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How Regulatory Structures are Taking into Account Scientific Developments in Assessing Approved Food Contact Products

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Incorporating New Scientific Approaches into Regulatory Structures

- In recent years, new approaches developing for scientific testing of certain previously-approved food contact products.
- Raises difficult questions for FDA and other regulatory agencies.
  - Should new scientific testing approaches be incorporated into FDA regulatory approval and assessment processes?
  - How can new toxicological approaches be incorporated in assessments?
  - At what point in the development and debate on new toxicological principles should FDA incorporate them?
  - Whether and how new toxicological approaches should be applied by FDA to previously-approved food-contact products?

Food-Contact Substances – FDA Regulatory Approval/Clearance Mechanisms

- Under the Food Additives Amendment of 1958, 21 U.S.C. §321(s), food-contact substances can be approved or cleared principally through several mechanisms:
  - Direct food additive regulations, following submission of a food additive petition, 21 C.F.R. Part 170.
  - Indirect food additive regulations, following submission of a food additive petition, 21 C.F.R. Part 174.
  - As a generally-recognized-as-safe (GRAS) substance, 21 C.F.R. Part 182, through voluntary submission to FDA or through a self-claimed process based either on long-established safe use in contact with food or on scientific procedures accepted by qualified experts in the field.

Food-Contact Substances – FDA Regulatory Approval/Clearance Mechanisms

- The FDA Modernization Act of 1997 created a Pre-Market Notification (PMN) system as the primary mechanism by which FDA regulates substances used in the production of food contact products, 21 U.S.C. §348 (h); 21 C.F.R §170.100 et seq.
  - For a detailed review of these and other related mechanisms, see Institute of Food Technologists Expert Report, *Making Decisions about the Risks of Chemicals with Limited Scientific Information*, 8 Comp. Reviews in Food Sci. & Food Safety 269, 271-78 (2009).

Traditional and Evolving Toxicological Principles for FDA Food Contact Substances Regulation

- Traditionally, FDA toxicological principles for food contact substance safety assessment have relied on mega-dosing of a single substance.
- In recent years, scientific work in toxicology, with respect to low-dose effects, mixture toxicity, prenatal and neonatal exposures, and transgenerational effects, has raised questions as to the continued exclusive use of the traditional regulatory approach.
  - For a brief recent review of these issues, see J. Muncke & S. Mahinka, *21st Century Toxicology and its Implications for FDA Regulation of Food-Contact Substances*, FDLI Update 32 (Nov.-Dec. 2009).

Examples – Regulatory Issues Regarding Previously-Approved Food-Contact Products

- Subsequent scientific assessments raising safety concerns regarding previously-approved or marketed food-contact products have presented significant regulatory issues for FDA.
- Examples include:
  - Saccharin – attempt in 1977 by FDA to ban use on the basis of new studies prevented by the Saccharin Study and Labeling Act of 1977; FDA withdrew its proposed ban in 1997.
  - Melamine – melamine resin, often used in food packaging and tableware, was implicated in 2008 in a scandal in China involving adulteration of milk and infant formula. FDA responded in Oct. 2008 by issuing new methods for analysis of melamine appearance in infant formulations.

Examples – Regulatory Issues Regarding Previously-Approved Food-Contact Products

- Triclosan – FDA and EPA recently issued statements that new research raised "valid concerns" regarding this widely-used antimicrobial product's possible health effects, particularly as to whether it acts as an endocrine disrupter. See The Tan Sheet at 15 (April 12, 2010).

- Bisphenol A – FDA and EPA recently issued statements that new research raises "some concern" about the potential effects of BPA, from FDA's perspective, "on the brain, behavior, and prostate gland in fetuses, infants, and young children," and that the agencies are reviewing the substance and the scope of its approved uses. See FDA, Update on Bisphenol A (BPA) for Use in Food, (Jan. 20, 2010); EPA, Bisphenol A Action Plan (March 29, 2010).
  - For a recent review of the history of the scientific controversy concerning BPA, see S. Vogel, *The Politics of Plastics: The Marking and Unmaking of Bisphenol A "Safety,"* 99 Am. J. of Public Health S559 (Sept. 3, 2009).

Regulatory and Related Issues Concerning Reassessment of Approved Food-Contact Products – Example of BPA

- Significant regulatory and other issues are presented by reassessments of approved food-contact products.
- With respect to BPA, for example:
  - Substantial scientific controversy regarding recent testing and the validity or applicability of new toxicological approaches such as low-dose testing or synergistic effects
  - Political concerns raised both in Congress and several of the states, e.g., Massachusetts
  - Actions by foreign regulatory agencies, including the European Food Safety Authority (EFSA), Health Canada, and France.

Practical Issues Concerning Reassessment of Approved Food-Contact Substances – Example of BPA

- In addition to FDA and other regulatory agency reviews, other practical issues are presented by reassessments of approved food-contact substances for manufacturers:
  - Customer acceptance (e.g., decisions by manufacturers of plastic baby bottles to end use of BPA)
  - Consumer concerns
  - Potential consumer class action product liability litigation and/or customer commercial litigation
  - Public interest group litigation and/or regulatory agency filings
  - Potential unavailability of substitute products

Practical Issues Concerning Reassessment of Approved Food-Contact Substances – Example of BPA

- Scientific concerns raised with respect to an approved food-contact product also present regulatory issues relating to the ability of FDA to act.
  - In its update statement on BPA use of Jan. 2010, FDA encouraged "manufacturers to voluntarily submit a food-contact notification for their currently marketed uses of BPA-containing materials."
  - However, since, as FDA noted, it could quickly revoke clearance for continued use through a notice in the Federal Register for a food contact substance marketed under the Food Contact Notification Program, there is no practical incentive for a manufacturer whose product is now marketed under a food additive regulation to voluntarily make such a PMN submission.

Substantial FDA Regulatory Issues in Resolving Concerns Regarding Approved Food-Contact Products

- Ultimately, resolution of public health and safety issues raised regarding approved food-contact products will be based on scientific testing and interpretation.
- However, as with BPA and other products of current concern, where there is significant scientific controversy and where resolution by further testing can be expected to take several years, difficult issues are presented for FDA regulatory scientists and decision-makers as to how properly to protect public health amid scientific uncertainty.

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