External Consultant #3
FDA Foods Program Review of Chemical Safety Capacity and Management
- Suggestions for Program Strengthening and Improvement -
June 24, 2013

Introduction:

Recommendations and observations included in this document reflect consideration of:

- Versar interview summary documents (internal and external);
- A review of the CFSAN Redbook conducted by (b) (6) ;
- A summary of OFVM management listening sessions with CFSAN epidemiologists and biostatisticians, food industry and trade association representatives, and consumer organizations; and
- Personal experience in managing a large food/chemical safety program within the Federal government (EPA's Office of Pesticide Programs).

Recommendations and observations are divided into three topic areas – (1) Science Issues, (2) Internal Collaboration/Communication, and (3) External Communication and Transparency. Several recommendations closely align or duplicate those made by (b) (6) in her report on the CFSAN Redbook, probably due to similar challenges and successes experienced while employed within the management team at EPA.

1. Science Issues:

a. FACAs – I believe cutting edge science can and should be incorporated into regulatory programs, albeit through means that provide for ample public participation and transparency. In my view, one of the best ways to vet and ultimately fold new scientific knowledge and methodology into regulatory programs is through FACA venues. At EPA the principle FACAs related to pesticide science and regulation are the Scientific Advisory Panel (SAP) and the Pesticide Program Dialog Committee (PPDC).

The Scientific Advisory Panel is the FACA venue where independent scientific experts are brought together to provide advice and recommendations to EPA's pesticide program on new scientific methodologies for assessment of risk. Often new scientific approaches are suggested by scientists from the pesticide industry for evaluation of risk from pesticide products. To ensure full transparency and ample opportunity for public comment in the evaluation of such new methodologies, EPA holds public SAP meetings several times each year. Public vetting of new scientific methods through the SAP provides for case-by-case adoption of cutting edge science, which can subsequently be vetted for broader adoption and introduction into guidelines, risk assessment paradigms, etc. SAP meetings are announced in

the Federal Register and the public is provided ample opportunity to place comments in the public docket (available on-line) and even to make brief oral presentations at the public meeting. Following the meetings, within several weeks, the Panel provides the EPA with a report outlining its recommendations. This report is also docketed for public viewing. The Scientific Advisory Panel FACA has proven to be an invaluable resource for the Office of Pesticide Programs and thus I believe similar use of new or existing FACA Panels for bringing new scientific procedures into FDA's regulatory program could be helpful. The SAP web site can be found through the following link: http://www.epa.gov/scipoly/sap/

The Pesticide Program Dialog Committee is EPA's FACA that focuses principally on overarching advice related to pesticide regulatory matters, including registration, reevaluations, policy, communication, etc. Membership is comprised of a diverse group of stakeholders representing NGOs, State governments, other Federal departments (including FDA), pesticide user groups, trade associations, etc. Though not principally focused on scientific issues, EPA has used the PPDC FACA and its workgroups as a means to keep stakeholders informed and involved as new scientific issues and methodologies are brought into the regulatory process. One excellent example in this regard is the PPDC 21st Century Toxicology Workgroup. To facilitate understanding and acceptance of new toxicology methodologies, especially the somewhat revolutionary movement to *in silico* and *in-vitro* screening techniques, interested stakeholders need to be involved and educated early on, to facilitate trust in procedural changes as they occur. Again, to the extent feasible, FDA's chemical safety program should consider increasing the use of FACA and/or other public venues to keep interested stakeholders informed and involved in changes in scientific methodologies as they are developed. The PPDC web site can be accessed via the following link: http://www.epa.gov/pesticides/ppdc/

b. Collaboration with International Scientific Partners:

To the extent feasible, I recommend that OFVM scientists be afforded the opportunity to be involved in international scientific collaborations (workgroups, committees) established to facilitate scientific improvements and international harmonization of methodologies/models and risk assessment approaches. Though these activities can appear costly (travel costs, time spent in meetings and conference calls, document preparation and review, etc.), in the long run they are essential if U.S. regulatory programs are to remain international players/leaders in these fields. EPA's Office of Pesticide Programs has, for many years, been involved as key players in international scientific advancement and harmonization projects through the NAFTA, OECD and Codex venues.

