPA rule adopted and passed by the Maine legislature in early 2011. Instead the opposition came from BPA manufacturer Dow Chemical (EHSC, 2011).

STATE POSITIONS ON TSCA REFORM

On December 2, 2009, 13 states (California, Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Oregon, Vermont and Washington) signed onto a set of recommendations to the federal government, expressing what they hope to see in a new federal chemicals policy (MDEP 2009). They developed a list of eight priorities for federal reform listed below:

1. Demonstrate Chemicals and Products are Safe.

Manufacturers should provide the necessary information to regulators to conclude that new and existing chemicals and products in commerce are safe and do not endanger the public or the environment. The public has a right to expect that the products they use are safe.

2. Prioritize Chemicals of Concern.

Government should identify and prioritize chemicals of concern in order to regulate the most problematic chemicals in commerce, and have the authority to take timely action to protect people and the environment. Sufficient resources should be made available to support these actions.

3. Protect the Most Vulnerable.

Chemical regulation should be designed to protect the most vulnerable, including pregnant women and children.

4. Promote Safer Chemicals and Products.

Based on green chemistry principles, manufacturers should be required to assess and identify Safer Alternatives to problematic chemicals of concern. Government should establish protocols for evaluating potential alternatives to chemicals of concern.

5. Address Emerging Contaminants.

Emerging chemicals of concern, including nano-scale materials, need to be assessed for public and environmental safety before they go into widespread commerce and use.

6. Strengthen Federal Law & Preserve States' Rights.

States acknowledge the need for a strong federal chemical regulation system, while expressly preserving the authority of state and localities to implement measures to manage chemicals of concern.

7. Fund State Programs.

Effective state-federal governance should enhance the role of states in TSCA implementation, promote data and information sharing, and provide sustained funding for state programs. The states are in a unique position to provide innovative, cost-effective solutions for chemicals of concern prioritization, interstate data sharing, and safer chemical alternatives assessments.

Essentially, these states want to see strong reform and still want to preserve the State's right to regulate more stringently (Lani pers.comm. 2010). "We need a fix at the federal level so that we do not have to do this in the states," said Ted Sturdevant, Director of the Washington State Department of Ecology (Safer States, 2011c). "States have limited resources and lack the tools of federal agencies to drive a national program. However, until we have a national solution, we will continue to act on chemical safety concerns in our states."

In fall of 2010, the Environmental Council of States, a coalition of state environmental agencies, also took a position calling for reform of the toxic substances control act (Belliveau, 2010b). It echoed the same basic goals stated by EPA, National Conference of State Legislatures and the coalition of 13 states for effective TSCA reform, but also adds that there is a need for a streamlined and timely process that EPA can choose to take when there is imminent or substantial endangerment and that the TSCA reform should build a skilled workforce to advance Green Chemistry research and development.

DISCUSSION

Why were these states able to enact and implement safer chemicals regulations?

California, Maine, Minnesota and Washington have taken lead roles in reforming U.S. state policies on the regulation of hazardous chemicals in consumer products. Each of these states passed a law that reflects a commitment to protecting public health.

Interestingly, these laws all have the common feature of prioritizing the most harmful chemicals into two lists. The larger list is made up of chemicals with concerning hazardous traits. The smaller list is made up of the most toxic chemicals to which we are exposed, as identified by biomonitoring studies. California, Maine and Washington share the feature of a reporting requirement for that smaller subset of chemicals, although only Maine and Washington have begun to fulfill that reporting requirement. California and Maine both have the authority under their respective laws to designate the most harmful chemicals to be phased-out; however, Maine is the only state that has called for a phase-out of two “Priority Chemicals.”

Even though each state has passed a unique version of a safer chemicals policy, there are some generalizations that can be made about why they were successful.

Stakeholder Advisory Groups

States have discovered that stakeholder groups made up of advocacy representatives, business representatives, academics and public health officials can serve as valuable sources of ideas. They can provide expert feedback on which regulatory mechanisms will work, and which need further development. Additionally, they establish good working relationships between the state agency responsible for implementation, the advocacy world and the regulated community, which will hopefully lead to more effective implementation and enforcement of the safer chemicals rules.

