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Welcome Back

Welcome to the second issue of the *Roosevelt Review*, the Roosevelt Institution's flagship publication. When we said these words last year at our first annual conference, our evident excitement in saying them was overshadowed only by the fact that we were Roosevelt's only publication. This is no longer true, thanks to the developments of a productive and exciting last 12 months.

On returning to school last fall, the chapters which began organizing the year before were ready to unveil themselves to their campuses and begin operating in full. In rapid succession, major launch events took place at over 15 schools, from University of California at Berkeley to the University of Chicago. Each was attended by hundreds of students, and, with the visibility and influx of energy and manpower that came with this, these chapters moved from building think tanks to being think tanks. At the same time, fledgling chapters developed and grew at 30 more schools, and the total number of schools where our students are working grew to over 150.

These developments were not without tangible results. In policy conferences such as the University of North Carolina's addressing emergency preparedness and relief, the University of Texas's conference on poverty, the Brown-Yale conference on public health, and ones not tied to any single issue such as the University of Georgia's and Yale's, we delivered and disseminated the policies that we began developing this year and last. In between these conferences, chapters held symposia to train students in effective policy writing, offered their research to activists and policymakers and inspired them to act on it, and worked to establish firm roots in their local communities.

The last year saw exciting developments at the national level as well. On the heels of our first annual convention at the Roosevelt National Library in Hyde Park, we distributed the first *Review* to every congressman on Capitol Hill, every governor, to major think tanks, media outlets, and to thousands of politically engaged citizens across the country. The accompanying press luncheon on capital hill garnered articles in the *Los Angeles* and *Washington Times*. Two months later, in conjunction with the Policy Studies Organization, we published our second journal, a special issue of the *Review of Policy Research* focused on fighting poverty. To this publication and the *Roosevelt Review,* through exciting new partnerships we added *Brown Policy Review,* as well as the *Internationalist* (www.int-mag.org), a webpage and quarterly magazine focused on students discussing global issues for students.

All of these efforts and developments will come together at our first annual policy expo on August 2, 2006 and our second annual convention in Hyde Park. More immediately to the case at hand, these developments have ensured that the pieces filling the pages that follow continue to uphold the standards for insight, originality and quality established by the first issue last year. From examinations of America's food aid policies, to discussions of the impact of the global gag rule, to proposals to develop the type of microbicide which Jenny Tolan argued for so eloquently in our last issue, we are confident that you will be engaged, informed and occasionally challenged by the articles inside. As with last year, we hope that you, our readers, find these to be interesting, insightful and helpful discussions, and, again, we hope that you can also see them as case studies in what students can offer to current political debates.

All in all, welcome back to the *Roosevelt Review*. It's good to have you.

Sincerely,

Caitlin Howarth, Joshua Reidel, Oliver Schulze and Jesse Wolfson

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Katrina vanden Heuvel
Ambassador William vanden Heuvel
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13 Bridging the Gap Between Social Services and Schools

Christy Baker-Smith and Melia Repko

Despite the existence of many federal and state programs aimed at providing healthcare and social services to uninsured children, many children continue to fall through the cracks. In last year's *Roosevelt Review*, Hausauer et al examined express lane eligibility policies as a response to this—one of several solutions that have gained currency in recent discussions. We examine a range of such solutions, theirs and others, and find none of them to be optimal with regards to ensuring efficiency, adequacy of care, and self-sufficiency on the part of families. In response, we propose a system of care approach, using one recent such program in Indiana as a model and Santa Clara County as a proposed recipient of this new model.

29 Risk Communication among Non-Clinical Healthcare Employees: The Key to Preserving Infrastructure in Medical Emergencies

Kevin Chang, Lindsay Looft, and Deep Shah

Risk communication among non-clinical hospital employees is crucial to ensure worker attendance during a medical or bioterrorism crisis and maintain a functional hospital infrastructure. The Department of Health and Human Services, through the CDC, should be responsible for developing such communication efforts. Anthrax and a pandemic strain of avian flu are two diseases that should be immediately addressed by risk communication curricula. Each poses unique threats, but both carry the risk of severe infection. A heightened awareness of this risk, and of ways to protect oneself and others from it, will ensure a feeling of safety and trust in workers' facilities. Considering the effectiveness of self-directed workbooks and personal communication in hospitals, the overall expense would be minimal compared to the potential costs of recuperating from lack of human resources in a medical emergency. To supplement and reinforce

these risk communication efforts, non-clinical workers should be vaccinated to the extent possible, shielding against infection and buoying worker confidence in personal safety.

43 A New Environmental Priority: Keystone Species Conservation

Brandon Cortez

Conservation biologists should focus on keystone species as an effective technique of conservation. Healthy keystone species not only promote the integrity and continuity of the complex of species within their environment, but can also stimulate political action through the appeal of species charisma. The eastern red-backed salamander is one such species that ought to be considered keystone and targeted for conservation. This species' role in the middle of the food chain in Mid-Atlantic old-growth forests contributes to carbon sequestration, water purification, trophic chain stability, and biodiversity preservation. Conservation advertisement strategies should focus on these benefits in order to draw attention to current global amphibian decline and to the power of species-level conservation. Research should focus on identifying keystone species that could serve a similar role. Legislation promoting amphibian keystone conservation is recommended.

55 U.S. Food Aid: A Humanitarian Program?

Corinne Ramey

The United States contributes nearly half of the food aid distributed worldwide each year, and current policies have made this aid both a blessing and a curse to the societies which receive it. Due to the influence of several groups – U.S. agribusiness, shipping companies, and private voluntary organizations (PVOs) – U.S. food aid policy is designed to help these organizations as much as it is to help those suffering from chronic malnutrition worldwide. This paper examines the efficacy of three proposals to address the current problems:

- Maintaining the status quo after minor reform
- Eliminating monetization and in-kind aid and distribute only cash donations
- A compromise policy in which monetization is gradually phased

out and food sustainability is examined as a larger development issue.

It concludes that the last of these is most promising.

75 Gagging Women's Rights: The Politics and Health Outcomes of the Mexico City Policy

Anny Lin

Upon assuming office, the Bush administration reinstated the so-called 'Global Gag Rule' which prevents all organizations which receive funds from the United States Agency for International Development (USAID) from in any way promoting or encouraging abortion as a family planning tool. The net effect of this policy, as its name implies, is to silence speech and discourse, thereby preventing millions of women from making informed decisions about the care they seek. This policy is inconsistent with America's stated international commitments and domestic practices, and should be abandoned.

87 Pushing for Research and Pulling for Change: A New Perspective on HIV/AIDS Microbicide Development

Rachel Hansen, Emily Morell, and Robert Nelb

As the HIV/AIDS pandemic continues to evolve, innovative strategies are desperately needed. Young married women in developing countries are at particularly high risk. In rural South Africa, for example, these women are 75 percent more likely to be HIV-positive than sexually active unmarried girls, according to the 2005 edition of the *Roosevelt Review*.[1] But there is hope with microbicides , a topical product applied by women before intercourse that theoretically could to prevent HIV and other sexually transmitted diseases (STDs). According to conservative models, introduction of an effective microbicide in developing countries could avert an estimated 2.5 million HIV infections over three years.[2] While by no means a panacea, microbicides are a worthwhile investment for us all.

Large upfront costs and low financial returns on investment have historically been major barriers to microbicides and most other preventative technologies aimed to assist disadvantaged

populations; however, with the right combination of structural and financial catalysts we can move this important research forward more effectively.

Economic insights from vaccine development suggest two broad methods to encourage investment in microbicides: "push" and "pull" mechanisms. A push mechanism helps reduce financial risk, while a pull mechanism offers to increase future returns. This report explores both methods in depth and offers recommendations for framing and prioritizing microbicide investment.

Applying this broader perspective will make the development of an effective microbicide a key step in the fight against HIV/AIDS.

[1] Tolan, Tolan, "Voices from Rural South Africa: Married Women and AIDS Vulnerability: Moving Toward Female-Controlled Prevention," *Roosevelt Review* 1 (2005): 71.

[2] Brown, G et al., *Mobilization for Microbicides: The decisive decade*, 2002, The Rockefeller Foundation, October 23, 2005, http://www.microbicide.org/microbicideinfo/rockefeller/mobilization.for.microbicides.english.pdf.

Bridging the Gap Between Social Services and Schools

Christy Baker-Smith and Melia Repko

Many children endure childhood without the benefits of health insurance or access to social services. Research shows that children in poor health or who feel unsafe in their home environment often do not perform as well as their peers in school.[1] In light of this research, the number of uninsured children in our nation's schools is disconcerting. Perhaps even more disturbing is the fact that programs aimed at providing insurance to children in need exist in every state, and are also funded by the federal government, yet these children still go untreated.

Disproportionate concentrations of uninsured children attend low-income schools. These are schools where teachers struggle to provide quality instruction to students whose signs of hunger, sickness, and fear make teaching and learning seem trivial in comparison. Students exhibiting health and safety concerns in low-income schools frequently go unnoticed and untreated unless their problems become significantly worse than other students in the school. In many cases where children have been identified, overworked employees at understaffed children's social service agencies cannot adequately serve the children assigned to their caseloads. These agencies operate independently from each other, which further complicates matters for families needing more than one agency at a time. Families can easily become overwhelmed with paperwork, caseworkers, and doctors' appointments. The fragmentation of social service agencies is frustrating and burdensome for families that already have enough to worry about.

In instances where children are not involved with social agencies, lack of healthcare can usually be attributed to more than one

factor. Some children's parents possess little or no information about options that could improve their children's access to health and social agencies. Other parents do not understand the intricacies of the application processes for health service providers. Language barriers present significant difficulties when filling out paperwork, scheduling healthcare appointments, and explaining personal and familial needs to healthcare workers. Traveling to doctor's offices and health agencies is not easy if modes of transportation are limited. Each of these obstacles is among a list of factors prohibiting some children from receiving the healthcare they deserve.

When children suffer, society suffers. As concerned citizens and responsible adults, we have an obligation to ensure that all children are healthy and able to realize their full potential. We must advocate for children and provide them with tools that will increase their chances of succeeding socially and academically. Although such sentiments are often voiced, there has been little impetus driving the actual achievement of these goals. If the link between health and student achievement bears any weight, *No Child Left Behind* could have a significant effect on children's healthcare access. Accountability could produce a strong motivation for schools to work harder to alleviate the health and safety problems of students.

Inadequate health service provision for children is a problem nationwide, but since social services concentrate their efforts at a county level, we propose a policy solution at the county-level, which can then be implemented state- and nation-wide county by county to create cohesion and continuity in every community. We will use Santa Clara County as our example. Within Santa Clara County, there are 32 public school districts with students in preschool through twelfth grade. School district data is instrumental in locating the children most in need of health and social services.

A successful social reform should result in ameliorating the problem or difficulty surrounding the focus of the reform. The focus of this policy proposal is to increase children's access to health and social services, using school as an integral player in the process. Specifically, we direct our recommendations towards:

- Provideing adequate health care for uninsured and qualifying children[a]

[a] By "adequate care", we refer to the American Academy of Pediatrics (AAP) definition of a "medical home." According to AAP, a "medical home" should contain certain essential elements. Expressly, the medical care of infants, children, and adolescents should be "accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective" (AAP, 1999: v.104 p.980). The primary care for these children should come from trained doctors who are "known to the child and family and...able to develop a partnership of mutual responsibility and trust" (AAP, 2001: p.7). We will further explore the "medical home" in policy alternative 5: the system of care approach.

- Implementing an efficient method for linking healthcare services and social services to children in need.
- Teaching students and parents self-sufficiency related to accessing health care and social organizations.

When considering a suitable policy alternative, we will judge possible options using the criteria outlined in the three aforementioned goals. We intend for the policy to be efficient, adequate, and to add to the social cohesion of the residents living within the Santa Clara County by promoting self-sufficient families.

1. Problems with Maintaining the Current System

In maintaining the current system, children will receive health and social services if their parents know about the options available. Schools will rely on teachers, nurses, and administrators to deal with children in need. The benefit in continuing the current system is that in doing so, no additional resources related to children's health care access are required. There will be no start-up costs, training costs, or facility costs. However, in maintaining the current system, the status of many uninsured children remains unchanged. The current system attempts to fix problems (often unsuccessfully) as problems make themselves known—in no way is this a preventative approach to children's health care.

Furthermore, the current system does not address our goals of adequacy, efficiency, and self-sufficiency. First, adequate care, is not met: large numbers of American children are not insured or served by social health agencies.[2] Second, most often healthcare and social agencies do not operate in tandem; consequently, maintaining the current system is not an efficient way to provide health and social services to children. Finally, parents, schools, and communities are relying on unqualified agents—teachers, nurses, and administrators—to address needs that should be met by qualified providers of health and social services, and therefore, parents and students cannot become self-sufficient.

A glaring problem with the current system is that it is not widely accessible, nor does it clearly state children's rights regarding health and social services. Studies on the accessibility and clarity of social agencies' intended goals show that many agencies do not consider their target audience. For example, Busch and Folaron's 2005 study of welfare agency mission statements reports that mission statements largely have readability levels at the twelfth grade or higher. The target audience of welfare agencies does not read at this level, and therefore cannot access this

information. This study is only one example of how state and federal agencies do not successfully disseminate information to those that need it most.

2. The Insufficiency of Teacher Monitoring

One set of suggested proposals involve teacher monitoring, wherein teachers would be the link between students and health care providers. Under these proposals, teachers would, on a weekly basis, use a computer-graded survey to assess student mental and physical health. The computer-grading would take place immediately, alerting the teacher of any significant changes in student health. The teacher would then contact the appropriate agencies to provide services to the children under alert. Although this system does not directly *access* adequate health care for children, teacher monitoring could be an efficient way to prevent larger health problems. Teacher monitoring utilizes a resource (the teacher) that has daily contact with students. The student-teacher relationship could make it easy for the teacher to conduct in-depth and frequent assessments of his or her students' health. Teachers could make note of small problems, and direct students to the proper services before the problems become exacerbated.

Yet, in terms of our goals of of adequacy, efficiency, and self-sufficiency, teacher monitoring only slightly addresses adequacy and efficiency and completely fails to meet our criteria for promoting student and parent self-sufficiency. In fact, parents could start to *rely* on teachers to connect children with appropriate providers since the teachers are responsible to 'monitor' their health. In result, monitoring might actually discourage parental involvement. Furthermore, in cases where health needs are not met, parents could also blame teachers for failing to meet the needs of their children.

Aside from failing to fulfill our goals, teacher monitoring would also require large amounts of teacher attention, energy, and *time*. Teachers would need to willingly participate, and parents would have to allow for the teachers to implement this program. Even if such agreements are reached, teacher monitoring would require time and money to develop a standard computer-graded survey to assess student health. Professional development would be necessary to explain the new responsibilities to teachers, including a detailed explanation on how to perform weekly student health assessments. Most importantly, there would have to be time in teachers' schedules to allow them to complete the computer surveys

and respond to the data. In light of these, teacher monitoring offers some useful ideas, but, standing alone, this policy would cause more problems than it would solve.

3. Service Strip Mall Solution: A Costly Utopia

Coordinating health visits for children can be a daunting task, especially with the time and transportation constraints that many low-income parents face.[3] A "service strip mall" would provide all health and social services in one location. Service location integration aids families in fulfilling the adequacy criteria desired for this policy adaptation. Furthermore, a locale with all services in the same place would eliminate the need to drive to various places to receive health care. Services would not only be geographically linked, but would also have the opportunity to link together logistically. This system has the potential to foster a more cohesive professional community among health and social service agencies. Such a community would support children's needs, while helping agencies meet their own objectives. If all health and social agencies were in one location, these organizations would be more inclined to collaborate and to refer clients across services. Consequently, clients would become educated about the services to which they are entitled. After families accustom themselves with the service strip malls, they may become self-sufficient in accessing health care services, particularly if we further increased the availability of these services to families.

However, some inherent difficulties beleaguer this proposal. The largest one is cost. In order to create a strip mall of services, a suitable location would have to be determined and purchased. The costs of construction and development could be quite high, and may not commensurate with the benefits of these services. One way to off-set the construction costs could be to use schools after hours to deliver services. Yet, given the current demands placed on school professionals and school facilities, the additional ones that this proposal entails make school-site service delivery an unlikely solution.

Not only would the initial start-up costs of a service strip mall be high, but the likelihood that the site could be staffed is unpredictable. Health and social agencies would have to be willing to spare staff to work at the site, or a new staff would have to be hired for each service provider. Even if the service strip mall eliminated the difficulty of supplying enough workers for the services offered, another problem is raised: unless each agency coordinated schedules so that children could see all

necessary providers in the same day, travel arrangements and time requirements remain problematic for parents.

4. Identifing Children who Qualify for Medicaid and SCHIP Via School Enrollment: An Ineffective solution

According to the American Association of Pediatricians,

> Health insurance is a critically important determinant of access to and use of health care services among children. The uninsured are 3 times as likely as the privately insured to go without needed medical care. Uninsured low-income children are 4 times as likely to rely on an emergency department or have no regular source of care.[4]

Programs that use government funds to provide health coverage for qualifying children have existed for forty years. Medicaid, established in 1965, is jointly funded by the federal and state government. Medicaid's goal has been to provide health insurance specifically to children, adults, and families with dependent children. Another government funded program is the State Children's Health Insurance Program, or SCHIP, which was designed in 1997. SCHIP allows for individual states to decide eligibility and coverage requirements for children.[5]

The American Academy of Pediatrics clarifies the inefficiency of Medicaid and SCHIP programs' coverage by stating that "9.2 million children 0 through 18 years of age were uninsured in 2002, of whom 4.1 million were eligible for Medicaid and 2.4 million were eligible for SCHIP programs."[6] Fortunately, Congress recently voted against a budget proposal aimed at cutting Medicaid funding for children. However, if parents continue to fail in taking advantage of available Medicaid funds, the possibility of losing funds looms.

