



Draft Criteria for Assessing ISO Research Topic Priorities *Revised February 21, 2009*

Background

On February 20-21, 2009, The Keystone Center convened a small writing group to consider key issues and prepare written materials for review by a larger stakeholder group on March 16, 2009. The writing group included individuals and members of groups whose primary interests are focused on vaccine-related issues, state and local public health and immunization officials, pediatricians, federal agency officials, and members of the National Vaccine Advisory Council (NVAC).

This document reflects the writing group's views about the identification of draft criteria and weighting for the purpose of prioritizing the Immunization Safety Office's Scientific Agenda. The draft agenda can be accessed at: <http://www.cdc.gov/vaccinesafety/agenda.htm>. The group agreed that a prioritization system using objective criteria would be most useful for NVAC to decide which research projects should be conducted first. Over two days of discussions, the group reached consensus on a broad set of criteria, additional issues to consider and contextual comments for the criteria, and an initial approach to weighting the criteria. The writing group also identified several general principles that they found to be important in setting the stage for how they hope the criteria will be applied.

Note: This draft summary will be reviewed in detail at the March 16 meeting. To the extent that interested stakeholders have questions or would like additional information regarding this draft, please contact Heather Bergman of The Keystone Center at 303-531-5511 or hbergman@keystone.org.

General Principles

- In order to limit the need to prioritize scientific research, resources for vaccine safety studies should be increased as much as possible.
- Resources should be allocated to achieve maximum impact.
- Criteria should be applied in a transparent process with stakeholder input throughout the process to enhance accountability and enhance public trust and confidence.
- The following criteria are proposed so that prioritization decisions are made in a consistent and fair fashion.
- In order to achieve accountability, NVAC will provide an explanation of how they applied the criteria to the issues on the research agenda.
- It is understood that ISO will be agile and responsive to scientific and policy questions and issues that emerge within the 5-year scientific agenda window.
- After each research study is prioritized, ISO will assess whether the study is within its scope. If it is not, ISO will refer the issue to NVPO for action.

Writing Group Prioritization Process

- Writing group participants were asked to indicate the relative importance of the six criteria using colored dots. Each participant placed one dot on each of the six criteria (which were printed on chart paper). Green dots indicated that a criterion was of the highest importance; yellow dots indicated that a criterion was very important; and red dots indicated that a criterion was relatively less important but still important.
- The criteria below have been listed from left to right in the order of importance that resulted from the dots exercise (based on the number of green dots each criterion received).
- Although all six criteria are very important, the prioritization exercise indicated that there is a sequence reflected in how the criteria should be applied. The first five criteria relate to the substantive question of what studies should be done. These five criteria should be applied to the ISO Research Agenda first, then the sixth criterion (which relates to whether/how a study can be done) should be applied.
- **Note:** Federal agency officials did not participate in the weighting exercise.

**Step 1:
What to Do**

**Step 2:
How to Do It**

	Step 1: What to Do					Step 2: How to Do It
Criteria	Significance of Exposure	Burden	Public Concern	Status of Existing Scientific Knowledge	Impact and Public Policy	Feasibility
Issues to Consider	<ol style="list-style-type: none"> 1. Number of people 2. Infants / children 3. Other vulnerable populations 4. Mandatory or universally recommended 	<ol style="list-style-type: none"> 1. Severity 2. Frequency 3. Incidence 	<ol style="list-style-type: none"> 1. Public Concern 	<ol style="list-style-type: none"> 1. Temporal sequence 2. Prior data 3. Plausible biological mechanism 	<ol style="list-style-type: none"> 1. Significant impact 	<ol style="list-style-type: none"> 1. Scientific (Scientific method, ethical considerations, etc.) 2. Logistics (cost, sequencing, etc.)

Note: Several of the criteria below were identified as important during the community meetings in Birmingham, Ashland, and Indianapolis. These are indicated with an asterisk (). (The criteria without asterisks were not included in the community discussions, so community members did not indicate whether they are important or not.)*