One of the principle ways in which scientific methods for pesticide risk assessment have been advanced internationally is through collaboration and work sharing on specific risk assessments. Through "global review" of a new pesticide active ingredient, scientists around the globe participate in assessing the toxicology and environmental behavior of a pesticide collaboratively, sharing expertise and ideas. It is not uncommon for several countries to be involved in such a review, frequently including the US, Canada, EU, and Australia. In recent years, other countries have expressed interest and are included as direct participants or observers (Brazil, Mexico, China, etc.). The relationships and trust formed through these reviews have served not only to expand EPA's base of scientific expertise but also to alleviate workloads through division of labor during the review process (e.g., one country may complete primary review of toxicology data, another of environmental fate data, etc.).

c. Inter-Agency Collaboration:

Scientific principles related to addressing toxicology and exposure to chemicals from food sources should not vary to any significant extent between agencies/departments within the government. Further, challenging areas such as new *in vitro* and *in silico* toxicology methods; endocrine effects assessment; evaluation of mixtures, cumulative effects, and synergism; and consideration of sensitive populations should be advanced strategically within the Federal government using the best scientific expertise available. Both EPA (Office of Chemical Safety and Pollution Prevention, Office of Water, Office of Research and Development) and FDA have large numbers of toxicologists, chemists, epidemiologists, etc. working on the science of chemical risk assessment. Thus, establishment and maintenance of formal and informal mechanisms for communication and collaboration between scientists within the two organizations would seems to be a low-cost and highly effective means of advancing the science and effectively utilizing the scientific expertise that exists within the government. As the vast majority of these scientists are located within the Washington D.C. metropolitan area, there are few travel costs involved in attendance at FACAs, symposia, internal workgroups, etc. It might be useful to train managers of scientific units, in this regard, to ask with some frequency, "What other State and Federal organizations may have responsibility and/or expertise related to this project/activity? Should we contact them for support or to obtain more information?"

On a side note, I believe variation in risk assessment outcomes between Federal agencies, particularly when not well explained, can lead to of a lack of public trust in government regulatory science. The most obvious example would be a "point of departure" for adverse effects from ingestion of X chemical. A less obvious example might be a risk assessment, where FDA makes a determination that a chemical is safe when used as an indirect food

additive but EPA, *for the same use*, determines that the registration of a product for such use is unsafe. Such a situation can and may well have occurred for certain antimicrobial pesticides that are also indirect food additives, e.g., those used in the production of food packaging. Though such situations can be a result of differences in the statutes, they can be frustrating and inconceivable to a public stakeholder (FDA says it is safe and EPA says it is not?). At minimum, such disparate statements should be well explained, though my preference would be that public communications in such circumstances be jointly prepared with a final message that can make sense to those affected by the decision.

d. Details and Exchanges – It has been my experience that scientists can be re-energized and also develop invaluable scientific networks through formal detail/exchange programs. Such programs can be established or strengthened, to the extent they already exist, within FDA. However, such programs can also be set up and maintained with other Federal agencies (e.g., EPA), State governments, universities, and even international organizations or foreign governments. Probably few programs are more valuable for ensuring the retention of top scientists within an organization than the opportunity for a detail/sabbatical every few years. Another advantage of such programs when they are set up as exchanges is that the organization receives an employee from another scientific unit, who will usually have some knowledge, ideas and expertise to share during the detail exchange. This again is a relatively low-cost approach to maintenance of scientific expertise within the organization.

e. Scientific Society Meetings – Though they can be costly, these meetings are obviously good networking and learning opportunities for scientists and can be viewed as "perks" in times like these when raises and awards are very limited. It might be useful to pull together a scientist/employee workgroup related to society meeting attendance to generate some ideas on how best to facilitate at least occasional attendance of scientists at these meetings. At EPA, I can remember circumstances where scientists agreed to some low-cost travel alternatives to allow for more attendees within the travel budget (e.g., sharing rooms). I am not sure of the situation at FDA, but having a scientific/technical union representative present to participate in such discussions might be advisable.

2. Internal Collaboration/Communication

a. Structural Considerations - The management topic of organization by task vs. discipline is one that is likely discussed on a revolving basis within all large scientific organizations. During my tenure at EPA, I experienced both approaches used in various ways. My experience is that both have advantages and disadvantages and that the key to success is to recognize the disadvantages and attempt to address them through other means, i.e., other

than formal structural change. The major advantage of having scientists of a particular discipline together in formal units is that they can bounce ideas off of each other, learn from each other, support each other, etc. They are also often simply more comfortable working directly with people with a similar educational background. The disadvantage of this approach is often that these units lose sight of the larger goals of the organization and how to craft their work so that it is useful to risk assessors, risk managers and high-level decision-makers. I have also seen many instances in which such an organizational approach leads to a failure to appreciate the value of the work of other parts of the organization, possibly due to a lack of understanding as to what staff within other parts of the organization do or because they aren't "scientists."