Due to the school site's presence as one of the unifying structures in a neighborhood or community, using schools as an aid in helping parents to determine insurance eligibility for their children would make sense. Low-income areas where the number of uninsured children is quite high would greatly benefit, as would parents in all schools. Everyone would be provided with a solid understanding of the laws established to help serve children.

We propose parents receive information about Medicaid and SCHIP

through student school enrollment for grades pre-school through twelfth grade. By linking Medicaid and SCHIP enrollment to the school enrollment process, families would be more likely to know when they qualify for Medicaid and SCHIP, and to utilize the services provided. Since families already disclose their income in order to qualify for Title I funds—particularly for free or reduced lunch—inquiry into parental income figures is not a new idea. Disclosure of such information would serve the sole purpose of determining children who may qualify for a special service—whether it is free or reduced lunch or health care access.

Because the only way to identify eligible candidates for Medicaid and SCHIP is through parental-report, we can safely assume that many children go unidentified because their parents do not understand how government insurance programs operate, or in some cases, that these programs even exist. As the Committee on Child Health Financing notes,

> [A]ccording to a study funded by The Robert Wood Johnson Foundation, [s]ix of 10 parents of uninsured children think that because they work and are not on welfare, their children do not qualify for federal health programs. Four of 5 parents said they would enroll their children in federal health programs if they knew they were eligible.[7]

Language barriers, low literacy levels of parents, and lengthy forms to fill out do not make the application process easy for many parents. Information about Medicaid and SCHIP must be disseminated in a more effective way; otherwise, children will remain uninsured.

Application forms for Medicaid and SCHIP require revision—confusing terms and conditions need to be reworded in a user-friendly format. Parents who wish for assistance when signing up for Medicaid and SCHIP should be provided with the necessary aids, such as personal assistance or translators. Staff at the school site would be prepared to assist parents as needed with applications. Using school enrollment as a mechanism for Medicaid and SCHIP enrollment may ensure that more children access the government aid that they need.

In the alternative scenario proposed above, schools would merely be stepping stones in affecting change. The system would still require parents to represent their income. One potential difficulty is that parents must *want* their children to receive the government aid and be willing to exert effort to ensure this goal. Parents would need to take care of scheduling appointments and would be responsible for the long-term management of their children's health care. Also, although this alternative does provide

accessibility to the programs that insure children, it does not make access to the actual agencies any easier.

In light of the above, Hausauer et al, in "Medicare, Medicaid, SCHIP, and the Future of America: New Strategies for Improving Access to Health Insurance for America's 8.5 Million Uninsured Children", propose using "express lane eligibility" (ELE) programs, whereby application for one program, e.g. subsidized lunches, automatically leads to applications for related social service programs. Several states have implemented ELE programs, and, as Hausauer et al noted, the Senate Finance Committee is currently reviewing such a program in the Children's Express Lane to Health Coverage Act of 2003 (S. 1083). This bill, if passed, could have a significant impact. However, that it still remains in committee, indicates that a county by county approach, such as we propose, should be pursued in that, at the least, it does not rely on the federal government to implement change. Transportation, scheduling and understandings of prescribed personal home-care will not be clarified through the translation of applications for funding.

In either ELE programs, or the more general proposals for school-centered enrollment, increased work for employees at the school sites, particularly during registration, may interfere with the efficiency of the school. Should public schools become involved with accessing health and social agencies for students, or should the focus of public schools concentrate solely on education? This question is not an easy one to answer. Administrators could end up with a laundry list of complaints from aggravated teachers and parents.

When reviewing this set of policy alternatives, we find that they do not ensure adequate health care to all children, nor do they fully link the school to health and social agencies. In the non-ELE programs, while parents may learn to be more self-sufficient after becoming familiar with the rules and requirements of Medicaid or SCHIP, this familiarity will not happen overnight. The ELE programs address this, but their continued delay in the Senate suggests that other approaches are needed as well. As such, we do not foresee that the program would fully meet the goals of adequacy, efficiency, and self-sufficiency.

5. A Model for Santa Clara County: A System of Care Approach in Marion County, Indiana

By definition, a system of care approach is "the process of agencies joining together for the purpose of interdependent problem solving which

focuses on improving services to children and families."[8] Instead of social agencies working separate from each other to meet goals, a system of care approach enables social agencies to develop symbiotic relationships among other agencies and with the communities served. The system of care approach has been operating in parts of Indiana since 1997 and successfully achieved two of its primary goals:

- To keep families in tact and prevent children from unnecessarily being moved to residential institutions for emotionally, mentally, or socially troubled youths.
- To teach families coping mechanisms and positive methods so they will become self-sufficient in the future .

Anderson, Meyer, Sullivan, and Wright's study, *Impact of a System of Care on a Community's Children's Social Services System*, focused on the impact of a newly implemented system of care program called the Dawn Project in Marion County, Indiana. The Dawn Project began in 1997 as an attempt to improve the fragmented system of children's social services in Marion County. It was designed to "replace this de facto social services 'system' with a coordinated, rational, and proactive child and family centered network of care."[9]. The Dawn Project worked through Choices, Inc., a larger agency that "creates and guides supportive care programs for community members in need of help."[10] While these services are designed for children with mental health difficulties, this model can be adapted to support children who suffer from poverty related ailments.

This project has spread throughout the United States and now has 64 active systems of care communities. The Dawn Project is based on the model of a program in urban Indianapolis, Indiana, whose student population is 70 percent Caucasian and 25 percent African American.[11] This population is quite different than most in California where the percentage of Caucasian children is much smaller and the percentage of Latino and Asian American students larger. Santa Clara County's student population, for example, is only 55 percent Caucasian, 29 percent Asian American, and 15 percent Latino.[12] Although it may be a different demographic, it is important to note that some of these systems of care have already been successful in California.

The Dawn Project uses community coordinators to assist families in accessing social services for their children in a more cohesive way. While many of the current fragmented systems require families to interact with each social agency individually, the coordinator in the system of care approach is the representative for any social agency that works with the child. In this manner, the family primarily interacts with one person who is familiar with all the needs of the child—similar to the 'medical home.'

Anderson's study. found that the most significant effect of the implementation of the Dawn Project was increased collaboration between social agencies and service coordination at the community level. Increased family involvement within the social services system, an increase in the communities' belief in strength-based approaches (helping families to be proactive in working with their children's struggles), and an improvement in the overall environment of the child affected were also discussed. Additionally, the burden to medical providers was reduced through the reliance on those who have direct daily interaction with the children.[13]

Of course if these systems of care are to work, there must be a supply of community coordinators whose work is effective. Although ensuring this supply sounds daunting, it may not be as difficult as it seems. There are many existing community agencies that already employ community coordinators, many of which would welcome the opportunity to create a more cohesive system. The creation of a system of care for an individual community, particularly with the already existing supports, simply takes the knowledge of a few individuals. Training programs for this specific systems of care approach exist in several states, but there are also programs at almost every institution of higher education that could and do prepare public service workers for this type of mission. The training programs provided for the Dawn Project's approach are specifically trained to deal with mental health. If the existing professionals in social work and community collaboration can pool their resources, there doesn't need to be more training, simply more knowledge of this type of career path within higher education institutions.

Our System of Care Model

The system of care approach efficiently operates in Marion County by opening the lines of communication between social agencies and the coordinator that represents them. Children receive the services they need in an adequate and efficient manner, and families have been introduced to positive, self-sufficient strategies for handling the unique social and emotional needs of their children. For these reasons, we believe that a system of care approach would benefit the residents of Santa Clara County, California.

Choices, Inc., and its associates focus primarily on patients with severe diagnoses. One program uses the following as criteria to determine eligibility: "To be eligible for referral into the…Project, an individual must be homeless or at risk of homelessness, suffer from a substance re-

lated disorder and be diagnosed with a psychiatric disorder."[14] Whereas Choices, Inc., focuses on treating already identified and often severely troubled clients, we recommend a model that uses a more preventative approach.

We propose that each school in Santa Clara County receive one or more community coordinators to assist the school's children and families in accessing the health and social services they need. Each coordinator would be stationed at his or her assigned school full-time, and would be responsible for each child at the school who has been identified as needing health or social services. To ensure efficiency, each coordinator would be assigned a maximum of seventy caseloads, which would be subject to change based on feedback from the coordinators. Additional caseloads would require a part-time coordinator to work with the school. Depending on the needs of each family, the coordinator would assist parents in filling out paperwork, explaining benefits of current or potential insurance policies, scheduling necessary health appointments, and arranging for transportation to take families to and from scheduled appointments. The community coordinator's salary would be paid using funds from both the school district and the state department of education. It is likely that, as in Marion County, monies would also come from social services and public health funding. Additionally, categorical grants could be explored as a potential source of funding.

Through this system of care approach, we also hope to make Medicaid and SCHIP more accessible to parents, but instead of requiring school staff to oversee student eligibility for these programs, the community coordinator will assume the role of providing uninsured children with the health and social services they need. In accordance with the coordinator's usual duties, he or she would assist parents during school registration if they are interested in filling out Medicaid or SCHIP applications.

Coordinators would play an integral role in our proposed system of care approach. Coordinators would enable families to develop a "medical home" for their children, and later instruct families on how to maintain the "medical home." In time, families would be able to self-sufficiently access the resources their children need, and ideally, no longer require the services of the coordinator.

There are, however, some drawbacks. First, since several systems must work together in order for the system of care approach to work, resistance may be unavoidable. One of the difficulties noted in Anderson's study of the Dawn Project was resistance to change, which hindered the pace of progress in Indiana's system of care approach as well as in many other

communities implementing cross-service systems of care. Whenever a large-scale change is implemented in a community, resistance to the change is a natural coping mechanism for some individuals, regardless of whether the change may in fact help the community and its inhabitants. Second, a significant amount of time and money may be necessary to organize and prepare for the community coordinator position. The position requires funding from places that are already strapped for fiscal resources. Additionally, the coordinator would need an office, specifically one that is separated from other school business to ensure confidentiality for families. Ideally, the coordinator would best serve his or her community members if he or she was a bilingual English and Spanish speaker, reader, and writer, but it may be difficult to hire enough qualified bilingual coordinators. To compensate for language barriers, the coordinator may need to enroll in language courses, particularly if the demand for Spanish-speakers is high in his or her assigned community. Aside from language training, the community coordinator would also need to become familiar with the logistics of each social service agency with whom he or she might work. The importance of the coordinator within the system of care approach is such that the system could quickly fall apart if the position is not carefully planned.

Although there are issues associated with planning time and requiring all stakeholders to work closely together, we feel this system of care proposal is best equipped to meet all three of our goals:

- Provide adequate health care for uninsured and qualifying children
- Implement an efficient method for linking healthcare services and social services to children in need.
- Teach students and parents self-sufficiency related to accessing health care and social organizations.

By including elements of other policy alternatives into this plan, we feel we have taken the best possible methods and made an all-inclusive plan that will lead to real change in communities like those of Santa Clara County.

Policy Implementation in Santa Clara County

As Santa Clara or any county works to implement the system of care policy, we feel that it is important that it begin gradually by determining a reasonable number of schools from across or within the county's districts to serve as the pilot group for implementing the system of care approach county-wide. The county would be wise to select schools with competent

administrators and schools with a significant number of students who would truly benefit from immediate access to a community coordinator. The pilot group must take the time to implement this approach correctly in order to achieve any success during the first year of operation, and to ensure the program's longevity. Based on the success of the pilot group, other communities within the county may find more motivation to work within the approach rather than against it. The more buy-in that the system of care receives early on, the more likely that support will grow and that the goals of the approach—adequacy, efficiency, and self-sufficiency—will be realized.

Summer training for all stakeholders would be an important consideration for schools selected to form the pilot group. Using the summer months as a time to inform parents, teachers, administrators, and community members about the new system would eliminate some of the start-up lag that could interfere with the first week of school if the program were not introduced until the start of the new school year. Also, any time spent during the summer to train teachers would free time during the school year for teachers to focus primarily on student education rather than healthcare access. Summer trainings and information sessions may need to be more informal than the usual school year in-service trainings; however, if summer training sessions make stakeholders less likely to resist the change, then the measures taken to plan appropriate training sessions will be well worth the effort.

The summer months would also allow the county to interview, screen, and hire competent community coordinators. These individuals would be required to have no criminal record, be at least 21 years of age, and have a valid driver's license. Coordinators would be trained on the details of their job, as well as the importance of maintaining professionalism and confidentiality when working on or off campus with families. While it may not be a secret which families work with the coordinator, the family's confidentiality must be respected at all times. The coordinators should be able to clearly articulate the three goals of this policy implementation: the system of care approach will provide children with adequate health care access, will efficiently link schools and health and social agencies, and will lead to social cohesion in communities served by encouraging self-sufficiency in families participating in the program.

The system of care approach will be reevaluated at the end of the first year of implementation. Pilot group participants will provide feedback on the strengths and weaknesses of the approach—this includes feedback from teachers, administrators, parents, community coordinators, health and social service workers, and students. Valuing the importance

of all stakeholders' concerns, Santa Clara County will determine whether additional schools or the entire district will participate in the program in the next school year. Decisions on implementation and monitoring will also be made.

Yearly reflections on the pros and cons of the system of care approach will allow for problems within the system to be ironed out early and adjustment for any regulatory changes can also be made. We believe in the importance of taking time to establish a solid policy implementation over the span of a few years, rather than mandating that all schools successfully implement and operate the system of care approach within the first year. The academic and social success of Santa Clara County's children depends on Santa Clara's adults to maintain best practices ensuring that all children experience health, safety, and happiness as they grow up and go on to become contributing citizens of society.

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Risk Communication among Non-Clinical Healthcare Employees

The Key to Preserving Infrastructure in Medical Emergencies

Kevin Chang, Lindsay Looft, and Deep Shah

Introduction

Non-clinical hospital employees play an indispensable role in maintaining a functional healthcare environment. They are a hospital's housekeepers; they are its foodservice and laundry personnel; they are its clerical, warehousing, custodial, security, and supply staff. These workers form an integral part of any hospital's human infrastructure, as their services allow healthcare professionals to provide immediate, quality care. In the event of a disaster such as an uncontrolled disease outbreak or bioterrorist attack, these employees must work alongside physicians and nurses to maintain an intact hospital infrastructure—one that allows for prompt and effective care. Healthcare officials should consider the various roles of non-clinical

workers when preparing for such public health crises. Unfortunately, non-clinical employees are often left without proper knowledge of the risks of biological agents and diseases, and thus may opt not to attend work during a medical outbreak out of fear for their personal safety.[1] As a result, absenteeism of non-clinical workers during a medical emergency could seriously cripple hospital infrastructures, hindering the hospital's ability to effectively manage disasters.

To prevent the paralysis of our hospitals in times of crisis, it is imperative that the Department of Health and Human Services (HHS), primarily through the Centers for Disease Control and Prevention (CDC), fund and develop specific risk curricula to be communicated before such crises occur. These curricula should be used in conjunction with the HHS's existing outlines for preparedness planning, such as the HHS Pandemic Flu Plan, which provide general models of emergency preparedness but do not focus on non-clinical hospital workers. Such risk communication curricula should provide non-clinical employees with empowering knowledge that fosters a sense of safety and ultimately reduces rates of absenteeism. Each curriculum should clearly communicate the general risks of the disease it covers and aim to dispel misperceptions of the two genres of biological threat: terrorism and natural pandemic. A system of state-level matching grants should also be set up to supplement federal funding. This proposal provides a preliminary outline for two such curricula, focusing respectively on anthrax, a biological agent, and on avian flu, an emerging infectious disease. These sample curricula should serve as rough blueprints for the CDC in its efforts to create curricula that cover these specific diseases and other agents that may threaten Americans in the future. Furthermore, to underpin the sense of security that would come with the institution of curricula, appropriate vaccinations should be provided to non-clinical workers. Finally, official records of these vaccinations and treatment should be kept. Our government must take an active role in communicating risk to non-clinical hospital workers to foster a sense of security and ensure that our nation's healthcare systems remain capable during medical emergencies.

Background: What is at Stake

The response to the introduction of anthrax into the U.S. postal system as a bioterrorism agent in the weeks following September 11 serves as one of the most prominent recent examples of the fear a medical crisis can create. This fear directly affected employees at vulnerable workplaces. In

one case, trace amounts of anthrax were found on several sorting machines at Manhattan's Morgan Processing and Distribution Center, the largest mail-sorting facility in New York City. Medical experts publicly stated that the anthrax contamination was isolated and could be managed without shutting down the center or endangering the postal workers.[2] Despite the dissemination of this information, absenteeism among the workers escalated to nearly 30 percent from its normal level ranging from six to seven percent.[3] Without the knowledge of how—if at all—anthrax spreads, without knowledge of the risks associated with infection, workers understandably yielded to their fear. Employee confidence in safety plummeted and a general environment of insecurity developed. As a result, Morgan's facilities were unable to function in their normal capacity. A similar scenario at a healthcare facility would have resulted in much more than poor mail delivery: it would have put human lives at serious risk. The parallel between the postal workers and non-clinical hospital employees lies in their mutual lack of scientific understanding of anthrax or any other potential agent of bioterrorism. For this reason, it is clear that non-clinical workers in a hospital would act similarly whether there were a bioterrorist attack at their hospital, or their hospital were treating a large number of victims of such an attack. Leaders in the Morgan Processing and Distribution Center and in hospitals have not done enough to educate and empower all their employees. They must do more to ensure successful responses and operations.

There is no reason to believe that this display of fear-induced absenteeism is exclusive to biological terrorism. Consider a 1994 incident in Surat, India—a city with close to three million residents—in which a serious, naturally occurring infectious disease caused an even greater sense of panic. Upon initial reports of pneumonic plague, an unusual presentation of a deadly disease, 80 percent of the city's private physicians fled.[4] Physicians in both India and the United States are equipped with a profound scientific knowledge of diseases through their medical education. If physicians can behave in such a manner, it is logical that any hospital's less-trained non-clinical employees will exhibit high absenteeism rates in a similar situation.