Drivers for Future State Action

The Interstate Chemicals Clearinghouse looks like it might be the solution to limited state resources. It is not yet fully functioning, but states have been granted the authority from their legislatures to participate in this program, and recognize that participation will

benefit their attempts to fully implement their safer chemicals laws. This clearinghouse is still in the design stage, but it is an essential tool to strengthen state action. It is unnecessary for all of the resource-poor states to go through the same expensive steps of data collection and Safer Alternatives analysis, when the results would be consistent from state to state. A uniform methodology for data collection is essential for this kind of coordination to work, so that requirements for each state agency will be met. This will also be a valuable tool for other states who are considering passing a safer chemicals law in the future.

Increased Awareness about Pollution in People

All of the states completed a state-based biomonitoring project, all of the results reinforced the CDC study, which shows that pollution in people is widespread and is cause for concern. However, the presence of a biomonitoring project demonstrated that there was some awareness about biomonitoring after the project results were publicized in the state. Body burden studies have been powerful stimuli for advocacy and political action to pass legislation and prioritize chemicals. Advocacy groups in two states, Maine and Washington, actually included elected officials in their body burden studies as a way of spreading awareness about the need for strong safer chemicals regulations and gaining political support.

Strategic and Persistent Advocacy Organizations

Advocacy groups, like the EHSC and the Alliance for a Clean and Healthy Maine have worked to mobilize the public, to make the issue relevant to their everyday lives through personalizing and publicizing body burden studies and teaching them how to be effective lobbyists so that “advocates as well as everyday citizens can actually call their legislators at home and knock on their doors.” Maine has a very accessible, citizen-based legislature (Belliveau, 2008). And, in all of the states that require reporting or Priority Chemical phase-out, there has been tremendous public comment. Part of this may be due to state advocacy networks that have expanded to include non-traditional allies within the state such as health professionals, workers, parent teacher associations and religious leaders (LCSP, 2009). These untraditional allies and a unifying call to action to protect family health have resulted in broad bipartisan support in state legislatures. Building effective,

broad coalitions is a way for these advocacy groups to counter the influence of the large budgets of the chemicals industry.

IMPLEMENTATION CHALLENGES

Unrealistic Public Expectations

State agencies have a difficult task of reconciling consumer expectations and realistic, enforceable industry expectations. Citizens often have a hard time realizing that it is not realistic to expect chemicals to be 100% safe, and want to be told which products are safe to buy. But this is unrealistic. All that state agencies can do is to collect data from manufacturers for product types and to try to change the supply chain so that all products will have a certain degree of safety, and individuals will not have to make those kinds of decisions (Williams pers.comm. 2011). At the same time, industry argues that complying with a varied assortment of regulations can take away important resources that they would otherwise use to take voluntary measures to make their products safer. Industry is also afraid that people may file lawsuits if information from the reporting rule is made public, and people equate the presence of a chemical in a product with a level of toxic exposure. Addressing these concerns is difficult, and one of the best ways that all of the states have decided to address them is to convene advisory groups made up of industry, advocates and state representatives to discuss issues and brainstorm improvements.

Limited State Resources

All states cited that limited state government resources are a barrier to greater amounts of action on safer chemical regulations, because resources are needed to gather, share and make data available and go through laborious chemical-by-chemical designations and safer alternative assessments. Many states also lack capacities for toxicological or risk assessment. This could be addressed by intra and interstate coordination among agencies, and states are trying to develop effective coordination system even though it is hard because the states do not all agree on what is the best approach to safer chemicals regulation. Coordination could be a key to overcoming the limits to resources, for example using similar data as other states, or making consistent the way that chemicals are prioritized from state to state (Governor's Task Force, 2007). Another solution these states are pursuing is to require that manufacturers provide their full chemical safety

analysis and Safer Alternatives analysis, or to pay for the state to organize these analyses. This would place the financial burden of this necessary analysis on manufacturers, rather than on the public.

