Personalized Medicine: Then, Now, and Future

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How is FDA addressing Personalized Medicine?

- Personalized Medicine
  - Companion Diagnostics
    - Policy and practice
    - Internal and external
  - Novel Technologies
    - UHTP (next-gen) sequencing
    - Array-based CNV
    - Proteomics
  - Policy Issues
    - LDTs
    - RUOs
    - various
  - Scientific Questions

FDA's View of Personalized Medicine

- Commissioner Hamburg
  - Committed to Personalized Medicine program
- Office of Medical Products and Tobacco
  - Manages three medical product centers
  - Direct interest in personalized medicine
  - Initiating OC coordination of personalized medicine in product centers
- CDRH/CDER/CBER
  - Working together to identify issues, create solutions
    - Internal practices
    - External guidance

CDRH Role in Personalized Medicine

- In CDRH
  - Personalized Medicine Staff
    - 6 dedicated staff in PM
      - Added 2 new policy fellows 2012
    - ~10 review staff in review divisions
    - CMO
  - Current scope is IVDs, with other device issues as needed
  - PM a priority for CDRH, but requires careful approach within current laws/regulations

Current PM Activities

- Draft Companion Dx guidance
  - Published July 2011
  - Plan to finalize “very soon”
- Preparing “Codevelopment Guidance”
  - Many interesting issues
  - Not a “how to” but a general guide
  - Plan to publish draft in 2013
- Other guidances, e.g. Trial Enrichment
- Internal policy building
  - Centers’ roles in decision-making
  - Cross-center communications
  - Timing/coordination
  - Consistency and quality of reviews

More Personalized Medicine

- Emerging technologies
  - Next-gen sequencing
    - Approaches to regulation—targeted, whole exome, whole genome
    - Standards
  - Array-based testing
  - Proteomics
  - Innovation Pathway

Lessons as Result of Companion Dx Approvals

- Accelerated drug approval does not significantly change when companion Dx needed
- Intercenter communication now highly effective and review staff working well together
  - Co-attendance at meetings
  - Questions transmitted in timely manner
  - Approvals and press well-coordinated
  - *Continue to generalize the model*
  - *Recognize impending changes to model: NGS, "basket" trials*
- Drug and Dx sponsors should carefully define expectations for each other
- Modular PMA process for Dx highly preferred over traditional
- Codevelopment has passed first tests

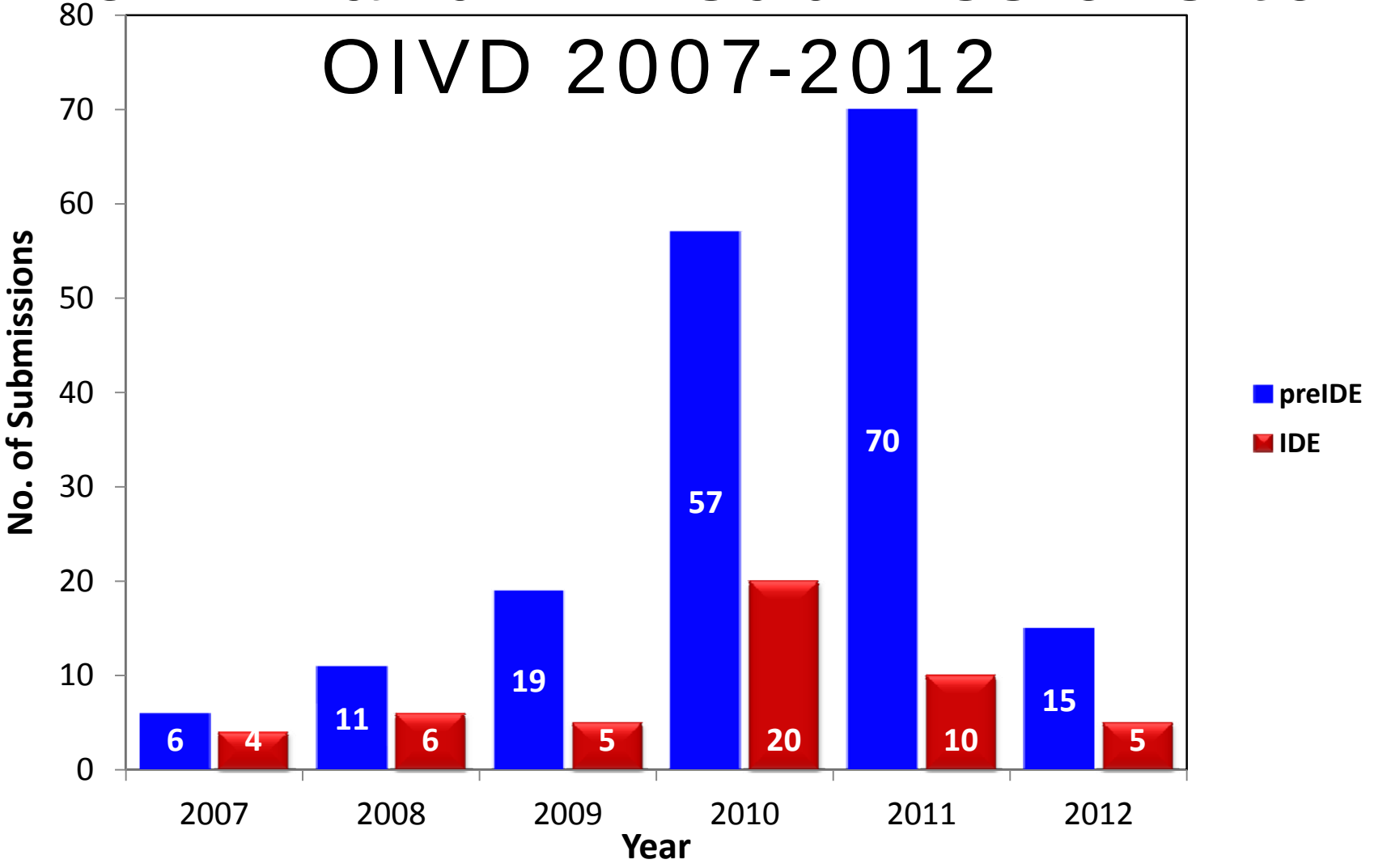
Intercenter Policies and Communications

- Different Centers have different laws, regulations, cultures, and needs
- Process becoming established as “normal”:
  - Working in close proximity with each other
  - Inviting each center to others’ meetings
    - See the big picture, warts and all
  - Identifying issues together and creating draft policy
  - Regular internal interactions on broader scope