An infectious disease outbreak or large-scale attack with any bioterrorism agent within any community would almost surely result in high absenteeism among its hospital's non-clinical workers, seriously inhibiting the hospital's ability to manage the event. Susan Waltman, the senior vice president and general counsel of the Greater New York Hospital Association (GNYHA), elaborated on the potential for ab-

senteeism in an interview. GNYHA represents over 250 hospitals throughout the state of New York, New Jersey, Connecticut, and Rhode Island. Waltman explains:

> GNYHA's experience during the anthrax attacks, and in planning for a number of possible infectious disease outbreaks, demonstrates that healthcare workers want to know that both they and their families will be safe if they report to work. Therefore, we are very concerned that a significant portion of our workforce will not be willing either to report to work or to stay at work in the event of an unusual infectious disease outbreak unless and until we can provide them with accurate information, assure them we will take steps to make sure they are safe, and provide them with prophylaxis and treatment, to the extent available.[5]

While American hospitals have not faced many unusual infectious disease outbreaks in recent years, they must be prepared to handle the looming threats of pandemic flu and bioterrorism. HHS estimates an avian influenza pandemic could result in at least a 25 percent increase in demand for inpatient and ICU beds.[6] It is unlikely that sufficient auxiliary staff could be organized to control the situation, and the quality of patient care would almost certainly suffer. Fortunately, proper risk communication can counteract the severity of such problems.

Workers, Risk, and Fear

Non-clinical hospital workers must clearly understand the risks of their workplace and occupation in order to maintain hospital infrastructure. Unfortunately, many do not. For instance, in a survey of Virginia-area hospitals, the Institute for Innovation in Health and Human Services at James Madison University found that non-clinical hospital employees are typically unfamiliar with risks of specific diseases.[7] This lack of familiarity can be detrimental to hospitals. As Craig Thorne of the University of Maryland Medical Center writes:

> The unaddressed questions and fears of non-clinical para-professional hospital workers could threaten the achievement of a hospital's mission through several avenues including: (1) high absentee rates during a terrorist event as workers question whether they want to put themselves in harm's way; (2) increased staff turnover in light

> of uncertainty about job safety or concern with their workplace itself being either a target or a gathering site for contaminated or infected victims; and (3) perceived inequities in health protection such as the distribution of vaccinations or antibiotic prophylaxis.[8]

A recent survey conducted by Columbia University's Mailman School of Public Health and GNYHA of more than 6,000 healthcare workers from 47 healthcare centers in New York City strongly echoes Thorne's hypotheses, finding that employees are less willing to attend work in the event of a major medical emergency. The study reports that only 61 percent of all employees, both clinical and non-clinical, state they are willing to report to work in an event involving a bioterrorism agent, such as smallpox. An even fewer 48 percent of employees surveyed express a willingness to attend work during an outbreak of an infectious disease such as SARS.[9]

It is clear that non-clinical workers do not always understand risks associated with certain diseases, and that this lack of understanding harms hospitals. But is accurate risk communication sufficient to correct the problem? Studies suggest that it is. Thorne's study of 191 non-clinical healthcare workers in the Maryland Health Care System found that employees are more comfortable reporting to work in the event of a bioterrorism epidemic after having received some form of risk communication.[10] The same study found that self-directed workbooks—an extremely cost-effective form that the risk curricula we offer later in this proposal could easily be adapted to fit—to be as effective as less economical mediums, such as director-led group seminars.[11]

It follows that a sense of self-efficacy among non-clinical workers is essential to alleviating fears—workers must feel confident in their security and their ability to protect themselves. Hospital employees are certain to express serious concerns about potential threats to their health. The purpose of risk communication should not be to dismiss any fears regarding epidemics, but to elucidate and stress any and all means of reducing risk and ensuring safety. Risk communication is most effective when employee fears are accepted as rational and equally rational solutions are offered.[12]

Creating and Communicating Effective Curricula

The CDC, a division of HHS, currently prepares information for hospitals regarding emergency preparedness, such as its "Bioterrorism Readiness Plan" and multiple video webcasts, all of which it directs toward clinical employees.[13] As a result, the CDC, which already has strongly established

relationships with a variety of healthcare organizations across the nation, is the logical agency to assume the responsibility of providing advice and guidelines concerning comprehensive risk communication curricula and to disseminate this information to all hospitals, public and private. This distribution of material would serve as another component of the CDC's Office of Communication's existing Emergency Risk Communication Program, which focuses mainly on terrorism preparedness.[14]

These curricula must be delivered preventatively—not in response to specific medical epidemics—for it would be significantly more challenging to adequately address employees' concerns in a crisis environment. Every curriculum must include all known risks associated with each disease, including early signs of infection and any latency period. Additionally, it is necessary to discuss all means of reducing the risk of infection, including the use of basic personal protective equipment such as gloves and masks. A curriculum must also outline procedures for caring for oneself in the event of infection. While HHS has already outlined an emergency preparedness plan for healthcare facilities, it does provide adequate levels of training for non-clinical employees.[15] A coherent risk communication curriculum for non-clinical hospital workers should be added as part of the existing plan for preparedness. The risk communication curriculum can be administered initially to all non-clinical workers as part of hospitals' employee training programs. After ensuring initial risk communication among all non-clinical hospital employees, it is imperative that these workers also receive annual follow-up training, as well as immediate risk communication reinforcement programs in the event of an emergency. Additionally, since diseases such as avian influenza can mutate giving rise to new risks of infection, the CDC should also provide up-to-date information on all risks.

Though the CDC should lead the effort to form and distribute curricula, competent and trusted individuals in each hospital must work with non-clinical employees to ensure that the messages of each curriculum are effectively communicated. In general, the closer the source of information is to the recipient, the more trusting the recipient will be.[16] Thus, it should be the duty of the senior hospital staff, union leaders, or other trusted persons to distribute the information to all non-clinical workers. As previously suggested, this material can be delivered through self-directed workbooks or instructor-led seminars. Though the original source of risk information must be a national health organization, non-clinical workers are more likely to trust—and, therefore, abide by—the information if it comes from a more immediate source.

Since the CDC already has an extensive emergency preparedness apparatus in place, adding new curricula is unlikely to drastically increase

costs. If additional funding is necessary, there is little doubt that it would be endorsed by the American public. Eighty percent of Americans surveyed said that they would support funding to prepare hospitals.[17] While a significant cost-increase is unlikely, we suggest that Congress develop a fund-matching program for state hospitals to cover any funding gaps. HHS will act as the organization responsible for overseeing dispersion and use of such funds; as with similar fund-matching programs developed by Congress, the funds will fall under HHS's control.

Each state's department of health can work with the CDC to determine the extent to which the general curricula need modification and adaptation to the state's specific communities, unique challenges, and areas of vulnerability. Also, state health departments can determine which and how many hospitals currently lack personnel to carry out the curricula, whether through seminars or workbook distributions. Lastly, states will need to report how much their hospitals will spend to pay overtime to staff when they attend or participate in risk communication programs. These criteria, outlined and evaluated by the CDC, will determine how much additional assistance states will need. Then, states can petition to share the costs of the program with Congress and HHS by showing commitment to implementation and preparedness. This petition process should not be overbearing for states. Rather, it should serve as a means for showing HHS that a state is committed to implementing a successful risk communication program that will have lasting affects in its hospitals and communities.

This proposal recommends that the CDC, along with states, invest in curricula that are easily adapted to all biological threats and also specifically address two timely diseases—anthrax and avian influenza. In that event, the curricula will be the most cost-effective investment, as few revisions would be needed to focus on various diseases. Most importantly, the cost of this program will be significantly less than the financial consequences of its omission from preparedness plans, as this proposal explores further later.

Sample Risk Communication Curricula: Anthrax and Avian Flu

It is essential to understand the means of transmission and spread for both anthrax and avian flu in order to understand risks and alleviate fear. Moreover, a very basic scientific understanding of each disease will allow workers to appreciate the information and instructions they are given about how to handle a major bioevent, both personally and professionally. In the case of an anthrax or avian flu outbreak, there may be mass numbers of people flocking to emergency rooms. However, the subsequent

spread of each disease would differ markedly, and each disease produces unique consequences.

This section provides background information regarding these two biological threats, information that could potentially be used in a risk communication curriculum. Including these facts in a risk communication curriculum will provide non-clinical employees with a fundamental scientific understanding of each disease. A similar variety of general information should also be made available to employees for any new threats that may arise in order to provide clarification and a better understanding of each specific disease. In any effective set of curricula, distinctions must be drawn between similar diseases as well. For example, a major difference between anthrax and smallpox, which are both bioterrorism agents, is that smallpox is contagious while anthrax is not.

Anthrax is a spore-forming bacterium that causes three distinct syndromes in humans based on the method of entry. The most commonly occurring form of the disease is cutaneous anthrax, in which the bacterium finds its way into the human skin, usually through a break in the skin or through mere contact. Cutaneous anthrax can be treated very effectively with antibiotics; mortality occurs only if the initial wound and infection are left untreated and the organism is allowed to spread to the systemic circulation. A second form, inhalation anthrax, occurs when anthrax spores are inhaled. These spores then germinate in the lungs to cause an outpouring of fluid and blood within the thoracic cavity. Usually by the time inhalation anthrax is diagnosed, treatment is of no use; mortality in cases of infection is 95 percent.[18] Inhalation anthrax is rare in natural conditions, but it is also the form that is most likely to occur if and when anthrax is used as a bioterrorism agent. Finally, gastrointestinal anthrax is contracted through consumption of contaminated food products.[19] The symptoms of gastrointestinal anthrax, loss of appetite and nausea, are often misdiagnosed, resulting in a mortality rate that ranges between 25 and 60 percent.

When preparing risk communication curricula, each type of anthrax must be taken into account. Further, specific means of reducing infection, including use of gloves and masks, must be addressed. It is essential to provide all information to non-clinical workers, as the symptoms of anthrax are generally flu-like. While an anthrax vaccine exists, it is currently used only for those who are likely to come in contact with the disease.[20]

Anthrax is a dangerous biological agent, but many experts now claim that avian influenza represents the most threatening emerging infectious disease. Avian influenza is an infectious disease caused by influenza viruses that occur naturally in birds. Some of the avian influenza viruses become pathogenic, causing mass morbidity and mortality in birds. In recent years,

some avian influenza viruses have shown themselves capable of infecting humans and causing severe disease. The most recently mutated avian influenza strain circulating the world (H5N1)—the strain of the virus that is currently infecting birds on three continents—is particularly pathogenic for humans and has resulted in more than 200 human cases since 2003, more than half of which resulted in death. This highly pathogenic virus typically infects those who come into contact with dead or ill birds. Jobs involving the slaughter and preparation of infected birds for consumption put workers at especially high risk. Currently, transmission to humans is unusual, and there has not yet been any proven human-to-human spread resulting in infection. However, the virus may only be one or two mutations away from gaining the transmission capability that results in infection between humans.[21] If this occurs, it is likely that the virus will result in mass casualties around the world.[22] In this scenario, the CDC would classify the disease as a pandemic.[23, 24]

All risks of infection for both diseases must be considered when developing curricula for non-clinical workers. Additionally, the type of information provided here can and should serve as a guideline for risk communication curricula for any disease. Every risk curricula developed must accomplish several goals in order to fully educate non-clinical employees, including, but not limited to, the following items:

- Explain modes of disease transmission and contraction;
- Communicate all risks of a disease, including any latency period and signs of infection;
- Aim to dispel common misperceptions of the threat and distinguish each disease from other similar agents;
- Discuss all means of reducing risk of infection, including use of barrier protection equipment such as gloves and masks;
- Outline procedures for caring for oneself and family in the event of infection.

By accomplishing these goals, the risk communication curricula will be effective at alleviating the fears and concerns of non-clinical healthcare employees.

Secondary Benefits of Risk Communication

The primary benefit of implementing curricula like the sample above is empowering non-clinical workers, which will ultimately reduce absenteeism and ensure that hospitals remain operational in the event of an epidemic or a bioterrorist event. However, implementing such curricula also presents

several other benefits. Financially, our government stands to save enormous expenses that would be incurred when maintaining the infrastructures of hospitals that suffer from absenteeism during medical epidemics. While the exact expenses are unknown, the overall spending would be enormous. In any given flu season, the costs amassed from employee absenteeism can reach $700 per worker.[25] When looking at this number on a national level during an influenza pandemic, for example, the number is truly staggering.

Not only will on-duty staff be less likely to miss work in the event of an outbreak, but it is also more probable that off-duty staff will report to work of their own volition if they are more familiar with any risks or lack thereof. As a result of higher non-clinical employee attendance rates, hospitals will not have to draw on outside assistance, such as the Red Cross, to aid in an emergency, but will be able to rely on their own staff and infrastructure. It is also likely that an epidemic would produce casualties across hospitals throughout the nation, rather than remaining regionally contained. In that event, an agency like the Red Cross cannot be expected to provide adequate assistance to every hospital; its resources would quickly be stretched too thin. Also, since each hospital handles basic non-clinical services in a slightly different way, tasks such as food preparation or waste management may become difficult for outside personnel—individuals who are unfamiliar with the workings of a specific hospital—to execute effectively. In addition, temporarily outsourcing services like catering or housekeeping would undoubtedly cost more than maintaining normal, in-house operations. Finally, HHS suggests several methods of managing increased patient levels—such as the use of retired healthcare workers—which would prove unnecessary if hospitals can rely on their own, preëxisting staff.[26] Ultimately, the number of lives saved from such a program is truly an invaluable and immeasurable gain. It is imperative to implement a risk communication plan in all hospitals in order to immediately curtail absenteeism and ultimately save funding and lives.

Vaccination: A Supplemental Means of Preparation

Proper risk communication to non-clinical workers is a sound method of ensuring efficient and quality patient care in a hospital during times of crisis, but non-clinical workers should also be vaccinated, to the extent the stockpile allows, to further reduce fear of infection. As Lee Jong-Wook of the World Health Organization states, "a universal non-specific pandemic vaccine may be the ultimate protective solution for human influenza."[27] The same is true of other infectious diseases—and not only does vaccination

guard against infection, but it also provides security. Though infection from many biological agents cannot be prevented by vaccination, workers would gain the same sense of security through distribution of antibiotics or antiviral prophylaxis drugs to prevent and cure the onset of any symptoms of a bioterrorism agent. If non-clinical employees receive this "ultimate protective solution," they will feel much more competent and secure, and fears of infection will be greatly reduced. The risk communication would serve as the final measure of empowering non-clinical employees. Naturally, those involved most closely with the infected patients—namely first-responders, doctors, and nurses—must have priority in receiving vaccines, but the chance of spread to non-clinical workers in the hospital system should not be ignored.

The Advisory Committee on Immunization Practices (ACIP), which consists of several HHS appointed expert advisors to the CDC, is the only body responsible for developing and suggesting plans to prioritize the routine administration of avian flu vaccines. It delivers its recommendations on pandemic flu, as well all other vaccine-preventable diseases, to HHS and CDC. With respect to avian flu, ACIP also provides guidance on recommended dosages, periodicity, and any conditions that may render the administration of the vaccine unsuitable.[28]

ACIP should advise HHS and CDC to provide available vaccinations for non-clinical workers to lessen additional fears they may harbor and to ensure a capable workforce. Based on ACIP's designated prioritization of vaccines for pandemic flu, non-clinical employees who do not have direct patient contact are not necessarily subject to vaccination.[29] To guarantee protection and an optimally successful risk communication program, this proposal suggests that ACIP meticulously maintain an official record of all hospital employees who have been vaccinated for infection from any biological agent, including non-clinical employees who may otherwise be undocumented. While each hospital may have such a record for its own employees, it is necessary for ACIP to have a master list so it can most effectively and accurately guide distribution decisions. Furthermore, a plan for administrating vaccinations assumes an adequate stockpile of vaccines. While an adequate supply of anthrax vaccines currently exists, there is still not a sufficient, stock avian flu vaccine. Recent perfection of a technique known as reverse genetics, however, has considerably increased the speed of vaccine production.[30] Additionally, HHS recently announced plans to invest billions to increase availability of avian flu vaccine.

While this proposal recommends that non-clinical workers receive vaccination for both anthrax and avian flu, the possibility of pandemic flu striking before an adequate stockpile of flu vaccines develops still exists.

In such a scenario, non-clinical workers should receive proper priority in receiving antiviral prophylaxis treatment to complement the risk communication programs. With risk communication and effective vaccination, workers will gain a sense of security and trust in their facility. Adequately educated, adequately vaccinated non-clinical employees will be more likely to assist in a crisis situation, reducing or eliminating the need for costly, inexperienced supplementary aide and ensuring a functional hospital infrastructure.

Conclusion

Should a catastrophe occur, non-clinical workers will be essential to guarantee that it is dealt with successfully. Without such critical assistance, hospitals will be unprepared to handle such an emergency and will fall into disarray. It is vital to adopt a plan of risk communication for non-clinical employees. National plans for emergency preparedness on bioterrorism agents and infectious diseases must emphasize this education and encourage states and hospitals to make it a priority. With the implementation of a risk communication curriculum, the nation will be better prepared to handle any and all impending medical epidemics.