Safer Alternatives Analysis

The success of being able to make a difference in toxic chemicals exposure through safer chemicals policies depends on establishing a mechanism for Safer Alternatives. As John Williams at the WDOE and John James at the MDEP both pointed out, it will be necessary to prove that Safer Alternatives are available in order to restrict hazardous chemicals. It makes common sense, but unless there is a way to prove that safer chemicals can replace the Chemicals of High Concern, it will be extremely difficult for implementation to be effective. States are just beginning to learn how to conduct Safer Alternatives analysis and to figure out mechanisms to pay for them, because they are expensive and can drain agency resources, limiting the number of alternatives analyses that can be done.

POSITION ON TSCA REFORM

All of these states acknowledged that they would like to see effective and efficient TSCA reform, but they seem to be skeptical that one is likely to pass. As the Maine Governor's Task Force to Promote Safer Chemicals in Consumer Products explains, TSCA creates a Catch 22, in which the initial lack of data makes it impossible for EPA to acquire the safety data necessary to make substantiated decisions about the safety of chemicals that are necessary for the to limit or phase out the most harmful chemicals.

The states policies reflect their position on what they'd like to see in a TSCA reform, but they vary in industry requirements. This is good from the perspective of state advocacy groups, who hope that states will enact 8-10 slightly different state laws, "because it enables the states to actually start to make progress but also helps to ripen the conditions for federal reform" (Belliveau, 2008). Some companies are starting to want a uniform TSCA regulation, so they do not have to deal with all of the states pushing for their own regulations, because the number of regulations that they have to deal with in different states and countries is "insane" (Williams pers.comm. 2011). States just need to

make sure that if there is federal action, then it will be up to the same standards as the states established for themselves and will not pre-empt state action.

SAFER CHEMICALS ACT OF 2011

A new federal bill called the Safer Chemicals Act of 2011 was introduced by Senator Frank R. Lautenberg, a democrat from New Jersey on April 14th, 2011. The Safer Chemicals Act of 2011 would amend TSCA, and address key areas where TSCA has failed (Lautenberg, 2011b). Like the state laws, the Safer Chemicals Act of 2011 cites new science about chemical safety and biomonitoring evidence of ubiquitous industrial chemicals exposures as reasons for amending TSCA (Lautenberg, 2011a). It would require the chemical industry to provide a minimum data set for each chemical they produce, and authorize EPA to require any additional data necessary to determine chemical safety. This information would be used to prioritize all of the chemicals based on risk, and will place them into three classes: immediate risk management, safety standard determination and no immediate action. PBTs will be placed into the category for immediate action, which is equivalent to the state level Chemicals of High Concern. These chemicals will be further evaluated, if they do not meet a minimum standard of safety they will be removed from the market. To fill TSCA's data gap, the Safer Chemicals Act of 2011 will publish the data gathered and make that information available to the public and state agencies. It will also establish a network of research centers to conduct green chemistry and Safer Alternatives analysis, and will allow new safer chemicals into the market with an expedited safety-review process. The draft bill declares that it will not preempt state regulations (Lautenberg, 2011a). The one area that it does not specifically address is protecting vulnerable populations such as the developing fetus and child, or emerging contaminants such as nano-scale materials. However, it does talk about requiring safety testing for all chemicals, and emerging contaminants may be covered by the broader safety requirements. Time will tell whether 2011 will be the year for a federal TSCA reform bill to pass.

RANKING OF CURRENT STATE PROGRESS

Table 9. States ranked by current progress on passing and implementing safer chemical policies.

State	Stakeholder Involvement	Priority Chemicals	Reporting Requirement	Authority to Ban	Safer Alternatives	Implementation Underway	Rank
California	1	0	1	1	1	0	3
Maine	1	1	1	1	1	1	1
Minnesota	1	1	0	0	0	1	4
Washington	1	1	1	0	0	1	2

These four states are all at different points in the strength of the safer chemicals laws and the implementation progress. Maine is the furthest along, because it has a law that prioritizes chemicals, requires reporting of Priority Chemical use from manufactures, has the authority to request Safer Alternatives, and also the authority to ban priority chemicals if there is strong hazard evidence and if Safer Alternatives are available (Table 9). Maine is also the furthest along in terms of actually implementing that law, and has named two Priority Chemicals to be phased out. Washington is second, in terms of both a strong law and implementation underway. It has named sixty six Chemicals of High Concern to Children, for which it is gathering reporting data from manufacturers and distributors, and while it does not currently have the authority to ban the most harmful, implementation is well underway. California comes in third place, because while the safer chemicals law is very strong and covers all consumer products, rather than children's products, implementation has been stalled and chemical prioritization, reporting and Safer Alternatives have not yet been named. Minnesota comes in last, but Minnesota has been exceptionally thorough in the implementing the law and prioritizing chemicals and learning from other state actions.