Recognizing that neither a task-oriented nor disciplinary approach is perfect, I still believe that the best way to manage a chemical regulatory program is by a combination approach when the scientific "task" is a risk assessment. In this scenario, scientists from various disciplines are placed together in a unit with a dedicated supervisor and their task is to create a risk assessment that will allow risk managers in another unit to make recommendations for a regulatory decision. The supervisor/manager in conjunction with his/her counterparts in other units is thus responsible for setting priorities, coordinating schedules, and meeting agreed-upon commitments. At EPA, to address the downside of this approach, scientists within a given discipline often took their work product (prior to incorporation into a risk assessment) to a cross-organizational but discipline-specific peer review committee to provide comment and advice, e.g., for final selection of toxicity end-points or for review of a dietary exposure assessment. This system has worked, at least at EPA, as an effective way of keeping scientists fully engaged in their role as contributors to risk assessments while also affording them the opportunity and obligation to routinely interact with colleagues within their own scientific discipline.

b. Formation of Teams – I agree that when teams are formed there should be a step in the process that provides for consideration of what disciplines should be included. This comment applies not only to the risk assessment team but also to the broader team that would include legal support, risk managers, communication experts, etc. If epidemiologists are not routinely considered as part of the team "up-front," that should change so that their input can be more timely and useful.

c. Internal Transparency and Access to Information – For the most part, I believe information regarding work plans, procedural documents, etc. should be posted on the web so that internal stakeholders (FDA employees) and external stakeholders can view them whenever and wherever the need or

interest arises. Some examples of program management materials that can be posted and maintained include:

- ✓ Program priorities, such as strategic plans and annual goals.
- ✓ Work plans, including schedules and budgets
- ✓ Team and Team Leader assignments and contact information, by activity.

Though time-consuming, once a year at least, a high-level manager (Director) should have an all-hands meeting with each Office to go over these materials and take comment/questions. EPA's Office of Pesticide Programs has nine Divisions and at least once/year I held a meeting to discuss program priorities and budget challenges with each Division. This was definitely time well spent in terms of developing a sense of common purpose and commitment within the program.

d. Dispute Resolution – Often, in large scientific regulatory organizations there are differences of opinion as to how science should be interpreted and/or how risks should be managed. One approach to addressing this issue in a transparent fashion is to put a formal process in place that allows for a written "dissenting opinion" to be attached to the risk assessment or final decision document. Though these situations were rare at EPA, they did occur and we found that this procedure helped to ensure transparency and also to prevent extended delays when full team consensus simply could not be reached. I don't know if such situations occur often at FDA but if they do occur, establishment of some similar procedure might be useful.

3. External Communication and Transparency

a. Confidential Information - I recommend that OFVM consider a revisiting of its legal responsibilities regarding maintenance of "confidential" information during the review process. At EPA, there was a long-standing myth that full risk assessments for new active ingredients and new uses could not legally be vetted for public comment prior to registration. However as part of the movement toward increased transparency in government regulatory activities, a further assessment of what was legally protected was considered and it was determined that very little information must actually be kept confidential (e.g., product composition, manufacturing process, some production statistics, etc.). Thus, in 2009, the Pesticide Program began vetting certain risk assessments for public comment prior to making a registration decision (new chemicals and certain key new uses of existing chemicals, e.g., first food uses). This change has been useful for a variety of reasons but one of the reasons is simply that a public docket is established in these cases. Thus, all risk assessment materials and public comments as well as proposed and final decisions are available for internal and external stakeholder viewing in web-based dockets. Probably more than any other

technique, this approach encourages the production of complete, high quality risk assessment and decision documents by Agency employees and facilitates timely record management.

b. Chemical Search Engine - One of the most recent and highly useful tools developed by EPA for accessing chemical case information is the Chemical Search engine that can be accessed at the following link: This link provides easy public and internal access to basic chemical information as well as the dockets containing information on ongoing and completed risk assessments and regulatory decisions on each pesticide chemical. I have found it to be a real time-saver in terms of easy access to reliable current information. If not already in place, OFVM may want to consider a similar tool for chemicals under its purview. The following is a link to EPA's chemical search engine for pesticides: http://iaspub.epa.gov/apex/pesticides/f?p=chemicalsearch:1

c. Guidance and Procedural Documents – In general, all internal SOPs and procedural guidance documents can and should be posted on the web. This not only facilitates ease of access to the materials by FDA employees but also provides insights for stakeholders as to how best to provide useful data and information for review. The Redbook is a good example of such guidance though it needs to be updated, as described by (b) (6) in (b) (6) report. One good example of web-based/public access to EPA internal guidance materials is the Label Review Manual, which is divided into chapters that can be updated on a revolving as-needed basis and is available at the following link: http://www.epa.gov/oppfead1/labeling/lrm/

d. Routine FACA meetings – As mentioned above, the Pesticide Program Dialog Committee is a multi-stakeholder EPA FACA which advises the EPA's pesticide office on a variety of policy, regulatory and communication issues. The Committee meets twice a year and also maintains several topic-specific workgroups to provide advice regarding challenging issues related to pesticide regulation. The meetings are held twice a year and the public is invited to attend or listen via telephone. These meetings provide a great deal of transparency, access to information, and public involvement on emerging pesticide issues. FDA's OFVM likely has a similar FACA program in place. But if not, or if the program is not active, this is a communication/transparency tool that could be strengthened.