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A New Environmental Priority

Keystone Species Conservation

Brandon Cortez

Introduction

The eastern red-backed salamander's behavior and physiology affects everything from the quantity of carbon released into the atmosphere to the water quality of nearby cities, and should impact policy decisions, such as pesticide bills of suburban towns. The salamander's burrowing behavior, tendency to feed on important leaf decomposers, and ability to efficiently turn ingested energy into quality protein tissue play integral roles in the functionality of an ecosystem. For these reasons, not only should old-growth forest and amphibian conservation planning focus on the preservation of this species, but global conservation plans should also consider the power that a single species can have on ecosystem function. A shift in conservation focus towards "keystone species," or species that exhibit important influences on other organisms or nutrient cycling in a community, could therefore stabilize a rapidly declining habitat and help curb important environmental problems. Furthermore, as 500 of 4750 amphibian species continue to experience declines in abundance, a conservation campaign focusing on amphibian keystone species might foster the kind of public support that made environmental projects like the Smokey-the-Bear forest-fire campaign successful.[1]

Keystone Species

The phrase "keystone species" is a designation that ecologist Robert T. Paine established in 1969 to describe species that influence their habitat or biological community out of proportion with their biomass. Such species can greatly influence the survival and functioning of ecological communities via interspecies interactions or habitat alteration.[2] Examples include beavers in riparian zones and nitrogen-fixing plants in nutrient-poor soils; both establish new habitats (ponds and habitable soils, respectively) upon which many other species depend. When conservation biologists focus on "keystone species" the whole ecosystem can benefit. The concept of "keystone species" can help conservationists protect the habitats of species that strengthen entire ecological communities and also serve as charismatic species policymakers can use to rally public support for conservation. Thus, keystone species conservation can be more efficient and effective than ecosystem-level conservation. Given the swift pace of biodiversity loss, it behooves preservationists to promote keystone-focused species conservation in order to maximize the preservation of species and community processes to which the species is intricately linked.

The Eastern Red-Backed Salamander as a Keystone Species

The eastern red-backed salamander, or *Plethedon cinereus,* is relatively abundant in North American forest ecosystems and is located in the middle of the food chain between detritus-feeding invertebrates and larger predators. Unique to this species are its behavioral characteristics, which have an important impact on its ecosystem and, in turn, on humans. Despite the fact that populations of eastern red-backed salamanders are stable relative to most worldwide amphibian populations, this species' critical impacts on old-growth ecosystems may help raise awareness of worldwide amphibian decline.

The eastern red-backed salamander is a lungless salamander that lives in many North American regions, from central Canada in the north to the Mid-Atlantic States in the south, and from the Great Lakes in the west to the Atlantic Ocean in the east. It lives in forest habitats, and is commonly found on woody debris, as well as under rocks, in old rotting logs, and in leaf litter.[3] The population of the eastern red-backed salamander peaks under ideal conditions, which include low soil acidity, significant litter depth, old growth forest, and

abundant woody debris. Such conditions are most common in the eastern United States. Sampling from an ideal habitat in a Virginia forest indicated an average of four salamanders per cubic meter, while samples from most other western forest systems indicate about 0.5 salamanders per cubic meter.[4] In eastern forests, red-backed salamanders may have as large a biomass as the birds or mammals that inhabit these regions.[5]

Unlike many salamanders in North America, the eastern red-backed salamander does not require pools of water for reproduction or during any other stage of its life cycle. It reproduces by internal fertilization, a process which yields about ten offspring per female during a reproductive season. Also, since these salamanders are lungless, they require moist microclimates in order to breathe through their skin.[6] This life-history requirement often forces salamanders to live beneath the leaf-litter layer, where they also find prey. According to the University of Michigan's zoology department, eastern red-backs prey on many invertebrates that inhabit leaf litter and soil, including mites, spiders, beetles, centipedes, millipedes, snails, ants, earthworms, and flies.[7] They are preyed upon, in turn, by a variety of snakes, large frogs, opossums, skunks, raccoons, robins, and blue jays.[8] These interactions are the basis for its important role in the ecosystem.

The Eastern Red-Backed Salamanders Influence on the Ecosystem

Impacts on Carbon Cycling

One of the most interesting indirect effects that the red-backed salamander has on North American forests and humanity in general is its relationship with carbon cycling. Because salamanders prey on a wide array of invertebrates that increase decomposition by feeding and fragmenting leaf litter, large populations of salamanders are thought to slow carbon decomposition and recycling into soils. To test this hypothesis, Richard Wyman, an ecologist from the Biological Research Station in Rensselaerville, New York, conducted an experiment in which he compared habitat plots that contained salamanders with plots that did not contain salamanders. By monitoring the composition of salamander prey along with litter decomposition rates, Wyman found that the mean rate of decomposition in the zero-salamander condition was 17 percent greater than in the two-salamander condition, and 11 percent greater than in the six-salamander

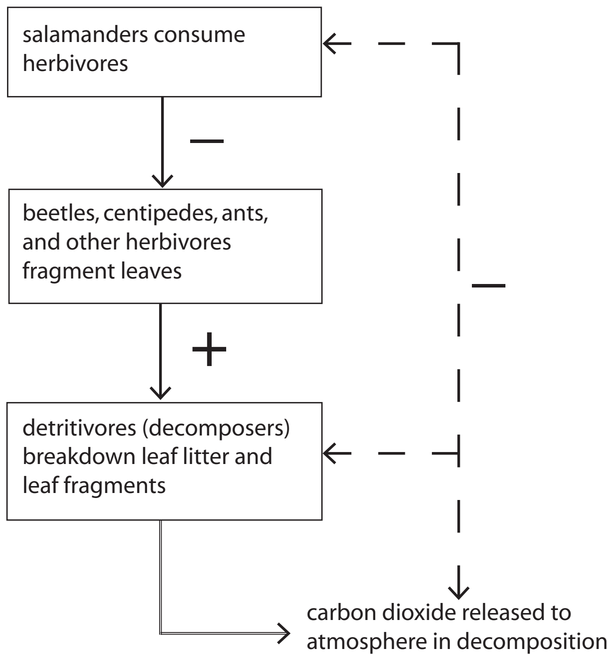

Figure 6 Salamanders influence leaf fragments available to decomposers, which slows carbon cycling. Plus and minus signs indicate positive and negative affects on abundance of interconnected groups.

condition.[9] Thus, as more salamanders were introduced, decomposition decreased. This phenomenon indicates the importance of the salamanders' role in controlling detritus-feeding prey; other insect predators in the plots, including large spiders and centipedes, were unable to control species that enhance decomposition as effectively as the salamanders. Wyman also found that salamander predation caused the average size of remaining prey species to decrease over time, which suggests that the salamanders first preyed on the larger invertebrates like millipedes, mollusks, and insect larvae; these are also the species that fragment leaf litter most frequently.[10] These findings indicate that salamanders have an indirect effect on the flow of carbon through an ecosystem: by eating various insects that fragment leaves and consume leaf litter, thus slowing decomposition, salamanders increase the amount of carbon that the litter retains and that the soil in turn sequesters.

This decrease in the rate of decomposition due to salamanders can directly influence humanity's experience of extreme weather events and global climate change. According to Wyman, "an 11 to 17 percent decrease in decomposition results in 261 to 476 kg of carbon per hectare not released to the atmosphere…," and if about 10 percent of the state of New York were inhabited by these salamanders, "as much as 0.4 [giga-tons] of carbon could be retained" by preserving this salamander's population.[11] According to the University of Florida's Earth System Science department website, this quantity of carbon is equivalent to 0.05 percent of atmospheric carbon (from 1990 atmospheric carbon levels), a substantial portion for a single species.[12] These numbers are undoubtedly speculative, although they do communicate the significance of the effect that salamander feeding behavior has on carbon sequestration. Preservation of this species and others that feed on detritovores could provide the United States and countries with similar habitats a mechanism for partially offsetting anthropogenic carbon emissions from cars and factories. As atmospheric carbon levels continue to increase, carbon sequestration will become an increasingly important service to the earth and humanity. Conservation awareness for this species and other salamanders that play similar ecological roles should focus on these benefits.

Pest Control

Salamander feeding also keeps populations of insects that are often considered pests to humans at a manageable level. This service saves rural areas near old-growth forests money that might otherwise be spent on insecticides and any resulting non-target problems. According to Rosamond Naylor and Paul Ehrlich in *Nature's Services*, as pesticide sales have increased tenfold across the globe, citizens have been paying the bills and experiencing the associated environmental damages.[13] Thus, the control of invertebrates and decomposers provides humans with services that a keystone-species conservation-advertising scheme should emphasize.

Support of Salamander Predators

Eastern red-backed salamanders also provide an important source of protein for predators higher on the food chain. A study conducted by Cornell University researchers Thomas Burton and Gene Likens at the Hubbard Brook Experimental Forest in New Hampshire, a highly regarded natural biological laboratory, determined that this species of salamander is a significant source of protein and energy

Nutrient	Concentration		
	Birds[1]	Mammals	Salamanders[2]
Ca	3.11	3.06	3.43
Mg	0.11	0.13	0.13
K	0.81	0.99	0.87
Na	0.41	0.5.	0.32
P	1.92	0.045	2.28
N	3.14	4.98	9.06
Zn	0.0109	0.0115	0.0108
S	1.78		0.60
Protein	19.63	31.13	56.63

Nutrient	Standing Crop			
	Birds (max)[1]	Mammals[3]	Mammals[4]	Salamanders[2]
Ca	6.91	27.49	14.24	11.86
Mg	0.25	1.17	0.60	0.54
K	1.80	8.89	4.61	3.11
Na	0.91	4.49	2.33	1.06
P	4.27	0.40	0.21	7.79
N	6.98	44.74	23.17	37.44
Zn	0.024	0.103	0.054	0.033
S	3.96			2.45
Protein	43.62	279.69	144.83	234.02

[1] Bird data from Sturges et al. (1974). Max. biomass present 25 June-9 July.
[2] Salamanders include only forest forms.
[3] Includes *Peromyseus maniculatus*, *Clethrionomys gapperi*, *Napcozapus insignic*, *Biarina brevieanda*, *Sorex cinerens*, and *Tamias striatus*. From G. Potter and G. Likens, unpublished data. Based on preliminary biomass estimates.
[4] All mammals above except the chipmunk, *Tamias striatus*.

Figure 6 A comparison of how birds, amphibians and salamanders incorporate energy into protein tissue and concentrate nutrients. (Burton 1072)

for the birds, mammals, and snakes that prey on them.[14] The study, which examined how energy and nutrients flow through salamander populations, showed that while salamanders are not significant sinks or sources of nutrients, they are more efficient than birds and other species of the same biomass at transferring energy from their prey into their tissue.[15] Figure 2 from Burton's 1975 study indicates that salamanders concentrate significantly more protein in their tissues and comprise more of the standing crop of protein (because of their relatively high abundance) than both mammals and birds within the same ecosystem.[16] Because salamanders produce more new tissue at a faster rate than birds and other small mammals and also have higher protein content, they are arguably the best prey for their consumers. Therefore, they can play an important role in supporting avian and mammalian predator populations, thereby influencing the energy

cycle of the whole community. This support of higher level predators can also directly affect humans by supporting recreational birding and other aesthetic activities.

Soil Structure

One behavioral characteristic of eastern red-backed salamanders that may also influence ecosystem function is their need to burrow into soils to retain moisture when the surface dries in summer. An experiment by Harold Heatwole on the burrowing ability of *P. cinereus* indicates that this species can burrow through the top leaf layer as well as through disturbed humus layers in the soil.[17] However, red-backed salamanders require earthworms and other insect burrowers to penetrate further into the soil (below 12 inches). Even this minimal burrowing breaks up the soil surface and mixes nutrients within the top layer. This serves numerous functions: it helps plants establish roots and take up nutrients; it helps soil dwellers move more freely; and it helps water percolate to a greater depth. Furthermore, when salamanders burrow through established burrows, they help maintain tunnels for other underground foragers.[18] Although the benefits of salamander burrowing have not yet been quantified, the tendency of these salamanders to burrow under drought conditions does enhance surrounding plant and animal communities.

This burrowing behavior also aids in water purification in the Mid-Atlantic region, a service of value to humans. Burrowing promotes the mixing of soil, which in turn increases soil porosity, allowing water to trickle down through the soil column. As water infiltrates the soil en route to the deeper bedrock, fungi and bacteria in the soil column interact with the water to purify it of unwanted chemicals . The New York City Administration paid over a million dollars to preserve the Catskills forest ecosystem, which contains *Plethodon cinereus*, in order to maintain the quality of tap water.[19] This willingness to invest money in a habitat that undoubtedly contains salamanders indicates that such soil services are extraordinarily important to humans.

Evolutionary Potential

According to recent findings described by Wyman in *Amphibian Conservation*, *Plethodon cinereus* is a part of a complex of 13 distinct subspecies of plethodontids in the eastern United States that were once thought to interbreed.[20] Because the discovery of this genetically isolated multiple-subspecies grouping is recent, there are few

studies on the ecology, behavior, and habitats of the individual subspecies. Therefore, although the characteristics are assumed to be fairly similar, the fact that these subspecies cannot interbreed implies that this complex has high evolutionary potential.[21] The subspecies complex has most likely undergone recent genetic divergences, which will likely amplify in the future as genetic mutations accumulate at different rates in the separate gene pools. If the subspecies become more isolated over time by biological and geographic changes, genetic variation and species richness may increase; because species richness generally leads to efficient use of available resourses, species abundance tends to protect ecosystems from invasive species. Consequently, protecting the diversity of this plethodontid may represent a mechanism for preserving the integrity North American forest salamander communities.

Indicator of Ecosystem Health

The red-backed salamander has a relatively long lifespan, shows territorial loyalty, is fairly abundant throughout its range, but is sensitive to changes in moisture and woody debris. Thus, monitoring red-backed salamander abundance can provide a window on environmental changes in old-growth-forest systems throughout the northeastern United States. Declining concentrations of these salamanders over time in appropriate habitats could, for example, indicate changes in microclimates of forest-floor, including variations in abundance of leaf litter or downed woody debris, moisture levels in the litter layer , or abundance of prey species. Because many other organisms in these ecosystems are less sensitive to small environmental changes, salamander sampling and counting appears to be a more efficient, cost-effective method for determining the integrity of an old-growth-forest ecosystem over time than sampling other organisms. Therefore, if conservation biologists can preserve the abundance of these ultra-sensitive species that have co-adaptations to moist forest systems, they would likely preserve a number of other organisms that may be threatened if environmental changes intensify.

Conclusion

As enormous environmental concerns such as climate change and habitat alteration pose synergistic threats to biodiversity, arguments against the conservation of individual species have intensified. Many

conservation biologists argue that given time and resource limitations, as well as the difficulty of choosing particular species for conservation efforts, environmentalists ought to focus on the maintenance of entire ecosystems or landscapes, which in turn would provide the nutrients, energy, and water necessary for the survival of all species in the system. These arguments peaked during an annual meeting of the American Association for the Advancement of Science in 1991 and emphasize that the stability of a particular ecosystem does not always rely solely on the characteristics of one species, and therefore, individual species conservation is less efficient than ecosystem-level action.[22]

Although the idea of habitat conservation appears sound in theory, there are often problems. According to Gary K. Meffe and the coauthors of Principles of Conservation Biology, when dealing with large habitat regions it is often difficult to pinpoint the exact factors responsible for the decline of a particular species, especially as boundaries between different ecosystems become unclear.[23] Action on this scale also requires significant research and testing because alteration of large habitats can have lasting ramifications for the organisms they sustain.[24] Species-level conservation can be far less dubious, however, as the requirements of a species are much easier to identify than the needs of an entire ecosystem. Focus on individual species and their needs are fundamental to identifying the minimum area of appropriate habitat required to maintain a healthy population – in this case, old growth eastern deciduous forest. However, for preservation of this forest habitat to be effective for the integrity of the ecosystem as a whole, in addition to understanding the needs of species identified as keystone, one must also gain an understanding of the needs of the highest level and widest ranging predators. If a keystone or high level predator species of interest has been identified as an endangered, political mechanisms already in place such as the Endangered Species Act, will assist in conservation efforts.[25]

Conservation of the eastern red-backed salamander and many amphibians like it will require more than the Endangered Species Act, however, as their populations are not technically "endangered." Nonetheless, the eastern red-backed salamander, along with a suite of other amphibian groups, does face anthropogenic threats such as logging, habitat change, genetic homogeneity at the level of populations, and pollution, which combine to form a powerful challenge to populations throughout its North-American range. Because the species provides a wide array of benefits to its community and is relatively abundant,

the extinction of this species would have serious ramifications for the integrity of North-American old-growth forests, amphibian declines, and human well being. It is therefore critical that conservation efforts target this species and its threatened old-growth habitat. More importantly, the impacts of the eastern red-backed salamander offer examples of the contributions that amphibians provide as an entire taxonomic class. As amphibian populations continue to decline throughout North and South America, Europe, and Australia due to climate change, air and water pollution, invasive species, fungal diseases, and habitat alteration for infrastructure development, more and more benefits provided to people by intact natural ecosystems will be lost.[26]

Targeting this single species for conservation, which might be achieved by careful monitoring of its populations, protection of its habitat, and reduction of pesticide use, will neither significantly influence human standards of living nor directly solve global environmental problems. However, preserving eastern-red-backed-salamander populations can serve as a small starting point for the maintenance of global amphibian populations as well as entire forest communities because of its keystone status. In order to curb the loss of amphibian taxa, stabilize regional species diversity, and preserve important ecological benefits to humans, policy research should meet biological research to form progressive keystone-species-conservation legislation.

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U.S. Food Aid

A Humanitarian Program?

Corinne Ramey

In 2001, Thomas Ferrara, chairman of the Rice Millers' Association, declared that food aid was necessary in order to keep the rice mills alive in the region surrounding his home state of Mississippi. "Meaningful and immediate increases in food aid now could mean the difference between survival and immediate financial disaster for the new rice mills in this region," he stated in an interview with the *Delta Farm Press* in July 2001. Thanks to our government's food aid program, rice was shipped to hungry people in poor nations around the world.