CONCLUSION

States have been leading the way for safer chemicals reform in the absence of federal action, but are still in the early stages of implementation—States in the lead on this issue are Maine, Washington, California and Minnesota, listed in terms of ranking based on a strong safer chemicals law and progress of implementation. Throughout the implementation process, state agencies have developed a greater understanding of the need for a chemicals policy and some agencies have submitted recommendations to their state legislatures for amendments that would strengthen their authority to protect the public from harm. Creative and strategic advocacy organizations are leading the way, building broad coalitions and directing citizen concern into a force that can meet highly paid chemical industry lobby. State agencies are struggling with scarce state resources, and would like to be able to do more than they currently can. The framework for effective state level safer chemicals policies exists, provided that states agencies receive continued support in terms of funding and passing recommended implementation rules from the state legislatures. However, chemicals regulation momentum is building, as the number of states with a safer chemicals regulation grows, and as the states with safer chemicals regulations work together to build an efficient and effective chemicals clearinghouse to share chemical safety and safer alternative data. The interstate chemicals clearinghouse will be a valuable tool for effective implementation of the safer chemicals policies in California, Maine, Minnesota and Washington, but will also be a valuable tool for additional states preparing to enact their own safer chemicals laws. As of April 2011, there is safer chemicals policy movement at the Federal level, with a TSCA reform bill that follows most of the state recommendations for TSCA reform, but will not pre-empt state action.

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APPENDIX I

Interview Questions for Corey Yep

California's Department of Toxic Substances Control

March 7th, 2011

Connection to California's Regulations for Safer Products:

How is your work connected to California's Regulations for Safer Products?

History of California's Regulations for Safer Products:

Did California's Department of Toxic Substances Control grow out of a Department of Environmental Protection and a Department of Public Health?

- Or was it developed independently?

Is green chemistry and toxic chemical regulation an area of strong public/industry interest in California?

When did California's DTSC begin to work on Green Chemistry regulation?

Was the Green Chemistry work influenced by Proposition 65?

Is California's list of chemicals of concern connected to the Interstate Chemicals clearinghouse?

- How so?

How do the public comments for the regulation of Safer Products compare to the public comments for other kinds of legislation?

How do bio-plastics fit in with the mission of green chemistry?

Have bio-plastics helped to create a vision for safer products in the future?

Have they helped make the argument for industry advancements and innovation through safer chemicals policy?

Does California do any preferable purchasing for safer chemicals?

Implementation of California's Regulations for Safer Products:

Does the DTSC work with other government agencies in California to draft and implement the Regulation for Safer Consumer Products?

Who puts together California's green chemistry regulations?

Are there employees of the DTSC who focus on the green chemistry regulations?

- If so, how many employees work on it?

What role does the Green Ribbon Science panel play?

- How were people selected for the Green Ribbon Science Panel?
- When do they submit recommendations?
- Who considers the recommendations?
- Does the DTSC make the final decision?

What role does the Green Chemistry Leadership council play in drafting and revising the Regulation for Safer Consumer Products?

How does California prioritize chemicals of concern? And products of concern?

- I read the draft proposal... but more technically, does the DTSC go through lists of chemicals, are they ranked numerically? Can you describe the process?

Is the DTSC working from previously established government lists of chemicals of concern or does the DTSC do its own research too?

- Literature searches, conducting own studies... if so/if not why? Save resources if work appears to be redundant?

Has the Department started creating the list of chemicals of concern?

- Is there any estimation of how many chemicals will be included?

Are the toxicity data sets posted on the website

(<http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/toxicdata.cfm>) used to prioritize chemicals and products of concern?

- Or are they simply for public awareness?

Have other states contacted the DTSC to learn more about the Safer Chemicals Policies in California, in order to draft their own safer chemicals policies?

