Cancer Research Workforce Training

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U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
National Institutes of Health
National Cancer Institute
Overview

• Career Development Award (CDA) Mechanisms
• Data Sources
• Overall Success Rates and by Degree MD, PhD, MD/PhD
• Success of Subspecialties Surgery, Pathology, Medical Oncology, Radiation Oncology
• Total NCI Investment
• Conclusions
• Recommendations
NCI's Challenge

Funds available

Adjusted for biomedical inflation

Cumulative loss of NCI purchasing power since 2004: 19%

Dollars in billions

FY04 FY05 FY06 FY07 FY08 FY09
Mechanisms

• K07 - Cancer prevention, control, behavioral, and population sciences
• K08 - Laboratory-based basic science, biomedical, behavioral, and/or translational research
• K22 - Basic science, patient oriented research, or prevention, control, behavioral and population sciences
• K23 - Clinically trained professionals pursuing patient-oriented research
• K99/R00 - Basic science research in human cancer systems

• K12 - Enhance collaboration among MDs and basic science researchers to promote translational therapeutic research
• Loan Repayment (LRP) - For qualified educational debts; receive up to 70K over two years. Can compete for repayments of remaining debt
Data Sources

• Information for Management, Planning, Analysis & Coordination (IMPAC II)
  • Descriptive & scientific research project data
  • Data span FY 2004 – 2008
• Medical Subspecialties
  • Surgery
    – Surgical Oncologists, General Surgeons
  • Pathology
  • Medical Oncology
    – Medical Oncologists, Hematologist-Oncologists
  • Radiation Oncology
    – Radiation Oncologists, Radiologists
Success Rates by Degree

![Graph showing success rates for different degrees over the years.](image-url)
CDA Awards by Mechanism

Grants Awarded (#)

MD

04 05 06 07 08 04 05 06 07 08

PhD

04 05 06 07 08

MD/PhD

04 05 06 07 08

K99  K23  K22  K08  K07
Awardees
(total number)

Includes all active individual CDAs & K12 appointees
NCI’s CDA Investment

Investment ($ millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>MD</th>
<th>PhD</th>
<th>MD/PhD</th>
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Includes all active individual CDAs & K12 appointees
NCI CDA Investment by Subspecialty

Includes all active individual CDAs & K12 appointees
Conclusions

• The number of applications submitted by physician scientists fluctuates by ~10% from year to year (incomplete data for FY2008).

• The success rate for physician scientists has remained relatively stable.
  – Oncologists are still actively engaged in and pursuing research (exception is FY 2007).

• The number of applications submitted by medical subspecialists dropped 22% from FY 04-06 & has remained constant.

• The LRP continues to encourage physician scientists to pursue research careers.
Recommendations

• Increase the salary cap on CDAs from $75K to $100K.
• Partner with Foundations and Societies to supplement resources for subspecialty physicians in academic research.
• Evaluate the number of CDA recipients continuing in academic research.
  – Consider re-directing dollars to successful CDA mechanisms.
  – Consider re-directing LRP dollars to physician scientists.
Acknowledgements

- NCI Cancer Training Branch Staff
  - Lester Gorelic
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  - Shannon Lemrow
  - Nancy Lohrey
  - Dorkina Myrick
  - Melissa Stick
  - Jaye Viner
## # of CDA recipients who received R01 awards by Degree

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**Legend:**
- **CDA Recipients**
- **R01 Recipients**
K08 MD Awardees’ Eventual Application for, and Funding of NIH R01 Equivalents *, FY 1990 - 2008

Number of Investigators in First Year of K08 Award

Percent of Initial Cohort with Outcome

Awarded K08; Nothing More
Awarded K08; Applied, No Later Award
Awarded K08; Applied, Received Later Award

* R01 Equivalents’ include R01, R23, R29, R37 mechanisms
K23 MD Awardees’ Eventual Application for, and Funding of NIH R01 Equivalents *, FY 1998 - 2008

* R01 Equivalents ‘s include R01, R23, R29, R37 mechanisms
R01 MD Awardees’ Eventual Application for, and Funding of NIH R01 Equivalents *, FY 1990 - 2008

Number of Investigators in First Year of R01 Award

Percent of Initial Cohort with Outcome

- Awarded R01; Nothing More
- Awarded R01; Applied, No Later Award
- Awarded R01; Applied, Received Later Award

* R01 Equivalents’ include R01, R23, R29, R37 mechanisms