But Wagino, a rice farmer and father of four small children in Indonesia's Central Java Provice, had a different take on the issue. When the food that had been milled in Mississippi arrived in Indonesia, the large quantities of rice introduced to the market sent the price of locally grown rice plummeting, making it nearly impossible for Wagino to feed his family. In an interview with Oxfam staff, Wagino stated:

> Last year I sold my rice at Rp 2,600-Rp 2,700 [approx. $.25] per kg. This year, however, its price was only Rp 1,500-1,700 per kilogram due to the flooding of rice from the social safety net programme to the local market...Some people said that rice came from the U.S.[1]

Clearly, there's a problem with our government's food aid program if the individuals who are supposed to benefit the most from the aid are hurt, and not helped, by the assistance. Wagino's experience with food aid is not atypical: due to bad planning, inadequate

studies of local markets, and dumping of surplus production from other countries, food aid has often been as much a curse as a blessing for those in the developing world.

Food aid is an important current issue. There are 850 million people worldwide who suffer from chronic malnutrition, an unacceptable number given the affluence of the industrialized world.[2] Each year, 5.5 million tons of food aid are distributed to developing nations.[3] About half of that aid comes from the United States.

Food aid has been a central issue in the Doha Round negotiations of the World Trade Organization (WTO), which took place most recently in Hong Kong this past April. However, participating countries failed to meet their self-appointed deadlines, and little concrete policy came about from the meetings. Ernesto Zedillo, the former Mexican President and current director of the Yale Center for the Study of Globalization, suggests that these negotiation failures undermine the power of the WTO. He writes, paraphrasing Colombian author Gabriel Garcia Márquez, that the Doha negotiations have become "a chronicle of failure foretold".[4] WTO m*ember states claim they want to make international trade fairer, yet refuse to meaningfully compromise*. Unless countries are willing to sacrifice a few of their own benefits for the greater good of the world, they are unlikely to reach any substantive conclusions.

Food aid is a trade issue, and relevant to the Doha Round discussion on export competition because food aid can distort domestic markets and damage food production in recipient countries. Additionally, there has been recent tension between President Bush and Congress over food aid issues: Congress is hesitant to change food aid policy due to the powerful lobbying interests of the big agribusiness and shipping firms that benefit from U.S. food aid. As Bush loses his "fast track" negotiation authority in mid-2007, it will be particularly difficult to pass Doha round legislation beyond that point, due to what Zedillo calls the "notoriously protectionist" American Congress. Once the President loses his "fast-track" authority, Congress will have a line-item veto on trade bills.[5]

Food aid is a contentious issue for several reasons. It has clear benefits—food aid saves lives threatened by droughts and shortages, helps remedy chronic malnutrition, and creates an additional market for U.S. agricultural products. Some NGOs also use food aid to generate revenue for development projects through a process termed monetization, in which food aid is sold at cheap prices in local markets. In the short term, this provides food at lower prices for needy people; however, in the long term, food aid often disrupts local markets. Not only that, aid is often poorly managed—it has, in the past, arrived

months after a crisis or consisted of food not normally consumed by its recipients. Many suggest that food aid is a ploy to disguise export subsidies as aid, a move that benefits U.S. agribusiness and shipping companies and opens up new overseas markets for U.S. production. U.S. food aid policy needs to change.

A Historical Perspective

President Eisenhower established the food aid program in 1954 with four initial objectives in mind. First, our government designed the program to counter the threat of communism. Food aid started during the Cold War, when many developing countries were either cooperating with the communist bloc or giving signs that they might be easily swayed under the communist domain. The United States hoped that food aid might be effective in securing the good will of these countries, thereby checking the spread of communism.[6] Second, food aid was thought to be an effective form of humanitarian aid. The United States thought the only way for developing countries to overcome their cycles of poverty was to receive aid from developed countries. Third, food aid was an effective way to get rid of agricultural surpluses. During World War II, agricultural production was suspended in many parts of the world, including Europe and Japan. By 1954, however, this production had restarted; the increase in production, combined with the emergence of better agricultural technologies and farming techniques, led to an overwhelming worldwide food surplus. Finally, our government saw food aid as an effective means of capturing new markets. The United States hoped to disseminate a dependence on imports in developing nations by creating a "wheat and meat" diet in much of the rest of the world.[7] A large percentage of food aid was targeted at nations that had the potential to become new markets.

The objectives of giving food as humanitarian aid, getting rid of surpluses, and capturing new markets remain in place today. Agricultural surpluses are not nearly as large today as they were in the 1950s, but the practice of exporting U.S. agricultural products still manages to reduce the amount of food in the U.S. market and to keep prices high. The only major changes in the food aid program since its inception have been the addition of monetization and the extensive involvement of NGOs in the food aid network.

Many of the people overseeing U.S. food aid believe it is an ideal program because it mixes U.S. self-interest with humanitarian concerns. In theory, food aid boosts the U.S. economy and helps to fight hunger

and chronic malnutrition worldwide. In practice, however, the program can be more harmful than helpful.

Food Aid: Advantages and Disadvantages

There are several reasons to support the United States' current food aid program: the quality of the food, U.S. farmers' economic benefits, and benefits from monetization.

Many question our government's decision to offer food aid instead of direct cash donations to the governments of developing countries. One argument for in-kind food aid is that the food bought from local farmers in these countries is sometimes of lower quality than that from the food aid shipped from United State: the latter is often fortified with added nutrients that local food lacks. These nutrients are especially beneficial to young children. U.S. food aid also provides a steady stream of food unthreatened by droughts or other local weather conditions. In some instances, U.S. food aid programs have even introduced new sources of nutrients to local markets. For example, a food aid program called Operation Flood helped to develop the dairy industry in India with "multiple benefits, including nutrition, education (especially girls'), and job creation."[8] They hypothesize that dairy market development could be similarly successful in Sub-Saharan Africa.

Another advantage of food aid is that it helps U.S. farmers get rid of surplus produce, thereby keeping prices higher in the U.S. One example of this arose in 2003, when California raisin producers ended up with a surplus of raisins. According to Representative Devin Nunes, a Republican congressman from California, "The purchase of surplus raisins from California farmers will serve the nutritional needs of hungry people everywhere, as well as provide relief to farmers suffering from the worst agricultural economy since the Great Depression."[9] In some cases, food aid allows for the survival of jobs in the U.S. agricultural sector. However, the focus on U.S. farmers creates huge variations in the amount of food sent abroad each year.

Additionally, some perceive monetization to be more effective than other distribution methods: monetization funds increase incomes and agricultural productivity, both essential components of food security in developing nations.[10]

Finally, as will be discussed later, food aid serves as one of the main ways of financing the development projects of many private voluntary organizations (PVOs). Without this revenue, some PVOs would not be able to exist.

Despite all these advantages, however, the concept of food aid is marred in its execution by grim realities: disruption of local markets, misunderstanding the causes of hunger, lack of adherence to local cultural norms, and transportation expenses.

When a recipient country receives food aid in the form of food that is already grown by local farmers, local markets are invariably altered. Usually as more food enters the system, the price of the commodity decreases, hurting local farmers. Additionally, as U.S. food aid is sometimes sold at a price just under that of the market price, local farmers are left unable to sell that year's harvest. This also occurs if the food aid provided can function as a substitute for a product already available on the local market. For example, if the U.S. government exports wheat to an African country, people may begin to substitute wheat for locally grown corn in their diets, thereby leaving local producers with large corn surpluses.

Also, sometimes the food arrives too late, which disrupts the markets for the coming season's harvest. Past experience has shown that aid sent at the wrong time can be extremely harmful to local markets. In Malawi in 2002 and 2003, food aid donors thought that there would be a 600,000 ton food deficit, so they shipped in 600,000 tons of aid. Malawi was flooded with food, and maize prices dropped form $250 per ton to $100 per ton over the course of a year. Losses in the Malawian economy were estimated to be approximately $15 million.[11]

Another of food aid's problems is that it involves a misunderstanding of the causes of hunger and chronic malnutrition in the world. Hunger doesn't exist because of a lack of food—barring situations involving extreme disasters, usually there is plenty of available food–hunger exists because food is too expensive for local populations. In these cases, vouchers or cash would be more effective than in-kind food donations. Vouchers would allow people to purchase food and health care, or even start their own farms or businesses in order to have a sustainable cash flow.

According to food aid experts Awudu Abdulai, Christopher B. Barrett, and Peter Hazel, food aid shipments decrease production of food in local markets ("Food Aid for Market Development in Sub-Saharan Africa"). The problem is not a lack of food in the market, but a lack of buying power. The following diagram illustrates food production and food flow from 1960 to the present. In the diagram, the lighter line represents food aid flow while the darker line represents per capita food production for Sub-Saharan Africa. High food aid flow generally decreases local food production, whereas low food aid flow increases local production. According to Abdulai, Barrett, and Hazel, "food aid has adverse affects on local food prices, creating disincentives for producers to

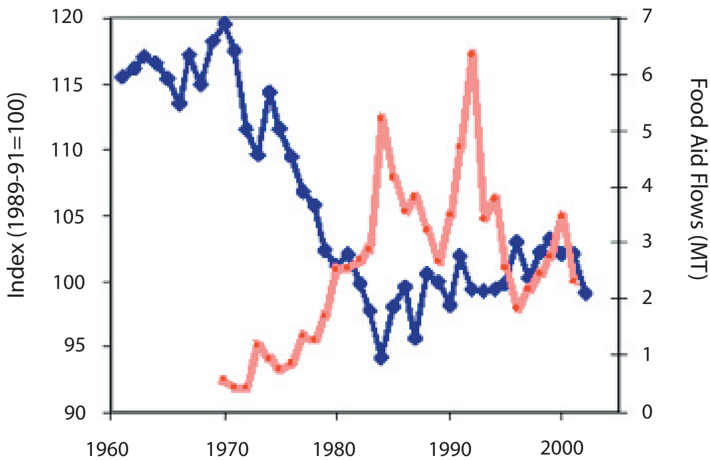

Figure 1 Sub-Saharan African Per Capita Food Production vs. Food Aid Flows

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invest in improved technologies or for marketing intermediaries to invest in storage or transport capacity."[12]

Also, the food provided often does not fit within cultural norms of the countries that receive food aid. Although regulations require donated food to be culturally appropriate with respect to local diets, these rules are often ignored. In many cases, local people simply change their diets to accommodate the new type of food in the market. In others, however, consumers actively reject aid that doesn't fit within their cultural norms. In Uganda, for example, consumers refused a shipment of yellow maize food aid, as yellow maize is traditionally used as pig feed in that country, white maize being the culturally acceptable staple. In Zimbabwe in 2002, the government refused shipments of genetically modified corn, despite threats of famine within the country. They were concerned about both human health problems and the contamination of their own crops by genetically modified seeds. According to Roger Winter, then assistant administrator at the U.S. Agency for International Development, "The one issue that has caused the most controversy, and frankly is causing us the most difficulty, is the issue of so-called GMO-affected foods."[13]

Finally, in-kind food aid is expensive to transport. According to the Organization for Economic Cooperation and Development, it costs an average of 50 percent less to obtain food locally than to ship it from abroad. This problem is further exacerbated by U.S. regulations specifying that 75 percent of U.S. food aid must be shipped by U.S. carriers.

Food aid's "Iron Triangle"

The three groups that make up the food aid "Iron Triangle" -- agribusiness, shipping companies, and private voluntary organizations (PVOs) -- all support the status quo with regards to food aid, although for different reasons.

Agribusiness

Agribusiness firms are staunch supporters of food aid. Food aid policy was designed in 1954 with agribusiness interests in mind, and current policy continues to support them. Current government regulation specifies that 75 percent of U.S. food aid must be sourced, bagged, fortified, and processed by the U.S. agribusiness firms with food contracts from the USDA Farm Service Agency. However, a limited number of firms are qualified to bid for these contracts, so the bidding is dominated by only a few corporations. For example, in 2003, two firms—Cargill and Archer-Daniels Midland (ADM)—won the contracts to provide a third of all U.S. food aid. Additionally, three firms—Cargill, ADM, and Conagra—export 80 percent of U.S. corn, and three firms—Bunge, ADM, and Cargill—have 71 percent of U.S. soybean crushing business.[14]

The dominance of only a few firms in food aid contract bidding leads to final prices even higher than market prices. According to calculations done by Barrett and Maxwell for their upcoming book, *Food Aid After Fifty Years: Recasting Its Role,* the U.S. government pays 11 percent more than open market prices for food aid. According to Murphy and McAfee, who used a draft copy of the forthcoming book for their study, the increase in corn prices is even higher than that of other goods: the U.S. government has paid up to 70 percent more for corn intended as food aid than the regular market price.[15]

The predominance of only a few agribusiness firms in food aid has implications for food aid reform. Although many agribusiness lobbyists claim that reducing in-kind food aid donations would be devastating to U.S. agriculture, in reality only a few firms would lose large percentages of their revenue. The rest of U.S. agribusiness would remain unaffected.

Shipping Industry

The second arm of the iron triangle is the U.S. shipping industry. Current U.S. government regulations stipulate that 75 percent of U.S. food aid must be shipped on U.S. carriers. Shipping costs substantially reduce the amount of food that each dollar of U.S. food aid money can buy, reducing the efficiency of the program. According to Barrett and

Maxwell, "In the 2000-2002 period, nearly 40 percent of total costs of U.S. food aid programs were paid to U.S. shipping companies."[16] Not only is shipping expensive, but the U.S. shipping industry is much more costly than shipping on foreign carriers: U.S. bulk carriers cost 75.9 percent more than foreign bulk carriers over the same routes, shipping the same commodities.

Much like agribusiness contracts, government regulations restrict which companies can bid on food aid shipping contracts, which limits competition and increases prices even further as there is little need to compete within the industry. According to Barrett and Maxwell, in 2002 only 13 U.S. shippers were approved to bid on the contracts.[17]

As is the case with regards to agribusiness, eliminating food aid contracts would not be deadly to the industry, but could seriously hurt a few firms. If food aid was bought from local farmers, instead of shipped from the United States, a much larger quantity of food could be bought.

Even U.S. agribusiness realizes that these shipping policies are exceptionally inefficient. In an article from the trade magazine of the Washington Wheat Association, Thomas Mick claims the government is spending too much money on shipping they could instead be using to buy wheat, because of the high rates of U.S. shipping companies. He estimates that 27 percent more wheat could be shipped using foreign shipping companies, and that the United States would save on billion dollars in the process—which could be used to buy more wheat.[18] He doesn't mention how much more wheat could be bought from African farmers instead of U.S. agribusiness, however.

Private Voluntary Organizations

The third arm of the Iron Triangle is comprised of Private Voluntary Organizations, or PVOs. PVOs are tax-exempt, non-profit organizations that do development work . For many of these organizations, food aid is a major source of funding . Barrett and Maxwell calculated that the eight main PVOs involved in food aid had $1.5 billion in gross revenues in 2004. In 2001, food aid was worth an average of 30 percent of the PVOs' revenue. However, much like the shipping and agribusiness industries, the market is dominated by only a few PVOs. In fact, only three PVOs—CARE, World Vision, and Catholic Relief Services—account for over four-fifths of the $1.5 billion total.

This revenue comes from the monetization of food aid. Historically, monetization was supposed to cover costs associated with food aid handling, such as storage or distribution. However, this changed in 1990, when NGOs began to use monetization to fund development

work. According to food aid analyst Ed Clay, "Monetization of U.S. development food resources [...provided under PL480 Title II] by NGOs increased from 10% in 1990 to over 60% in 2001 and 2002."[19] In 2002 over $632 million in food aid was monetized on local markets.

Although PVOs do not lobby as strongly as agribusiness or shipping firms, they clearly want to protect the status quo. The revenue from monetization is attractive to PVOs for three reasons. First, the amount of money that comes from monetization is substantially large relative to other non-food aid revenues. Second, the money comes with very few strings attached. PVOs are free to use monetization revenues for whichever development projects they see fit. Finally, the money that comes from monetization has very little administrative cost.

Monetization is regulated by the Bellmon Determination, which sets out criteria for food aid requests for monetization. According to these rules, the PVO must demonstrate that the storage and handling capacities and the port infrastructure can manage the proposed food shipment. They must also demonstrate that the program will not damage local production. However, the Bellmon determination has not proved successful in preventing food from damaging local markets. Monetization must be regulated in order to check adverse market effects.

There is not unanimous agreement among PVOs as to what their role in food aid should be. While some PVOs embrace monetization, others refuse to monetize food or to process food aid that will be monetized by other agencies. The Coalition for Food Aid and Oxfam serve as examples of these two opposing perspectives .

Oxfam is fairly unique in that it doesn't accept U.S. food aid donations that require monetization. Although it does distribute some food aid, Oxfam tries to buy from local or regional farmers in problem areas. They have been very vocal about actively campaigning against governments that use food aid programs as a way to get rid of surplus production. A 2002 Oxfam briefing paper, entitled "Death on the Doorstep of the Summit," takes a strong stand against this policy. The paper reads, "Northern governments, especially the EU and the US, must end agricultural export dumping. In particular, they must immediately agree on a clear timetable for phasing out export subsidies and export credits."[20] Oxfam's strong position is both morally commendable and politically dangerous. Morally, they are advocating what they think is the best policy for people in Africa, irregardless of the loss of support they have received from U.S. food aid programs. However, they have also lost some political influence, and thus the ability to monetize food aid in ways they see to be more helpful than current policies.

The Coalition for Food Aid is on the opposite side of the debate. The Coalition is formed of sixteen PVOs that form a food aid bloc, including the American Red Cross, CARE, and Save the Children, among others. These PVOs claim that monetization is the key to important development work overseas, arguing that although the U.S. food aid program could be improved, the essence of the program is good for all involved.

Ellen Levinson, executive director of the Coalition for Food Aid, expressed these views in her testimony to a Senate subcommittee in July of 2002. In her testimony, she claims that food aid in its current form benefits both U.S. farmers and needy people in the developing world. She states that food aid leads to trade, providing a market for U.S. goods in "places where there is unexpressed demand."[21] Additionally, food aid has shown to be historically effective in opening up new overseas markets for U.S. products. "Today, 40% of our commercial agricultural exports are sold to countries that were food aid recipients," she states.[22]

In her testimony, Levinson claims that monetization is valuable because the program not only provides funds for economic and social development, but remains flexible and can be adapted to local needs. She says that the money from monetization has been used for projects such as agricultural development, public works, medical equipment, immunizations, and basic infrastructure construction. According to Levinson, monetization does not distort markets if carried out well.