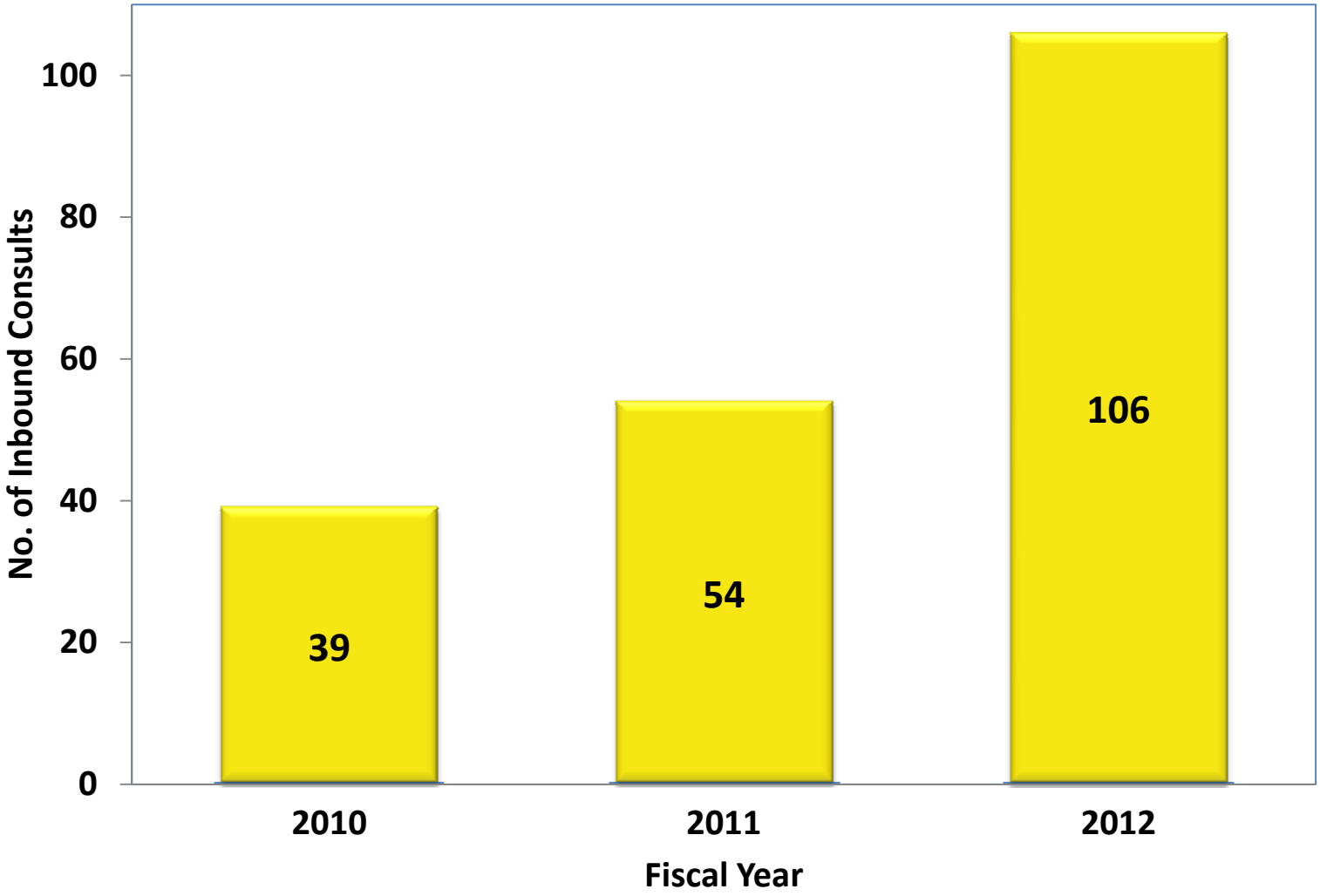
Other Intercenter Advances

- Creating agreed-to ways of working together
- Recognizing each Center's role in process
  - Including limitations
- Creating streamlined regulatory communication methods
  - Different centers use different systems to archive, track submissions
- Recognition of status of tests in INDs

Pre-IDE and IDE submissions to OIVD 2007-2012



OIVD InterCenter Consults FY 2010-2012



What's Changing

- NGS now in play
  - Diagnostic and companion diagnostic uses
- Greater interest in "basket" trials and combination drug trials
- "Breakthrough" therapy approval possible
- Rare mutations/markers gaining ground
  - Need systematic approach to gathering evidence

Prognosis and Predictions

- Progress is rapid, but still has its unpredictable moments
- Everyone playing well together
  - Each center learning a lot from the other
- Sense that system will work
  - New lessons from every new model
- Greater internal uniformity already in place
- Guidance lagging submissions as we learn
- System operational but still needs some refinement
- Sponsors “getting it”
- Big changes in the offing; we are preparing

- Thanks!
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