Future Direction of California's Regulations for Safer Products:

What is the current stage of the draft Regulations for Safer Products?

Did this deadline apply: state law requires that regulations be adopted by January 1, 2011?

Could budget deficits prevent the Regulation for Safer Consumer Products from a strong implementation?

Without enough resources might the Safer Consumer Products implementation be weakened? Or postponed?

Is there support for the Safer Consumer Products legislation from the current Governor and state legislature?

Is there any estimation of how many chemicals might be on the list of concern, and how many will be targeted in priority products?

- Or will that step come after the regulation is adopted?

Interview Questions for Andrea Lani
Maine Department of Environmental Protection
December 13th, 2010

Connection to Kid Safe Products Act:

Were you working for the Maine Department of Environmental Protection when the Kid Safe Product Act was passed? Were you involved in any part of drafting of the bill or its passage? What were the feelings at DEP about the bill?

History of the Kid Safe Products Act:

In your opinion, what factors have contributed to Maine taking a leadership role in Safer Chemicals Policy among states?

- Do certain groups, elected officials, advocacy groups, (DEP) agency workers or public individuals play a particularly prominent role in the decisions that Maine makes?
- Do other states look to Maine's KSPA when considering their own chemicals policy?

Safer States recently put out a report about the bipartisan voting records for safer chemicals policies the United States. Does the process seem bipartisan to you, as someone who is working from within the agency?

- Is it more bipartisan than other environmental policies? If so, why do you think that it might be more bipartisan? Do you think that this will help the process remain strong, despite the new administration?

What are your thoughts about a National Reform of the Toxic Substances Control Act?

- Do you think it would be better for states and industries to have a more uniform standard?
- Do you think that it might weaken Maine's state policies?

What were the biggest challenges for passing the Kid Safe Products Act?

Implementation of the Kid Safe Products Act:

What kind of commitment, in terms of both resources and effort, has it been to begin implementing KSPA?

From the DEP's perspective, do you think that KSPA, a comprehensive law is an effective way of approaching chemicals policy?

- Is this easier to organize than single-chemical policies?
- What kind of behind-the-scene work is required to prepare for each new priority chemical?
- What constraints, if any, exist to effective implementation of KSPA?

From the outside, this process of naming new chemicals and moving towards implementation seems to be moving along rapidly, does it seem to be moving quickly from your perspective?

Some questions about the process:

- How are new chemicals named?
- What do you think about the pace of implementation?
- Does it seem to be working well?

- Are there certain parts that seem to be working better than others?
- Is there anything that you would change to improve the process?

Are there lobbying groups that tend to be particularly active, including both pro-priority chemical restriction and anti-chemical restriction? Do they have a big impact on how the policy develops?

Do you think that the level of public involvement and interest in safer chemicals policy is comparable to public involvement in other environmental policies, or other state policies?

Does it seem as though there is much information sharing between states, with a chemicals policy that uses the naming of priority chemicals as a regulation tool, about implementation efforts for priority chemicals?

It seems as though states are forging their own paths on chemicals policy. From your perspective: Is there much coordination? Or does it seem mostly independent?

Has Maine looked to other places for guidance on implementation of KSPA? (Other states? Other countries?)

Future Steps for the Kid Safe Products Act:

Does it seem as though regulation of priority chemicals will be difficult for the Maine DEP to monitor?

Where do you see the work on Safer Chemicals Policy moving within Maine, particularly in light of the recent elections?

- How will the Department change, and Board of Environmental Protection change with the new administration in Maine?
- Do you think that the naming of priority chemicals will be delayed because of the new administration?
- Can the implementation of priority chemical regulation be delayed because of the new administration?

Interview Questions for John James
Maine Department of Environmental Protection
March 15th, 2011

Connection to the Kid Safe Products Act:

Were you working for the Maine Department of Environmental Protection when the Kid Safe Product Act was passed?

Were you involved in any part of the drafting of the bill or its passage?

History of the Kid Safe Products Act:

What were the feelings at DEP about the bill?

What were the biggest challenges for passing the Kid Safe Products Act?

From the DEP's perspective, do you think that KSPA, a comprehensive law is an effective way of approaching chemicals policy?