However, Murphy and McAfee do not agree with Levinson's sunny picture of monetization's benefits, suggesting that PVOs are sacrificing their reputations by being a part of the Iron Triangle. They write, "PVOs gain large amounts of money for their work but at a high price: their legitimacy is called into question because of their support for practices that are rejected by the international food aid community for their counter productive effects in developing countries."[23] Although there is no doubt that many of the development projects funded by the revenues from monetization are worthwhile, the source of their funding undermines the very people that the development projects are trying to help.

The three arms of the Iron Triangle, U.S. agribusiness, U.S. shipping companies, and PVOs, are clearly inhibiting food aid from being an effective policy for humanitarian aid. The self-interests of all three groups combine to create a policy that is costly, ineffective, and can harm recipients as much as it can help them.

Three Policy Alternatives

Our government has several policy alternatives available with which to ameliorate the food aid program. Among the options are:

- to maintain the status quo after minor reform
- to eliminate monetization and in-kind aid and distribute only cash donations
- a compromise policy in which monetization is gradually phased out and food sustainability is examined as a larger development issue.

The last of these policy alternatives is the most promising, as it approaches the root of the problem—sustainability—that will hopefully end the vicious cycle of poverty in many of these countries.

Maintaining Status Quo

Within agribusiness companies, the shipping industry, and certain PVOs, there is strong support for maintaining the food aid status quo but making small necessary reforms. Many members of Congress also support this plan, in part due to the strong lobbying interests of agribusiness and shipping firms.

Both Ellen Levinson and Mark Viso, vice-president of World Vision, gave policy recommendations in their respective Senate testimonies. First, they suggested giving PVOs more managerial support. They said that flexibility is the key to responding successfully to local situations. Problems with local markets occur when PVOs aren't given enough power to control when, how, and at what price commodities are monetized. They argued that all monetization should be guided by a fair market price, and shouldn't undercut local farmers who grow the same commodities. Additionally, longer programs are needed in order to give PVOs the ability to do long term development work and create sustainable programs that ultimately aren't dependent on U.S. funding. Levinson suggests that seven to ten year contracts would show greater long-term results than the current system.[24]

In his testimony to the Senate Committee on Agriculture, Nutrition, and Forestry, Viso lobbied for constant levels of food aid from the U.S. that are not driven by surplus production. He said:

> Predictable levels of food aid, rather than surplus driven donations, are necessary to assure that net food importing developing countries and least developed countries have adequate access to food on a regular basis. We are dismayed that donor volume commitments under the FAC decreased from 7.52 million metric

> tons (wheat equivalents) in 1986 to 4.895 million metric tons in 1999. We urge donors to commit to higher levels in the future for both acute and chronic hunger.[25]

Like Murphy and McAfee, Viso agrees that much of food aid donations are driven by surplus or overproduction, but believes the system can be reformed and doesn't need drastic change.

Viso also makes the point that food aid should not be an issue dealt with by the WTO, as he, unlike other food aid analysts, thinks that food aid is not a trade issue. He argues that food aid issues are beyond the scope and expertise of trade experts at the WTO, and that people specializing in trade do not see the distinctions between different types of food aid programming.

Proponents of current food aid policy support in-kind food aid donations by using the "food productivity relationship" – claiming that food aid is prospectively beneficial to creating sustainable African agriculture. The idea behind this argument is food aid increases poor households' consumption of food, even during times of political or climate-related shocks. This improves nutritional status and health, thereby increasing labor productivity and the capacity to increase earned income.[26] The reason we haven't seen these results in the past, according to the idea's supporters, is the fault of bad targeting, timing, and decision-making regarding each country's domestic environment —whether it is conducive to the use of specific commodities. In other words, the problem is not the policy itself, but poor decision-making on the behalf of people in the food aid distribution chain.

Abdulai, Barrett, and Hazel also suggest that food aid is more effective when raw materials, such as maize, soybean oil, and powdered milk, are given to recipient countries. PVOs and recipient governments then monetize these goods at low prices, and local traders process or sell the products, "creating or expanding new markets in the process."[27] This allows local traders to benefit from the proceeds of monetization as well.

The suggestions offered for reforming and maintaining the status quo are worthy of concern, as they seem heavily motivated by self-interest. Parties that benefit from current food aid policies are merely justifying their own gains. For example, Mark Viso suggested that PVOs should control monetization in order to avoid undercutting local farmers. However, if food is monetized at a lower price than the local equivalent, the monetized food is likely to be preferred by consumers. Additionally, past experience has shown that although many PVOs initially claim that they will not undercut local farmers, once in the country they find that

they need to sell goods at lower prices in order to pay their own operating expenses. Maintaining the status quo is unlikely to be effective because it does not put humanitarian concerns first.

Revamping the Food Aid System

The second policy option is a complete revamping of the food aid system. Proponents of this option include Oxfam, food aid analysts at Wemos (a public health NGO in the Netherlands), many foreign governments and NGOs, and prominent members of the WTO. These groups charge that the current problems with the food aid system are so great that monetization will never be reformed into an effective policy. The problem is at the root of the policy itself, and not in the way that it is put into practice. They argue that there is no way to sell U.S. agricultural products in other countries without sacrificing local agricultural production. Additionally, current U.S. food aid policy is problematic because the policy was originally designed to help both U.S. agribusiness and developing nations. If food aid policy is to be truly humanitarian, it must put the people that it is trying to help first. Only in this way can we begin to address the global problem of chronic malnutrition.

Oxfam has six policy recommendations for changing the food aid system. The first recommendation is to provide aid only in grant form. The U.S. would no longer give in-kind food aid grown in the U.S., but would provide African governments or NGOs with money to use for sustainable development work. If food were needed, they would buy it from local or regional producers. This would help eliminate the use of food aid as an export subsidy, and would force the U.S. to phase out Title I of PL 480 food aid, the push for new overseas market development.[28]

Next, "food aid should not be linked, either explicitly or implicitly, to commercial transactions or services of the donor country."[29] When aid is linked to the commercial interests of U.S. agribusiness and shipping firms, it is almost impossible to target aid fairly, in response only to recipient need and not donor desire to expand export markets.

Third, in-kind food aid should be used in situations of "acute local food shortage and/or non-functioning local markets, where regional purchase is not possible."[30] Example situations might be extreme disasters, such as a tsunami or drought that devastates an entire region. Ideally, as African nations gain more food sustainability they will build up their own food stockpiles to be used in disaster situations. However, as many currently do not have food reserves, there may be times when in-kind food aid is the only option. In all other non-emergency situations, cash donations should be used to purchase local or regional food.

Fourth, monetization of food should be replaced with cash donations in order to avoid displacement of local producers. Eliminating monetization will help eliminate problems caused by poorly-managed food aid that reduces hunger in the short run but goes on to decrease recipients' agricultural sustainability.

Fifth, food aid should be provided only in response to requests from governments, NGOs, UN agencies, intergovernmental agencies, and other reliable sources. Groups who request food aid that clearly have a private interest, such as the Rice Millers' Association mentioned in the beginning of this paper, should not have the authority to request food aid assistance.

Finally, donor countries must notify the Food and Agriculture Organization of the U.N. (FAO) and the WTO of all food aid shipments in a timely matter. This would hold states accountable to international scrutiny, increasing the likelihood that food aid shipments have humanitarian, and not self-interested, motives held first.

A revamping of the food aid program is certainly needed, and many of the policy suggestions above may be effective to help food aid become what it really should be – a humanitarian program designed to help people, not U.S. business. However, these huge changes are probably not politically feasible. As seen by the failure to meet the deadline of the Doha Round meeting in April, coming to political compromise on this issue is difficult. While Oxfam's suggestions might be perfect in an ideal world, they may be too quixotic for the world in which we live.

Compromise Policy

There is a third alternative beyond what the major policy advocates are demanding, a combination of the two recommendations already discussed. With this option, in-kind aid would be gradually eliminated except in emergency situations, assistance would be given to local farmers to develop sustainable agriculture, monetization would be gradually phased out, and multilateral rules and monitoring would be put into place. Instead of entirely taking PVOs out of the picture, the experience and expertise that PVOs possess would be put to use in other aspects of development.

One tenet of this recommendation is that in-kind food aid would be given only in emergency situations: food aid for developmental use would be eliminated. The focus should be on sustainability, not just providing immediate food relief. According to Francois Grunewald, an agricultural engineer who has written food aid articles for the Red Cross, sustainable agriculture involves several key goals. He writes, "[Sustainability] also

involves curtailing as far as possible the periods during which food aid is required, in order to avoid dependence, limit the extent to which aid becomes part of local survival strategies, and keep the changes in nutritional practices to a minimum."[31]

Some analysts have suggested that even emergency food aid can undermine sustainability goals. In a way, food aid is like insurance – whenever farmers' crops fail, they receive aid to compensate for their losses. This means that the farmers have reduced incentives to ensure that their crops survive. According to Abdulai, Barrett, and Hazel, "This is a well known problem in insurance whereby the insured has reduced incentive to take all reasonable precaution to avoid or minimize losses once they know that the insurance will compensate regardless of the causes of their losses."[32] However, if food aid disincentives are not in place, African farmers will put their own risk-management structures into place, such as kin support systems, intercropping, and temporary migration in times of disaster.[33] If farmers know that food aid will be given to them whenever their crops fail, they will be less likely to engage in these strategies.

However, that does not mean that in-kind food aid needs to be completely eliminated. There are some catastrophes – such as widespread droughts, flooding, or earthquakes – that might merit food aid from outside the region. If the region has an actual lack of food and not just high food cost, then in-kind aid may be necessary. In these situations, there should be open bidding for contracts if food is shipped from the United States. This would destroy the monopoly that current agribusiness companies hold on food aid shipments. Competitive bidding would also bring down the prices of food, allowing the United States to provide more food at cheaper cost in times of need.

Second, money that was previously used to purchase food aid should be used instead to help farmers develop sustainable agriculture. Because so much of food aid money went to pay for shipping, the money under the new program should have much more purchasing power due to the decreased cost of buying food locally. As monetization would be eliminated, the PVOs could receive funding from the U.S. government meant to help develop food sustainability. This money would replace some of the revenue from monetization and allow the PVOs to continue working in needy regions. In many cases, PVOs possess valuable skills and knowledge of how to create effective programs based on local cultures and norms of which governments are not aware. With additional funding, PVOs could be a strong part of creating agricultural sustainability. In this way, the PVOs' unique knowledge of the regions will not be lost with the elimination of regular food aid programs.

According to John Mellor and Rajul Pandya-Lorch, an important part of sustainability is the creation of infrastructure, such as roads and bridges. In some areas there is plenty of food production, but local infrastructure is inadequate for food transport to hungry communities. In a study of Kenya, Mellor and Pandya-Lorch write that the creation of additional infrastructure was the key to providing surrounding areas with food and creating local jobs. They write, "The provision of a road that provided fast links to export outlets reduced marketing costs and facilitated access to markets and thus the adoption of these new crops, which in turn created additional employment – especially in the transportation and processing of the vegetables."[34] The PVOs and governments who implement food sustainability programs need to think outside the box – not everything that creates sustainability is directly related to farming. Other projects, such as building roads or creating a more effective health care system, may be equally successful in creating food security. PVOs could be extensively involved in this part of the development process. Although creating infrastructure is a more costly short-term project than is merely providing food, it will create long-term sustainability and stability that is much more valuable than continued food shipments.

Third, monetization needs to be gradually phased out. Monetization cannot be eliminated immediately, as PVOs count on monetization as an important revenue source. The PVOs need to be given time to find new funding sources and to use people currently engaged in the monetization process in different ways. Although PVO development projects can be valuable, the process of monetization itself can be devastating to the local market. Some food aid analysts have written that monetization, when done correctly, can be a very effective policy. For example, John Stantz, Pat Diskin, and Nancy Estes have suggested that monetization does not need to be eliminated, but merely reformed. In the real world, however, monetization is almost never carried out well. Badly timed food shipments, prices set below those of the market, and the wrong commodities have created disastrous conditions for some parts of Africa. Additionally, the division of the food aid program between several different government agencies makes it easy for PVOs to ignore the regulations. In this case, it is better to eliminate the monetization policy due to the impossibility of reform. However, as this is probably not politically feasible, a system that gradually phases out monetization over a period of several years may be the best option.

Finally, multilateral rules need to be established. Within the United States, food aid is administered mainly by two agencies, the U.S. Department of Agriculture (USDA) and the U.S. Agency for International

Development (USAID). Within these two agencies, aid is distributed through what Oxfam calls an "alphabet soup" of programs and acronyms.[35] Problems in distribution arise because USAID and the USDA have different motivations to distribute aid, have different regulations, and don't enforce rules consistently. In order to create a successful food aid program, these two agencies must consolidate food aid into one coherent program. Ideally, since food aid is meant to be development aid and not a way to get rid of agricultural surplus, food aid should be under the auspices of USAID instead of the USDA. A food aid system with smaller distribution would also require less government oversight. Clearly, a more concentrated system free of competing interests would be much more effective.

Not only should our government's policy be consolidated, but worldwide policy on food aid needs to be consistent and open. There should be multilateral regulations and dialogue about food aid policy, and all food aid shipments should be public knowledge and reported to some kind of multilateral monitoring commission, whether that be within the WTO, the UN, or another intergovernmental agency.

Conclusion

There is no disagreement that food aid is a problem today. Due to the self interest of several groups – U.S. agribusiness, shipping companies, and PVOs – U.S. food aid policy is designed to help the "Iron Triangle" as much as it is to help those suffering from chronic malnutrition worldwide. The disadvantages of this program, on which the U.S. spends millions of dollars on each year, have been copious. According to a survey of food aid in Sub-Saharan Africa by John Mellor:

> A survey of food aid projects reveals a long list of endemic problems: poor project effectiveness, poor long-term impact of food for work schemes; limited quality and questionable viability and sustainability of assets; labor disincentives, high overhead costs of food aid transportation, storage, and distribution; poor supervision and accountability; and inadequate forecasting of needs.[36]

Despite all the above-mentioned problems, however, there is hope for the reform of food aid and other assistance to the developing world due to ongoing debate in the Doha Round of the WTO and within

Congress. Of the three policy alternatives described in this piece—minor reforms to the status quo, a complete elimination of all monetization and in-kind donations, and a third compromise policy, the compromise policy is the most effective way of successfully reforming the food aid program. The phasing out of programs like monetization, combined with multilateral monitoring and a greater focus on sustainability that goes beyond food, could help food aid to better respond to the needs of recipient countries.

However, there is one overwhelming danger to this policy: reforming food aid policy, and ending in-kind donations except in cases of extreme necessity, might lead to Congress eliminating food aid cash donations or other development aid in the future as U.S. firms would no longer be the main beneficiaries. As the goal of food aid reform is to improve food aid effectiveness in the developing world and not to increase agricultural and shipping subsidies, this should not happen. However, even if the monetary amount of food aid were to decrease slightly due to reforms, the net result would still be positive. Today, less than 50 cents of every dollar of food aid money is used to pay for food. After the proposed reforms, money would be given directly in cash donations and/or food would be purchased from African farmers, and the actual purchasing power of food aid dollars would increase. Reforming the system could provide food security for millions of starving people worldwide.

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Corinne Ramey graduated from Oberlin College in May of 2006 with a B.M. in viola performance and a B.A. in comparative literature with highest honors and minors in Spanish and politics. Her academic interests include international development, Latin American studies, and the relationship between literature, culture, and politics. At Oberlin she was co-president of Oberlin Students in Solidarity with the People of Guatemala (OSSGUA), a group that worked to help returned-refugee communities in rural Guatemala. She has been active in the Roosevelt Institution at Oberlin since the founding of the Oberlin Chapter, and has worked on coordinating local voting guides for the past elections. This year, she is a Young People For Fellow, a program of the People for the American Way Foundation, and attended its fellows summit in Washington, D.C., this past January. Ramey is interested in journalism and has worked as both a full time and freelance reporter at the Elyria Chronicle Telegram, a local newspaper. When she is not thinking about U.S. food aid, Ramey enjoys running, reading, and playing the viola.

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Gagging Women's Rights

The Politics and Health Outcomes of the Mexico City Policy

Anny Lin

The Primacy of Women's Health and the Role of the U.S.

There are 3.2 billion women in the world, and more than 60 percent of them live in underdeveloped countries where they are likely to face adverse social and biological conditions, such as poor education and HIV/AIDS infection.[1] In 2000, 529,000 women around the world died from conditions related to pregnancy or delivery, 99 percent of which occurred in developing countries.[2] Reproductive health is a crucial issue in developing countries, and it reaches well beyond the women who are immediately affected. Unfortunately, it is in these countries that women often face the most social barriers and their needs are most likely to be neglected.

Historically, recognition of women's roles has been slow, but progress is being made. In September 2000, world leaders met to discuss a litany of global issues, including poverty, hunger, disease, education, women's rights, and environmental degradation at the United Nations Millenium Summit. Two of the eight goals set for 2015 focus exclusively on women's issues: to "empower women and promote equality between women and men," and to "reduce maternal mortality by three-quarters."[3] U.S. international policy towards these efforts, however, is conflicting and oftentimes contrary to those ends.