Specific Vaccine Safety Hypotheses (Category A)			
	Criteria	Issues to Consider	Comments
Step 1: What to Do	Significance of the Exposure	<ol style="list-style-type: none"> 1. Number of people who receive the vaccine(s).* 2. Receipt of vaccine by infants or children.* 3. Receipt of vaccine by other vulnerable populations.* 4. The vaccine(s) is/are mandatory or universally recommended.* 	<ul style="list-style-type: none"> • Communities indicated that whether a vaccine is given to children is very important.* • Communities indicated that whether a vaccine is mandatory is very important.* • Communities indicated that number of people who received the vaccine is important.* • Vulnerable populations include pregnant women, chronically ill, and the underserved.
	Burden of the Health Event	<ol style="list-style-type: none"> 1. Severity of the health event including acute and chronic disability, treatability, and preventability.* 2. Frequency of the health event.* 3. Increasing incidence of the health event 	<ul style="list-style-type: none"> • To extent possible, use a standard framework (e.g., QALY) to characterize severity. • Communities indicated that severity is more important than frequency.*
	Public Concern*	<ol style="list-style-type: none"> 1. Strength of public concern about a possible link between vaccination and the adverse health event.* 	<ul style="list-style-type: none"> • May include frequency of the concern (e.g., determined by a survey) or the passion with which the concern is expressed. • Communities indicated public and parental concerns are important.*
	Status of Existing Scientific Knowledge*	<ol style="list-style-type: none"> 1. Temporal sequence of the vaccine(s) and the health event 2. Prior data provide information that would support the hypothesis 3. A plausible biological mechanism exists linking the vaccine(s) and the health event. 	<ul style="list-style-type: none"> • Prior data may include information from surveillance or animal studies. • Communities indicated scientific concern is important.* • These considerations are based on the Bradford Hill criteria; other Bradford Hill criteria may be useful in assessing the existing scientific knowledge as well.
	Impact and Public Policy	A study is likely to have a significant impact on the understanding of this issue.	
Step 2: How to Do It	Feasibility	<ol style="list-style-type: none"> 1. Methodological and ethical feasibility 2. Cost of the study and impact on the ability to do other studies (including opportunity costs) 3. Optimal sequencing with other potential studies that may be done by groups other than ISO. 	

Prioritization of Categories B – D

General Principles

- Categories B – D include topic areas but not specific testable hypotheses that can be studied.
- Application of criteria to Categories B – D will lead to prioritization of the topics within each category.
- Following prioritization, ISO should convene working groups of internal and external experts to identify specific testable hypotheses that can be studied. Working groups should be convened first for topics that rank higher.

	Criteria	Category B: Vaccines and Vaccination Practices	Category C: Special Populations	Category D: Clinical Outcomes
	Significance of the Exposure	<ol style="list-style-type: none"> 1. Number of people who receive the vaccine or vaccination practice* 2. Exposure of infants and children* 3. Exposure of vulnerable populations 4. The vaccine(s) is/are mandatory or universally recommended.* 	<ol style="list-style-type: none"> 1. Number of people in the special population* 2. Levels of vaccine coverage in the special population 3. Vaccine(s) is/are mandatory or universally recommended for the special population.* 4. The special population is of particular concern to our society or is believed to merit a higher degree of care or attention* 	<ol style="list-style-type: none"> 1. The disease/syndrome occurs among infants and children* 2. The disease/syndrome occurs among vulnerable populations
	Burden of the Health Event	<ol style="list-style-type: none"> 1. Severity of the health event(s) hypothesized to be associated with this vaccine or vaccination practice in including acute and chronic disability, treatability, and preventability* 2. Frequency of the health event(s)* 3. Increasing incidence of the health event(s) 	NA	<ol style="list-style-type: none"> 1. Severity of the disease/syndrome including acute and chronic disability, treatability, and preventability* 2. Frequency of the disease/ syndrome* 3. Increasing incidence of the disease/ syndrome
	Public Concern*	Strength of public concern about a possible link between a vaccine or vaccination and one or more adverse health events*	Strength of scientific concern that the special population may experience greater risk of injury from vaccination*	Strength of public concern that the disease/syndrome may be associated with a vaccine(s) or vaccination practice*
	Status of Existing Scientific Knowledge*	Strength of scientific concern about a possible link between a vaccine or vaccination practice and one or more adverse health events*	Strength of scientific concern that the special population may experience greater risk of injury from vaccination*	Strength of scientific concern that the disease/syndrome may be associated with a vaccine(s) or vaccination practice*
	Impact and Public Policy	<ol style="list-style-type: none"> 1. Importance of study studying this vaccine or vaccination practice to an ongoing or imminent policy process 2. Importance of studying this vaccine or vaccination practice to confidence and trust in the vaccine program 	<ol style="list-style-type: none"> 3. Importance of study studying this special population to an ongoing or imminent policy process 4. Importance of studying this special population to confidence and trust in the vaccine program 	<ol style="list-style-type: none"> 1. Importance of study studying this clinical outcome process 2. Importance of studying this clinical outcome to confidence and trust in the vaccine program
Step 2: How	Feasibility	NA until development of a specific hypothesis or hypotheses		