- Is this easier to organize than single-chemical policies?
- Was it harder to pass, because of provisions to restrict and phase-out priority chemicals?

In your opinion, what are the factors that have contributed to Maine taking a leadership role in Safer Chemicals Policy among states?

Safer States recently put out a report about the bipartisan voting records for safer chemicals policies the United States. Does the process seem bipartisan to you, as someone who is working from within the agency?

- Is it more bipartisan than other environmental policies?
- If so, why do you think that it might be more bipartisan?
- Do you think that this will help the process remain strong, despite the new administration?

Do you think that the level of public involvement and interest in safer chemicals policy is comparable to public involvement in other environmental policies, or other state policies?

Implementation of the Kid Safe Products Act:

What do you think about the pace of implementation? Does it seem to be working well?

What constraints, if any, exist to effective implementation of KSPA?

Are there certain parts that seem to be working better than others?

- Is there anything that you would change to improve the process?

Are there lobbying groups that tend to be particularly active, including both pro-priority chemical restriction and anti-chemical restriction?

- Do they have a big impact on how the policy develops?

Does it seem as though there is much information sharing between states?

It seems as though states are forging their own paths on chemicals policy. From your perspective, is there much state communication and coordination?

Has Maine looked to other states or countries for guidance on implementation of KSPA?

Future Direction of the Kid Safe Products Act:

Where do you see the work on Safer Chemicals Policy moving within Maine, with the new administration?

- Do you think that already named chemicals will be revoked?
- Do you think that the naming of priority chemicals will be delayed because of the new administration?
- Can the implementation of priority chemical regulation be delayed because of the new administration?

Interview Questions for Cathy O'Dell
Minnesota Pollution Control Agency

March 14th, 2011

Connection to Toxic Free Kids Act:

What is your position at the MPCA?

How have you been involved with the Toxic Free Kids Act?

History of the Toxic Free Kids Act:

Can you tell me about the history of the MPCA to address toxic chemicals?

Can you tell me about the history of the Toxic Free Kids Act from the MPCA perspective?

Do you know if this was the first time a bill to begin to address the problem of toxic chemicals in consumer products was proposed?

Can you tell me if there has been much citizen or regulated community involvement, submitting comments, ect....

- Is the amount of public participation comparable to the other pieces of environmental policy in Minnesota?

Are there active advocacy groups working on reducing toxics in consumer products in Minnesota? (I saw several environmental health groups represented in the public comments.)

Do you know if the Toxic Free Kids Act was passed with strong bipartisan support?

Implementation of the Toxic Free Kids Act:

What do you think that the biggest challenges or successes have been so far, in the implementation of the Toxic Free Kids Act?

Looking back, are there improvements that you would have made to the policy, or to the implementation process?

Are you aware of any interstate communication to share information and regulatory strategies for the Toxic Free Kids Act?

I read that the Toxic Free Kids Act “facilitates information sharing with other states that have similar laws, in order to avoid duplicating efforts” would most of this information sharing be conducted through the interstate chemicals clearinghouse?

Future Directions for the

Toxic Free Kids Act:

Have there been any thoughts about implementing regulations to restrict or phase out priority chemicals in Minnesota?

Does it look like the Policy recommendations in the December 15th, 2010 report will be considered?

Moving forward, does it seem as though budget constraints will influence the next steps for the TFKA?

Can you tell me about Minnesota's green chemistry approach?

Can you tell me about the Minnesota Environment Initiative, and how it is working so far?

Has Minnesota begun to look for safer alternatives to Chemicals of High Concern or priority chemicals?

Interview Questions for Nancy Rice

Minnesota Department of Health, Environmental Health Division
February 17th, 2011

Connection to the Toxic Free Kids Act:

What is your position at the Minnesota Department of Health? What other kinds of projects do you work on?

How long have you been involved with the Toxic Free Kids Act putting together chemical lists?

Implementation of the Toxic Free Kids Act:

Can you describe the implementation process for the Toxic Free Kids Act?

- How many people are directly involved with the implementation?
- How are safer alternatives researched?

Do you think that there are benefits to creating a piece of legislation that sets up the process for phasing out the most harmful chemicals, rather than going through chemical by chemical?