The most controversial piece of U.S. foreign policy regarding women's reproductive health is the Mexico City Policy, commonly known as the "Global Gag Rule." This rule prevents any foreign nongovernmental organization (NGO) that receives U.S. funds for

family planning from promoting or providing any information about abortion, even in countries where abortion is legal, regardless of the source of funds used for such efforts . This rule operates through the U.S. Agency for International Development (USAID), the organization responsible for dispersing federal funds to Sub-Saharan Africa, Asia and the Near East, Latin America and the Caribbean, and Europe and Eurasia. The agency's objective is to promote "long-term and equitable economic growth and advance U.S. foreign policy objectives by supporting economic growth, agriculture and trade; global health; and democracy, conflict prevention and humanitarian assistance."[4] However, the Mexico City Policy has functioned primarily as a political vehicle through which American politicians debate abortion and exert ideology beyond American borders. Over the past two decades, this policy has had wide-reaching implications for women's health and human rights through the so-called 'chilling effect', whereby all organizations receiving U.S. funds, including journals for scientific and medical research, have instated policies that prohibit discussion which might be construed as promoting abortion. This has worked to petrify laws that criminalize abortion, and has denied women in developing countries the ability to make informed decisions about family planning, thus endangering their lives and health.

It is time for policymakers to realize the harmful effects the Mexico City Policy has had on women's health and family planning. While at first it may seem that the policy is focused on stemming abortions, it actually compromises the provision of maternal health care and family planning services. This policy should be repealed, and organizations receiving USAID funds should be freed of this restriction so that they can provide the best care to women in developing countries. Although U.S. knowledge and resources regarding positive economic and democratic development can help to usher in many advancements in developing countries, policymakers should be aware of their proper role in the international arena: they should offer advice and support while also respecting the autonomy of those in developing countries, especially when dealing with issues surrounding family planning, a culturally sensitive and personal topic. The United States should stop imposing this restrictive policy and start recognizing what is in the best interests of women and their families.

The Mexico City Policy Comes and Goes and Comes Back Again

USAID was founded in 1961, and, in its early days, its Office of Population

promoted access to methods that would terminate early pregnancies as part of family planning. However, beginning in the 1970s, a series of restricting legislation and executive orders changed how USAID was allowed to distribute funds. Senator Jesse Helms (R-NC) promoted an amendment to the Foreign Assistance Act of 1973 that prohibited USAID funds from going to any abortion-related purposes other than research. When President Ronald Reagan took office in January 1981 USAID could no longer fund abortion-related research, but was allowed to continue collecting epidemiological data on abortion.[5] At the same time, foreign family-planning clinics receiving USAID money could still use their own funds to counsel, research, and even provide abortions through the early 1980s in their respective countries as long as it was legal. During the course of the Reagan presidency, however, U.S. foreign policy changed from one that granted local autonomy in dispersing USAID funds to one that strictly regulated all the activities of clinics receiving USAID money, regardless of how they are funded.

When leaders from around the world convened at the Second International Conference on Population in Mexico City in August 1984, opponents to abortion were quite influential. With the support of the Vatican, delegates from the United States managed to get the statement approved by conference participants that governments should "…take appropriate steps to help women avoid abortion, which in no case should be promoted as a method of family planning, and, whenever possible, provide humane treatment and counseling of women who have had recourse to abortion."[6] The following year, the Governing Council of the United Nations Population Fund (UNPFA) put forth a policy that stated the organization would not provide assistance for abortion as a method of family planning.[7] Anti-abortionists in America used the international statement as leverage to bring about a major change in U.S. foreign aid policy.

The Mexico City Policy, issued in 1984, stated that "the United States does not consider abortion…an acceptable element of family planning programs," and since then has required that NGOs receiving USAID funds pledge to neither perform nor promote abortion as a viable method of family planning.[8] USAID defined promoting abortion as committing resources "in a substantial or continuing effort to increase the availability or use of abortion as a method of family planning."[9] Activities that encompass this definition stretch far beyond just providing abortions. For a family-planning counseling service to offer information regarding the benefits and availability of abortion was to promote abortion; and for an NGO to mention abortion as an available option, or to offer referrals to organizations which could provide abortion services or information

was to promote abortion. To lobby a foreign government to legalize or to continue the legality of abortion as a method of family planning was to promote abortion; and even to conduct a public information campaign regarding the benefits or availability of abortion as a method of family planning was to fall within USAID's newly defined bounds of abortion promotion. USAID did, however, specify exceptions where abortion services and counseling would be allowed: in cases of rape or incest, or when the mother's life was in danger. Clinics were also allowed to treat women with injuries or illnesses from previous abortions.[10] However, given the ambiguity in the regulation which has led to the chilling effect, this exception has been undermined to such an extent that U.S. officials can safely assert that no USAID funds have been employed even in these limited circumstances.[11]

This policy caused the United States to withdraw funds from a number of international organizations. Even though the UNPFA, for example, released a policy ending its support of abortion, the organization still fell victim to the Mexico City Policy because it operated in China, where abortion is legalized and a part of the national family planning policy.[12] The policy also affected a number of private organizations receiving USAID money. Funding for the International Planned Parenthood Federation (IPPF) was terminated because its affiliates were involved in providing abortion services. However, since the IPPF is one of the larger and better-known family-planning organizations internationally, thanks to the sustained efforts by its fundraisers, within two years European donors made up for the lack of funding from the United States. As a result, the effects of the Mexico City Policy were not as dire for the organization, though they did result in temporary clinic closures which still affected many women. Most other foreign NGOs, however, were not as fortunate, since the U.S. government has been the largest single contributor to international family planning for more than two decades.[13] When it backed out, most foreign NGOs lost their largest donor. While funds from European nations, Japan, Australia, and other countries continued to grow, the best thing most organizations could do to survive was to comply with the new rule and stop offering their patients services and information related to abortion.

The Mexico City Policy survived through the rest of the Reagan administration and through George H.W. Bush's. During the Bush administration, there was a slight majority in Congress in favor of overturning the Mexico City Policy and resuming funding for UNFPA, but nothing was changed due to the threat of a presidential veto.[14] It was not until Bill Clinton took office in 1993 that the rule was lifted. On January 22, two days after his inauguration, Clinton issued an executive order lifting the Mexico

City Policy, once again allowing organizations to receive USAID funds, and to provide counseling and abortions to their clients.[15] During the Clinton administration, there was contentious debate in Congress to cut funding to the UNFPA and to reinstate the Mexico City Policy—and in 2000, Congress capped international family planning funds at $385 million, with $25 million set aside for UNFPA. These funds, directed at international family planning, came with additional restrictions reminiscent of the Mexico City Policy, which the White House accepted as compromise. The following year, Congress appropriated $425 million for population aid, but refrained from dedicating a specific amount to family planning until Clinton was out of office.[16] On January 22, 2001, one of President George W. Bush's first actions in office was to issue a memorandum that effectively restored the Mexico City Policy to its full power.

Rights we entitle to women in the United States we do not extend to women abroad

When analyzing the Mexico City Policy in the context of domestic policy regarding family planning, what stands out is the fact that this rule denies women the rights they would have if they were in the United States. The Mexico City Policy fails to look at the example set within the United States, where medical decisions are largely left to women and their healthcare providers; instead, it precludes individual women, qualified health professionals and entire countries from forming their own positions on effective family planning. When considering the use of USAID funds, government decisionmakers should look to the successes of the funding practices of domestic healthcare programs.

In the United States there are many health programs in which the federal government transfers money to states, local governments, and other organizations. The two largest and most far-reaching of these programs are Medicaid and the State Children's Health Insurance Program, which are federal-state partnership programs that provide health insurance to low-income adults and children. In these programs, federal funds are transferred to state governments, with minimal requirements as to whom and what services must be covered. The model of administration these programs employ has proven to be quite effective and to foster innovation, as most of the responsibility for these programs is left up to state governments, which usually go beyond the minimum requirements given to them. Nowhere in the agreement between state and federal governments is there a mandate that state services, otherwise legal, cannot be covered, or

that state healthcare providers cannot speak of certain services with their patients.[17] The rationale behind this agreement is that public programs providing health care usually are best administered when control is focused on a more local level. It is people in the individual states and communities that best know the needs of their fellow residents. The hope is that these people will come up with unique solutions that use local resources that the federal government did not know about. Also, when control is focused on a local level, those running the program will feel greater ownership in the programs and be more dedicated to their success. However, this sort of local autonomy is not granted to organizations in developing countries when they are dispersing USAID funds. The Mexico City Policy clearly precludes organizations from making decisions appropriate to a country's particular needs.

Regardless of the domestic stance on abortion and theory behind local health programs, the Mexico City Policy remains hypocritical at a more basic level. There are many reasons why such a policy would never be implemented in the United States. The most glaring of these is that this policy is a direct violation of the First Amendment right to freedom of speech: it mandates both what healthcare providers can say to their patients as well as which causes organizations are allowed to advocate. In fact, this restriction on freedom of speech gives the Mexico City Policy its popular nickname: the "Global Gag Rule." The Policy "gags" the information foreign healthcare organizations are allowed to promote if they receive USAID funding. It additionally "gags" a balanced public debate on abortion in these countries since the organizations are not allowed to advocate abortion while anti-abortion speech suffers no similar restrictions. It is feasible to have such a mandate on organizations that receive USAID funding, however, because the funds go overseas, where the U.S. Constitution does not apply.

For these reasons, the Mexico City Policy seems to counteract USAID's primary purpose of supporting global health, democracy, and humanitarian assistance.[18] What is even more disturbing is that these restrictions on speech have a great impact on the provision of health care in developing countries. There is already a dearth of knowledge regarding personal and public health in developing countries, and the Mexico City Policy prevents the disadvantaged women in those countries from knowing their full range of options. Healthcare providers who work in family-planning clinics and receive USAID funds cannot properly counsel women and tell them all the available information, which women need to know in order to make decisions regarding their own health. In the United States, if a healthcare provider is personally opposed to abortion and refuses to provide abortion counseling or services, he may refer the woman to another provider.[19] In

USAID-funded clinics, this option does not exist. Women in developing countries face numerous socioeconomic and cultural barriers to appropriate health care, and this policy adds another difficulty they must overcome. Regardless of the legality of abortion in different developing countries around the world, this policy has had serious effects on the health of women worldwide. As a result of the instatement of the Mexico City Policy, many clinics have lost money or have had to scale back operations because of the policy's requirements, abandoning thousands of needy women and their families. However, if the policy were rolled back, clinics would have the opportunity to resume their much-needed services.

Health Outcomes of the Mexico City Policy

Family-planning clinics provide a wide range of reproductive health services, including family planning, maternal and infant care, and prevention and treatment of sexually transmitted diseases. Most of all, through integrating their activities, they strive to inform women about their own health, to lower maternal mortality rates and to prevent unplanned and unwanted pregnancies.[20] An effective way to achieve this is to offer contraceptive counseling and services. While the use of contraceptives has risen, there is still need for greater knowledge and accessibility of them in developing countries. Levels of use are lowest in Africa, where only 25 percent of married women are using contraception.[21] The key to successful provision of these services is often integration. When women trust their healthcare providers, they will be more receptive to what their providers have to say. Reproductive issues are highly personal, and it is vital that women know that they have a reliable source of advice and health services.

Although the goal of the Mexico City Policy may be to reduce the incidence of abortion, it concomitantly compromises the provision of contraception. It is both efficient and highly effective to provide contraception and abortion services in the same setting because women are most receptive to healthcare providers' counseling on the benefits of contraception immediately following an abortion.[22] Since contraceptive use is a very personal and potentially confusing issue, taking every opportunity to discuss it is important. In some developing countries, there still exists a culture of distrust and disapproval regarding the use of contraception. Yet this sort of care is vital not only in preventing unwanted pregnancies, but also in preventing the spread of sexually transmitted diseases.

With the Mexico City Policy in place, the choice for family-planning clinics is to either discontinue what are oftentimes necessary abortion ser-

vices or to reject USAID money, in spite of funding shortages. For many clinics, this has been a lose-lose situation. The situation is particularly dire in Africa, where 4 million unsafe abortions occur each year, totaling 40 percent of the world's abortion deaths. Africa also has the world's lowest contraception use, which may explain why six children are born per woman in East, Central, and West Africa.[23] The Family Guidance association of Ethiopia, the country's largest family planning organization, refused the terms of the Policy and consequently lost 12 percent of its funding. The organization also lost an additional 25 percent of its funding that came from the IPPF, because that organization also rejected the Mexico City Policy. Immediately, the organization was forced to reduce outreach efforts—including HIV prevention—and to curtail its dissemination of condoms and other contraceptives. In Kenya, two major family-planning organizations had to shut down five clinics and cut back on staff.[24] The major issue here is that when clinics such as these five lose funds and are forced to shut down, women in communities like those in Kenya are not only without abortion services, but are also without vital contraceptive counseling, perinatal care, and STD treatment and prevention services. In Nairobi, for example, when the Mathare Valley Clinic had to close in response to the Mexico City Policy, 300,000 people were left without a place to go for healthcare services. The situation is similar in countries across Africa such as Ghana, Tanzania, Zambia, and Zimbabwe, just as demand for contraception and family-planning services is increasing.[25]

Although the situation may be most visible in Africa due to the highly publicized HIV/AIDS crisis, it also harms family-planning efforts in developing countries around the world. The effects have been extensively studied in Romania, where the country's unique history with family planning shows how the Mexico City Policy can work in opposition of its desired goal of discouraging abortion. Until the 1990s, Romania's Communist government had a very strong pro-natal policy, and both abortion and contraception services were not freely offered to women. More often than not, women turned to illegal abortions to control the number of children to whom they gave birth. Since the country emerged from the pro-natal policy, there has been a desire to move from abortion to contraception as the preferred method of family planning. However, the Mexico City Policy prevents contraception and abortion counseling from being provided in the same setting. In Romania, there still remain misconceptions regarding contraception and many doctors have grown accustomed to offering abortions to their patients. In 1999, more pregnancies ended in abortion than in live births, and thousands of children ended up abandoned or put in orphanages.[26] In Romania, the Mexico City Policy separates family planning from abortion when the two

should be integrated. There is much progress to be made in Romania, but the point still stands: both organizations that do accept USAID money and those that do not face this rift created by the Mexico City Policy, though they are working towards the same ends.

Current and Future Prospects

The Mexico City Policy is still a major point of contention among those who work with family planning, international health, and members of Congress. Within the past year, several prominent lawmakers, including Sen. Hillary Rodham Clinton (D-NY), have spoken explicitly about the "Global Gag Rule."

> I heard President Bush talking about freedom and yet his Administration has acted to deny freedom to women around the world through a global gag policy, which has left many without access to basic reproductive health services. This decision, which is one of the most fundamental, difficult, and soul searching decisions a woman and a family can make, is also one in which the government should have no role.[27]

Despite such dissent against the "Global Gag Rule," there are others in government who are imposing their own moral and religious beliefs on people thousands of miles away by allowing their beliefs to shape their views on public policy. Such policymaking has very unfortunate results: in order to promote health and equality for women worldwide, the United States should be breaking down barriers, not building them by imposing restrictions upon organizations that strive to help disadvantaged women.

While people in developing countries can do nothing but accept the decisions of foreign officials they did not elect, there are things that can be done within the United States. The Mexico City Policy is an order issued by President Bush, but Congress could override it. Currently there is a bill in the House (H.R. 4736) that asserts USAID should provide aid for contraception without restrictions, including those similar to the Mexico City Policy. Meanwhile, under this bill, foreign government could continue making up for the budget shortfalls created by the Mexico City Policy, but this is not the ideal situation.

It is unquestionable that the United States, through examples set in domestic and foreign policy, has considerable influence not only over governments and economies around the world, but also over the health

and well-being of the individuals and families those governments and economies encompass. Many people may think of the positive liberating effects of democracy and equal rights for women who are denied their fundamental rights in developing countries, but this is not the case when it comes to foreign aid policy for family-planning services. Family-planning services play an important role not only in women's health, but also in the development and stability of developing nations. Yet U.S. policies on birth control and family planning are riddled with political wrangling and ideology. This has resulted in regulations that withhold important information and services from vulnerable women in poor nations.

It is important to keep in mind that the health and well-being of people in developing countries should not be used as a political instrument. Preventing and curing diseases and ensuring maternal and perinatal health is a goal everyone can agree upon. Community organizations and clinics should be free to decide what is best for the people they serve. No foreign country, political party, or single president can know what is appropriate for every woman around the world—their needs are complex, varied, and misunderstood by many Americans. However, what the United States can do with its extensive USAID resources is set the tone for democracy—freedom of privacy, freedom of choice, and freedom of speech. The goal should not be to outlaw or legalize abortions, but to allow citizens, policymakers, health professionals, public health experts and human rights advocates to have their own democratic debate over abortion or any other issue. Most importantly, it is important to keep the women and families of these countries in mind—they need all the help they can get, and restrictions and mandates do not do much to meet their immediate needs. In most every society, mothers play an instrumental role in the upbringing of their children and the stability of their households and communities. In that way, they are essential to the social and economic welfare of any society. This is particularly true in developing countries where their activities at home and in their communities can have a larger impact on the immediate society and economy. By repealing the Mexico City Policy, the United States would be making a large stride towards recognizing what is best for women worldwide, both for their communities and for their own health.

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Anny Lin is a rising senior at Stanford University majoring in Human Biology. She has spent much of her academic career studying the health care and policy making system in America. She had the opportunity to see many of the issues and theories she learned in action when spent a quarter in Washington, DC working for U.S. Senator Dick Durbin, from her home state of Illinois. She has additionally worked in the areas of child health and physician advocacy at the American Academy of Pediatrics, and community health education and promotion with the Asian Liver Center. Anny hopes to take all that she's learned and experienced and to work towards a future where everyone has the opportunity to be healthy.

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Pushing for Research and Pulling for Change

A New Perspective on HIV/AIDS Microbicide Development

Rachel Hansen, Emily Morell and Robert Nelb

Introduction: An Urgent Need

A Control Mechanism for Women

Among the more than 40 million people living with HIV/AIDS today, women significantly outnumber men.[1] In 1997, 41 percent of adults infected with HIV/AIDS were women; by 2005 this number had risen to 46 percent as infected children matured and patterns of infection exacerbated the trend.[2] Socioeconomic and biological factors are driving this trend. An effective microbicide is thus necessary to reduce women's vulnerability.

