BIQSFP Background: Implementation of the 2005 CTWG Scientific Quality Initiatives

**Goal:** Enhance the scientific quality of NCI-funded clinical trials by improving prioritization, funding and standardization of associated biomarker and quality of life studies

**Initiative 1:** Assure that adequate funding is available for clinical trials involving biomarkers, imaging, and quality of life

**Initiative 2:** Establish quality control standards for laboratory assays and imaging procedures used in association with NCI-funded clinical trials
Scientific Quality: July 2015 CTAC Assessment

- CTWG Scientific Quality initiatives were achieved; recommended periodic updates to CTAC
  - Periodic updates on BIQSFP funded projects including the outcomes of trials incorporating BIQSFP funded tests
  - Periodically assess the status of assay and imaging standards and decide if additional NCI action is needed
  - Advise if BIQSFP policies and procedures should be re-examined to determine if it remains optimally structured
Integral & Integrated Studies

- **INTEGRAL**
  - Inherent to the design of the trial from the onset
  - Performed in real time for the conduct of the trial
  - CLIA-certified lab

- **INTEGRATED**
  - Clearly identified as part of the clinical trial from the beginning
  - Identify or validate the clinical utility of assays, imaging tests, or QOL instruments that are planned for use in future trials
  - Designed to test a hypothesis, not simply to generate hypotheses
BIQSFP - Current (2016) Trial Eligibility

- Trials conducted by **NCTN groups and NCORPs**
- Phase 2 (≥100 patients) and 3 **treatment** clinical trials with integral or integrated biomarker or imaging studies
- Phase 3 **cancer prevention** clinical trials with integral or integrated biomarker or imaging studies
- Randomized **symptom science/supportive care** clinical trials with efficacy endpoints
- **Cost-Effectiveness Analysis (CEA)** studies are part of a randomized phase 3 treatment or prevention clinical trial with a comparator arm or a symptom science/supportive care clinical trial with a comparator arm.
Components and Review of BIQSFP Studies

Biomarker
Imaging
QOL
CEA

Integral
Integrated

NCI Scientific Steering Committee evaluation
CTROC prioritization and funding approval
Periodic CTAC review
BIQSFP Applications for Studies Embedded in Clinical Trials (FY09 – FY16)

- **Biomarker**: 56% approved from 105 submitted studies.
- **Imaging**: 33% approved from 24 submitted studies.
- **QOL**: 14% approved from 21 submitted studies.
- **CEA**: 11% approved from 9 submitted studies.

Total of 159 study applications submitted in 117 concepts.
BIQSFP Funding by Study Type (FY09 – FY16)

TOTAL BIQSFP FUNDING COMMITTED: $60,903,638

- Biomarker (n=59) $52,886,545
- Imaging (n=8) $4,615,622
- QOL (n=3) $2,731,404
- CEA (n=1) $670,067

$60,903,638
Concepts/Trials with Integral/Integrated Studies

- Integral Only: 42 concepts, 72% approved with BIQSFP studies
- Integrated Only: 46 concepts, 46% approved with BIQSFP studies
- Both: 29 concepts, 31% approved with BIQSFP studies

N=117 concepts
* One concept approved with two integral studies.
Biomarker Study Purposes

INTEGRAL BIOMARKER Purpose

Eligibility/Balancing Arms = 35
Treatment Response = 2
Symptom/Toxicity = 0

INTEGRATED BIOMARKER Purpose

Test for Eligibility/Balancing Arms = 0
Test for Treatment Response = 19
Test for Symptom/Toxicity = 3
### FY’09-FY’16 Approved BIQSFP Study-Type Funding

<table>
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<tr>
<th></th>
<th>TOTAL FUNDING</th>
<th>AVERAGE COST/PROTOCOL</th>
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*Includes CEA

71 BIQSFP studies funded across 61 NCI protocols = $60,903,638
FY’09-FY’16 Approved BIQSFP Studies by Protocol Disease Site

- Peds Leukemia/Lymphoma: 13
- Adult Leukemia/Lymphoma: 6
- Brain: 6
- Lung: 6
- GU: 6
- Head & Neck: 5
- GYN: 4
- Breast: 3
- GI: 2
- Melanoma: 1
Summary of Approved Protocols w/ BIQSFP Studies

- 71 BIQSFP studies approved across 61 NCI protocols
- 2/61 concepts/protocols withdrawn prior to study activation
- 50/61 protocols with BIQSFP-funded studies activated
  - 14 accrual complete; study outcome pending
  - 33 actively accruing
  - 3 administratively closed (1-toxicity; 1-drug supply; 1-lack of accrual)
## FY’08-FY’16 Studies Closed to Accrual (n=14)

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* Primary study results reported in Clinicaltrials.gov
Studies with the Potential to Change Standard of Care

- Minimal Residual Disease (MRD) - flow cytometry in pediatric trials (AAML1531, AALL1231, & AALL1131), NGS in adult trials (E1910)
- MGMT promoter methylation - GBM (A071102 & NRG-BN001)
- HPV-p16 stratification - H & N Cancers (RTOG 1016 & 1216)
- FLT3 alterations - Pediatric AAML (1031 & 0531), Adult Acute Myeloid Leukemia (S1612)
- Ki67 - proliferation marker in breast cancer (A011106)
- ERCC-I - proliferation marker in gastric and gastroesophageal cancers (S1201)
- HER2 - overexpression in esophageal adenocarcinoma (RTOG 1010), amplification in advanced colorectal cancer (S1613)
- Gene Expression Profiling - ABC-subtyping in DLBCL (E1412)
Program Summary

- BIQSFP meets its mission to provide funding for integral and integrated studies in a timely fashion.
- BIQSFP supports ‘precision medicine’ and enhances novel trial design.
- Biomarker studies represent the majority of the BIQSFP applications and funded studies.
- Funded studies have the potential to change the standard of care.
- A limited number of studies have achieved their primary endpoint.
- Assessing the scientific value of the program as studies are maturing is a challenge.
Questions?

Thank you!

https://www.cancer.gov/about-nci/organization/ccct/funding/biqsfp

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