Can you describe the process of putting together the chemical lists? I did read the report of the methods (which states were consulted, which standards were used)

There is a certain set of criteria for priority chemicals, so at this point is most of the work searching through previously established lists?

- Is it redundant to still be doing literature searches? (government sites, reading through literature, from publicly available information)?

TSCA trade secret info isn't available to state agencies is it?

Has there been inter-state cooperation coming up with priority chemical lists and figuring out how to implement the act?

What is the inherent difference in considering "hazard" or "risk"?

- Do other states consider "hazard" too, as compared to "risk" when coming up with chemical lists?

Have you worked with other states or governments for information sharing or guidance for the implementation of the Toxic Free Kids Act? If so, which ones?

What do you think the successes of this piece of legislation have been, as someone who works on it?

- Is there room for improvement?
- What could be done to make the process even better?

Future Direction of the Toxic Free Kids Act:

Since submitting the December report with recommendations, has there been any indication about what the next steps will be for implementation? And, how soon the next steps will take place?

Have any chemicals been restricted or phased out yet? Are there plans to do so? Is there a process for doing this?

What are your thoughts about a National Reform of the Toxic Substances Control Act?

- Do you think it would be better for states and industries to have a more uniform standard?

- Do you think that it might weaken Minnesota's state policies?

History of the Toxic Free Kids Act:

Was there active inter-state communication that helped to develop the Toxic Free Kids Act?

Has there been citizen involvement or concern driving the legislative process?

- If so, is this a similar level of involvement as there has been for other pieces of legislation within your department?

Was this bill passed with bipartisan support?

Was it the first time a bill like this had been proposed and passed?

Are there well-known advocacy groups that have been involved with the Toxic Free Kids Act?

In Maine there has been significant chemical industry opposition to the Kid Safe Products Act, is this also the case in Minnesota?

Interview Questions for John Williams and Holly Davies
Washington Department of Ecology
March 2nd, 2011

Connection to Children's Safe Products Act:

Could you tell me about how you are connected to Washington's Children's Safe Products Act?

History of Children's Safe Products Act:

Can you tell me a bit about the history of environmental policy in Washington to address toxic chemicals?

How does Washington's Children's Safe Products Act fit into the Department of Ecology's current work to reduce and phase out PBTs?

Can you tell me if there were significant reports/findings that contributed to the passage of the Children's Safe Products act, in terms of biomonitoring studies or economic analysis?

Can you tell me what happened when the first part of the Children's Safe Product Act (to phase out phthalates, lead and cadmium) was pre-empted by the Consumer Product Safety Commission?

- I see that Washington supports TSCA reform, and has signed onto the principal for a strong TSCA reform. Does the Department of Ecology see danger in a weak TSCA reform that might pre-empt state action?

Can you tell me if the Children's Safe Products Act in Washington has received public interest? (from citizens, advocacy groups or lobbyists... in public hearings or public comments?)

- Do you know if the level of interest is comparable to other environmental bills in the state?

Can you tell me about the level of support for the Children's Safe Products Act within the State Government? (Governor, legislators?)

Implementing the Children's Safe Products Act:

Do different state agencies work together to implement the Children's Safe Products Act?

How many people are working on the Children's Safe Products Act within the Department of Ecology?

How did the pilot rule and the advisory group work?

Can you tell me about how Washington is approaching the question of how to regulate Chemicals of High Concern?

- Can you describe how Washington's list of Chemicals of High Concern to Children is created and the purpose of the list?
- What is the reason for having 50 chemicals on the list?
- Has anyone submitted a petition to the department to add a chemical to the list? Or to remove a chemical from the list?

What is the current status of the Children's Safe Product legislation?

- Has the Department been started gathering data from manufacturers?
- What have been the biggest challenges with putting together the list and beginning to implement the Children's Safe Products Act?

Do you know if Washington has participated in much interstate communication and collaboration around chemicals policy?

- Are there states that have been helpful in crafting Washington's policy?
- Have other states looked to Washington for information to craft their own chemicals policies?

Can you describe how the Department of Ecology is working with businesses to limit and manage their use of toxic chemicals?

Future Directions for the Children's Safe Products Act:

Where does the proposed bill to strengthen the Children's Safe Products Act stand?