Gender inequalities ingrained in cultural practices and societal norms put women at increased risk for HIV. Currently, many HIV prevention strategies have focused on promoting abstinence, monogamy, and male condom use. Despite the benefits of increased education about HIV, these strategies do not take into account the fact that women all over the world are forced to engage in transactional sex in order to survive.

Prostitution is often the only option for women to support themselves or their families. Less illicit but equally problematic are the relationships into which young women enter with older

men or “sugar daddies,” who help them with tuition, groceries, or other living expenses in exchange for sex. Domestic violence and rape also put women at increased risk for HIV. We cannot rely on men to use condoms in these situations, nor is abstinence a realistic option for these women who are forced to have sex. A microbicide would give women a means to control their own protection, without their partners' knowledge.

Transactional sex is not the only high risk factor for women; simply being married puts women at risk for HIV infection. Despite slogans like “B faithful,” social norms often push married men to engage in concurrent partnerships, putting their wives—and each of their sexual partners—at increased risk for HIV. In the 2005 edition of the *Roosevelt Review*, Jennifer Tolan noted that married girls in South Africa aged 15-19 are 75 percent more likely to have HIV than unmarried, sexually active girls of the same age. [3] Women, again, have little choice to avoid sexual intercourse. Few women feel that they have the right to ask their husbands to use condoms, even if they know their husband is not being faithful; others might feel it is acceptable to do so, but are fearful of the consequences. Because many women have few options for protection they need a microbicide.

Biologically, women are also at increased risk for HIV. The cervix is covered with a single layer of fragile columnar cells, as opposed to the stronger squamous epithelial cell layer that covers most other genital areas, including the surface of the vagina. Also, the cervix contains more HIV-targeted CD4 cells compared to other areas. Small tears in the vagina that occur during sex further increase women's susceptibility to HIV[4].

The need for microbicide is not only essential as a preventative measure; it is also necessary as a means of treatment. A microbicide that is effective against multiple STDs, including HIV, will protect HIV-positive women from becoming infected with other STDs. Women with HIV are overly susceptible to infection due to weakened immune systems—a microbicide that combats STD viruses and bacteria is an indispensable aid to a damaged immune system. HIV-positive women could also use a microbicide to help prevent further transmission of the virus to other partners.

Increased Protection for Men

A microbicide is also needed to provide increased protection for men. Most microbicides currently being tested are “bidirectional”; they help reduce infection for both the inserting and receptive partner. Men

often choose not to use condoms because they see them as uncomfortable, or because of social pressures within their community. Use of a microbicide, even one that is not 100 percent effective, will greatly reduce the risk of HIV transmission for both sexual partners, compared to using no protection at all.[5] For men who have sex with men, an effective rectal microbicide would be a valuable tool for reducing the risk of HIV transmission, especially for the receptive partner, who is significantly more likely to get HIV than the inserting partner.[6] A rectal microbicide could also help protect heterosexual partners who engage in anal sex.

Savings for Society

Researchers at the London School of Hygiene and Tropical Medicine employed conservative mathematical models to make some initial estimates of the number of HIV infections that could be prevented by microbicide use. Assuming that the product is 60 percent effective against HIV and STDs and is used by 20 percent of individuals who can be reached through existing services and used in 50 percent of sexual encounters where condoms are not, a microbicide could prevent 2.5 million HIV infections in women, men, and children over a period of just three years. If the assumed number of individuals using the product increases to 30 percent, the number of HIV infections the microbicide could prevent over three years rises to 3.7 million.[7]

Lowering the number of HIV infections has important economic benefits for society. First, it decreases the medical expenditures on HIV/AIDS-related hospitalizations, treatment for opportunistic infections, and home-based care. The Rockefeller Foundation estimated that prevention of 2.5 million HIV infections with a microbicide could save $ 2.7 billion for society on direct costs of HIV. They estimate that an additional $1 billion could be saved in employment-related productivity benefits. With fewer HIV infections, more individuals can contribute productively to the world economy.[8]

The U.S. military might even benefit. The military could serve as a substantial market for microbicides. The proposed Microbicides Development Act states: "HIV and AIDS represent a threat to national security and economic well being, with direct medical costs of up to $15.5 billion per year. The pandemic undermines armies, foments unrest, and burdens the United States military."[9] This effect can be seen in the Veterans Affairs healthcare system, which spent $359 million on care in FY 2004 for about 20,000 HIV-positive veterans.[10]

From a macroeconomic, as well as a public health perspective,

the development and distribution of a safe, effective microbicide is urgently needed.

Old Obstacles and New Opportunities

Early Failures and Confusion

The concept of a microbicide to prevent HIV/AIDS has a long history. *In vitro* studies performed in the early 1980s first suggested that nonoxynol-9 (N-9), a spermicide that had been available since the 1950s, may kill the HIV virus. A decade later, adding N–9 to sexual lubricants and condoms became the norm. However, researchers in 2000 demonstrated conclusively that N-9 in fact does not prevent HIV. Instead, the irritant qualities of N-9 (it is chemically a detergent) can actually increase an individual's susceptibility to HIV when used multiple times a day because it creates small sores that make the transmission of HIV easier. Both vaginal and rectal users were at an increased risk. For these reasons, the Centers for Disease Control (CDC) issued a statement in August 2000 strongly recommending that N-9 not be used for STD or HIV prevention. The federal government called for warning labels on all N-9 products in 2004, and sale of N-9 quickly plummeted. The World Health Organization and the CDC both maintain that N-9 is a viable contraception option, but it does not effectively prevent HIV.[11]

As a result of early failures in research and distribution, microbicide development is still seen as a risky investment for businesses. The same fears permeate to governments and non-governmental organizations (NGOs). The stagnation has been mutually reinforcing, and since the problems with N-9, there has been relatively little investment or interest in developing a new microbicide.

In addition to the scientific challenges involved in developing an effective microbicide, introducing new contraceptive methods has historically been difficult. For example, in 1993 the FDA approved marketing of the female condom, which has many of the same benefits of the male condom. Nevertheless, acceptance has been notably slow, where cost, a lack of access, and lack of education on proper use remain major obstacles.[12] While an effective microbicide, once developed, is predicted to cost less and be easier to use than the female condom, structural issues will still present barriers.

Ways Forward: Push and Pull Incentives

Stagnation, however, can be overcome with action. The failure of N-9 should not be interpreted as defeat, but as an opportunity. As Dr. Barbra Richardson points out in the *Journal of the American Medical Association*: "Although the message that Nonoxynol-9 is not an effective vaginal microbicide is disappointing, it should not discourage further microbicide research. Clearly, there remains a need for an inexpensive, effective, female-controlled method for preventing STIs, and there may be many studies with negative results before one is found. Research on other vaginal microbicides, conducted by individual investigators as well as by research networks, should be encouraged."[13] To encourage microbicide development, new incentives are needed.

Since incentives come in multiple forms, it is important that donors choose the most appropriate incentive structure to achieve their goals. Two fundamental types of incentives are push and pull mechanisms. These terms have been used extensively to describe investment in vaccine development, and are applied here to microbicides. Push mechanisms are "options to accelerate the development of a vaccine (e.g. direct funding of research in laboratories or universities)" and pull mechanisms "provide a market incentive for increased commitment to vaccine and drug research and development."[14] In the context of microbicide development, push mechanisms can be seen as additional direct funding for research, while pull mechanisms can include a wider range of options, such as advanced purchasing agreements and horizontal improvement in capacity.

Although push and pull mechanisms are traditionally seen as business models, they apply to the public sector as well. Not only will these incentives encourage private investment, but they also allow for more efficient development of public goods. A proper balance between push mechanisms (which target current costs) and pull mechanisms (which increase future returns) is essential for real cost-effectiveness. Even if pharmaceutical companies choose not to competitively produce microbicides themselves , correctly applying these incentives will insure that the public receives the most benefit for the least cost.

While both approaches are needed, additional emphasis is needed on commonly overlooked pull mechanisms in order to ensure that microbicides reach those most in need.

Pushing for Research

Current Obstacles to Research and Development

After the failure of N-9, researchers began to work on developing a true microbicide. As of May 2006, 19 potential products were being tested in clinical trials, including three products in phase III, the last stage of clinical trials.[15] Phase III trials are normally very expensive, and for microbicides and other preventative technologies (like vaccines) the cost is even higher. Instead of treating sick patients, they must introduce a preventative therapy and wait for a larger population to become sick.[16] The estimated cost of phase III clinical trials of microbicides ranges from $9 million to $50 million.[17]

Because of the cost and uncertain returns, these phase III clinical trials are often seen as a risky investment for pharmaceutical companies. Furthermore, concerns about liability also discourage investors from funding microbicide development because investors worry that if the product does not meet expectations and fails to protect against HIV and other STDs, they could be held responsible. As a result, clinical trials often need funding from governments and NGOs. After this "push" for phase III trials to find a microbicide that works, businesses are more likely to fund future production research, since production is less risky than clinical trials.

Potential for change

Recent pledges in funding suggest that governments and NGOs are beginning to recognize the need for such push mechanisms. The U.S. Senate, for example, approved $42 million for microbicide funding in July 2005[18] and four European countries recently committed $30 million.[19] In addition, major international NGOs, such as the Bill and Melinda Gates Foundation, have pledged their support for microbicide development. Much additional funding is required, however. In July 2005, the G8 summit insisted on the need for increased investment in microbicides, and some experts feel that microbicide research should double to $280 million a year.[20]

Pulling for Change

The problem of distribution

As the search for a microbicide nears completion, resources should also be allocated toward building a proper distribution mechanism. It

is essential that once a microbicide is developed, it can immediately reach their intended users. However, as is the case for public health products whose primary consumers are in the developing world, major financial, behavioral, and structural obstacles hinder product distribution and proper use.

Part of the allure of microbicides from a public health perspective is their ability to help marginalized portions of the population. From a business perspective, however, marginalized consumers aren't necessarily the most profitable market. Poor women and men who have sex with men (MSM) would benefit most from availability of an effective microbicide. Women especially have questionable resources with which to buy a microbicide. Consequently, both groups are seen as low priority in the eyes of investors and pharmaceutical companies. The United States and other developed countries are seen as more profitable, according to a survey by the Alan Guttmacher Institute. However, an effective microbicide that fails to reach so-called 'unprofitable populations' will also fail to realize its potential.

Once a microbicide is distributed, it is important to ensure that it is used as directed. A recent article in the *American Journal of Public Health* cites that an effective product may not be used appropriately even if available, especially if the way the product is marketed does not take into account social and cultural norms.[21] For example, if the introduction of a microbicide into a community significantly decreases the use of condoms, HIV prevalence could actually increase.[22] Also, as seen with the female condom , a promotional campaign that only targets high-risk women, such as female sex workers, can lead to stigmatization of the product.[23] If a microbicide is to be successful, behavioral responses of the target population must be understood. It is also important to consider the capacity of a health system to support microbicide distribution. The WHO currently estimates that 30 percent of the world's population lacks access to existing drugs, and that in parts of Asia and Africa this proportion rises to more than 50 percent.[24] The weak capacity of local health systems in developing countries, and legal obstacles to widespread distribution, foster this inadequate access.[25] If today's health system bars access to 30 percent of the population, the same group will also likely lack access to a microbicide. Health system reform, concurrent with microbicide development, is essential.

The potential for a market

Despite these current obstacles, there is hope that with the proper incentives in place to overcome economic, social, and structural barriers, microbicides can reach those most in need.

First, there is increasing evidence that pharmaceutical companies will work in a way that keeps microbicides affordable. Perhaps the most hopeful sign was a recent announcement from Merck and Bristol-Myers Squibb.[26] Both companies gave a royalty-free license to the International Partnership for Microbicides to develop products that could be used as potential microbicides. While such a generous offer may seem counter to traditional business push-pull mechanisms, which emphasize profit, it can also be seen as evidence that pull mechanisms are working. Specifically, the fact that pharmaceutical companies are willing to provide a potential HIV prevention product free of charge suggests that advocacy efforts have made it beneficial for pharmaceutical companies to contribute towards HIV/AIDS from a public-relations standpoint. In other words, awareness campaigns have given companies an added profit from supporting HIV issues, which means that when an effective microbicide is developed, it is more likely that pharmaceuticals will sell it at a reduced price in developing countries.

Moreover, evidence suggests that many women in developing countries would be interested in using microbicides if they were available. A 2002 survey showed that 68 percent of women in Kenya and 58 percent of women in Brazil would be willing to pay twice as much for a microbicide than for a condom.[27] In 1998, a survey by the European Union's HIV/AIDS Program in Developing Countries showed that 25 percent of sexually active women in France and more than 70 percent of women in urban areas of the Cote d'Ivoire and South Africa believe that a vaginal microbicide would be very useful. In the sub-Saharan countries, more than 50 percent responded that they would be willing to pay up to five times the price of a condom for an effective microbicide.[28] Furthermore, the Boston Consulting Group estimates that even if only 10 percent of sexually actively women in industrialized and developing countries used a microbicide, the global market size would grow to $900 million by 2011. By 2020, this market size would be expected to double.[29] Once microbicides are made available and people are properly educated about them, women will likely use them. This is a positive sign for public health.

Creating incentives for change

To make this expanded market size a reality, pull mechanisms need to be considered. While pull mechanisms tend to be broader and more complex than push mechanisms, which simply imply investment in research, they are an essential component to ensuring that microbicides are used effectively once available. A World Bank report on development of an HIV/AIDS vaccine suggests several types of pull mechanisms: "expanded lending for existing vaccines and immunization infrastructure.... contingent loans and guarantees, in which countries contract now to purchase a future vaccine...[and] generating knowledge of the potential public and private demand for an AIDS vaccine and its strategic use."[30] These mechanisms may also be applied to the financial, behavioral, and organizational issues in microbicide development.

Perhaps the most basic and straightforward pull mechanism is an advanced purchasing agreement, a kind of jackpot that encourages more development. The clear financial reward will help motivate research to a speedy completion, and the buyer can provide microbicides to those least able to pay. Moreover, this strategy has the added benefit of the donor not having to commit funds if for some reason a microbicide is never developed. Such agreements have been used successfully in other industries, but would be new to the health field. For this pull mechanism to be successful, it is important that substantial credibility exists. The Gates Foundation, for example, establishes credibility by purchasing underused preventive technologies (i.e. vaccines).[31] If such a pre-purchasing agreement could work for a microbicide, it could pay big dividends.

Education and advocacy are other pull mechanisms that can be used to create demand, especially among intended users. It is important not only to tell people about microbicides, but also to understand the best ways of communicating to different cultures. Behavioral and social science research should be incorporated into clinical trials to help develop this knowledge, which could help not only with microbicide acceptance, but also with acceptance of condoms and other prevention methods. Also, as exemplified by Merck and Bristol Myers Squibb's decision to offer a free license to potential microbicides, education can be used in developed countries to increase the demand on pharmaceutical companies to do their part in the AIDS epidemic. The multiplier effect of proper education and advocacy makes it an important strategy.

Infrastructure development, though the most difficult to implement, will likely have an even greater multiplier effect. Not only would it improve access to microbicides, but it would also aid in the distribution of anti-retroviral therapies and other essential medicines. Strengthening national regulatory agencies in a way that expedites microbicide approval (once proven effective) can help address legal barriers to infrastructure reform. More accessible clinics and pharmacies as well as informed providers are also essential for successful integration of a microbicide into a stronger health system. Relative to advanced purchasing agreements and improved education and advocacy, infrastructure development will demand more resources since more sectors are involved and the scope of treatment goes far beyond just microbicides. However, successful infrastructure reform will no doubt yield widespread improvement in the state of the HIV/AIDS pandemic.

Conclusion and Summary of Recommendations

As a female-controlled HIV/AIDS prevention method, microbicides offer the potential to alter the course of this ravaging pandemic. Millions of lives and millions of dollars could be saved. Early failures with microbicides like Nonoxynol-9 deterred investors, but new incentives can move development forward. Public investment in research, a push mechanism, can help ensure that potential products undergo full clinical trials. Research investment, however, does not take into account the problem of effective distribution. Resources must also be allocated to pull mechanisms, such as purchasing commitments, education and advocacy, and health system reform. Pull mechanisms also have the potential to improve access to other means of HIV/AIDS prevention while microbicide research is ongoing. For public sector donors interested in addressing the widespread ramifications of the HIV/AIDS pandemic, multisector pull mechanisms for microbicides have added benefits while clinical trials are being completed. In sum, recognizing this new perspective and implementing new policies that incorporate both push *and* pull mechanisms for microbicide development offers to pay big dividends for the public's health.

Recommendations

Push:

- Increased investment in basic research and clinical trials

Pull:

- Financial incentives such as purchasing commitments to provide for the poor.
- Improved education and advocacy tactics through social, cultural and behavioral research in conjunction with clinical trials.
- Increased emphasis on health infrastructure development for better integration of and access to a microbicide.

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Rachel Hansen will graduate from Yale University in 2009. She intends to double major in English and Theater, and may continue her studies a fifth year at the university in order to participate in Yale's MPH program. She spent the summer of 2006 in Kenya, Rwanda, and Malawi, working with the Clinton Foundation's HIV/AIDS initiative, as well as their Hunter Development Initiative. When not abroad or at school, Rachel is based in Eugene, Oregon.

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Robert Nelb is a member of the class of 2008 at Yale University double majoring in Ethics, Politics, and Economics as well as the History of Science, History of Medicine. In 2009, he will graduate with a MPH in health management from Yale as part of the new, five-year BA-MPH Select Program in Public Health. His academic interests focus on structural interventions for chronic public health problems, such as health insurance, obesity, and HIV/AIDS, and his extracurricular

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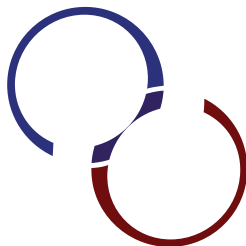

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