



EIS

The Epidemic Intelligence Service



Douglas Hamilton, MD, PhD
Director, EIS Program

What is the EIS?

A 2-year post graduate experience
and on-the-job training
for health professionals
interested in applied epidemiology

Historical Background

- July 1946 CDC established with mandate to help state control communicable diseases
- October 1947 CDC assigned responsibility for epidemic aid to states
- July 1951 Epidemic Intelligence Service (EIS) established

Tradition of Service to the States

“Asked if they would accept responsibility for answering all epidemic requests, NIH officials replied, according to Langmuir, ‘Certainly not. Only the interesting ones.’ CDC, however, would respond to any request.”

E.W. Etheridge, [Sentinel for Health](#) (1992)



SAFER • HEALTHIER • PEOPLE™



Historical Background

- April 1955 Cutter vaccine incident
- In the first full year of operation EISOs responded to over 200 requests
- Currently CDC responds to 80 to 100 request per year
- State based EISOs conduct an additional 600-800 investigations a year

Who is Eligible to Join EIS?

- Physicians with at least 1 year post-graduate clinical training
- Other health professionals such as veterinarians, nurses, and dentists with an MPH or equivalent
- PhD, DrPH, or other doctoral-degree holders in epidemiology, biostatistics, social or behavioral science, or nutrition



EIS Class of 2009

- Total Class Size = 82 (69 US, 12 Internationals)
- 27 Men (33%) and 55 (67%) Women
- 21/70 (30%) Minorities (US/US Perm Residents)
- Professional Backgrounds:
 - 41 (50%) physicians (63% with advanced degrees)
 - 25 (30%) doctoral-level scientists
 - 6 (7%) MD/PhD
 - 7 (9%) veterinarians
 - 3 (4%) RN/MPH



Training Model

- **Sample Content**
 - Applied epidemiology
 - Emergency response
- **Methods of Training**
 - Structured courses, including case studies
 - Exercises, Simulations
 - Required activities on-the-job
 - Mentoring
 - **Experiential learning**

EIS Officer Assignments

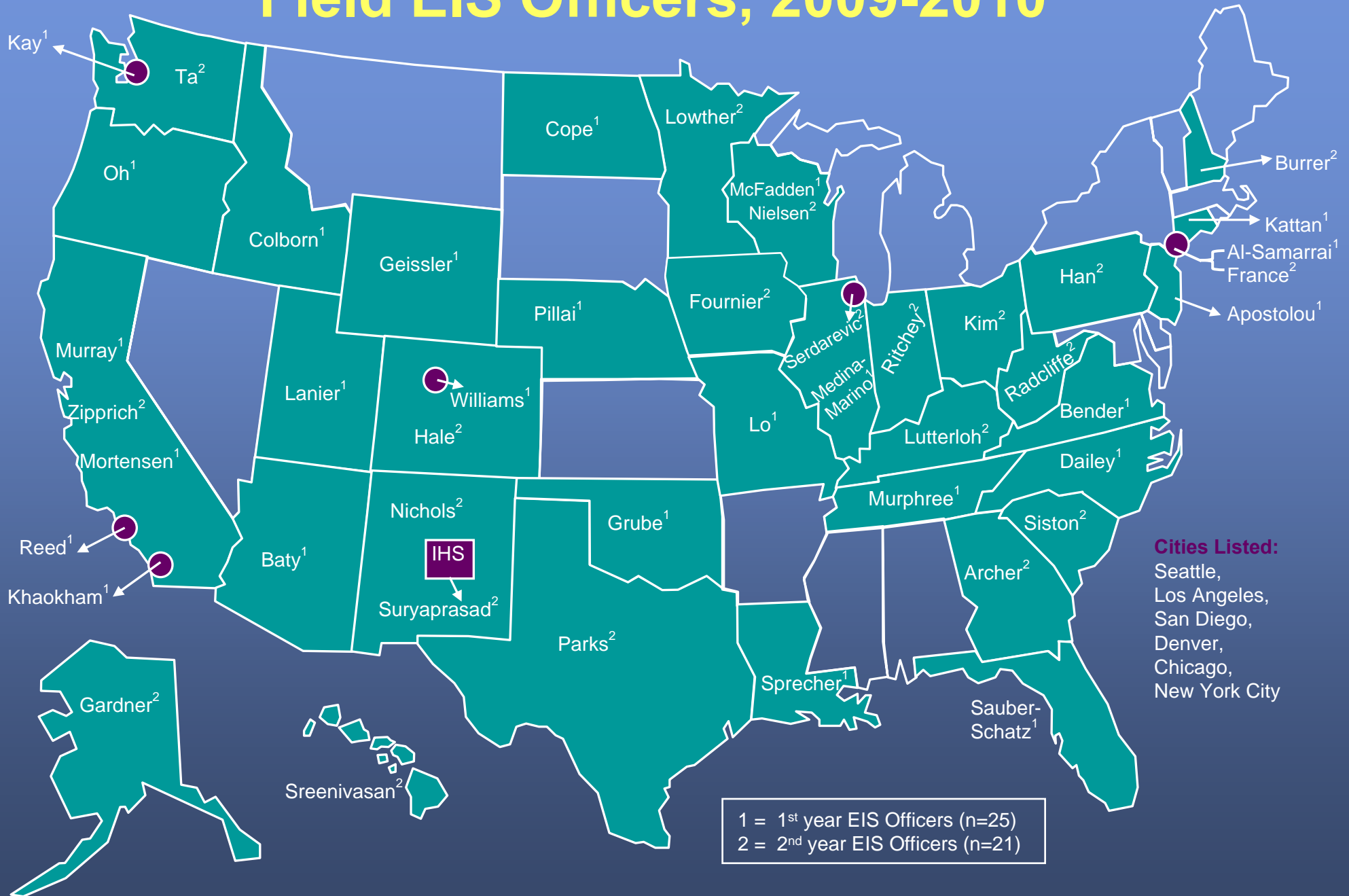
State or Local Health Department

- Broad, front-line public health experience
- Surveillance, investigation, and intervention

Headquarters

- Specialized, disease- or problem-specific experience
(e.g., vaccine preventable disease, STD, injury, ectopic pregnancy)
- Surveillance, investigation, and policy development

Field EIS Officers, 2009-2010



SAFER • HEALTHIER • PEOPLE™



Current EIS Officer Assignments (N = 162)

- Infectious Diseases (n = 77)
- State and Local Health Depts (n = 46)
- Environmental/Occ. Health, Injury (n = 19)
- Chronic Disease, Maternal/Child Health, Genomics (n = 15)
- Health Statistics (n = 3)
- Food and Drug Administration (n = 1)
- Office of Global Health (n = 1)

EIS Mission

- Training

- Develop Applied Epidemiology Skills
- Quantitative skills
- Research design
- Epidemiologic judgment
- Health communications

EIS Mission

- Domestic and International Service
 - Respond to Requests for Epidemiologic Assistance
 - Prevention
 - Disease and injury control
 - Health promotion
 - Capacity building

Professional Skills and Abilities Acquired Through the EIS Program

- Investigations of acute outbreaks and hazards
- Analyses of large data bases
- Evaluation of surveillance systems
- Publication and presentation of scientific manuscripts
- Oral presentations at national conferences
- Responding to public inquiries



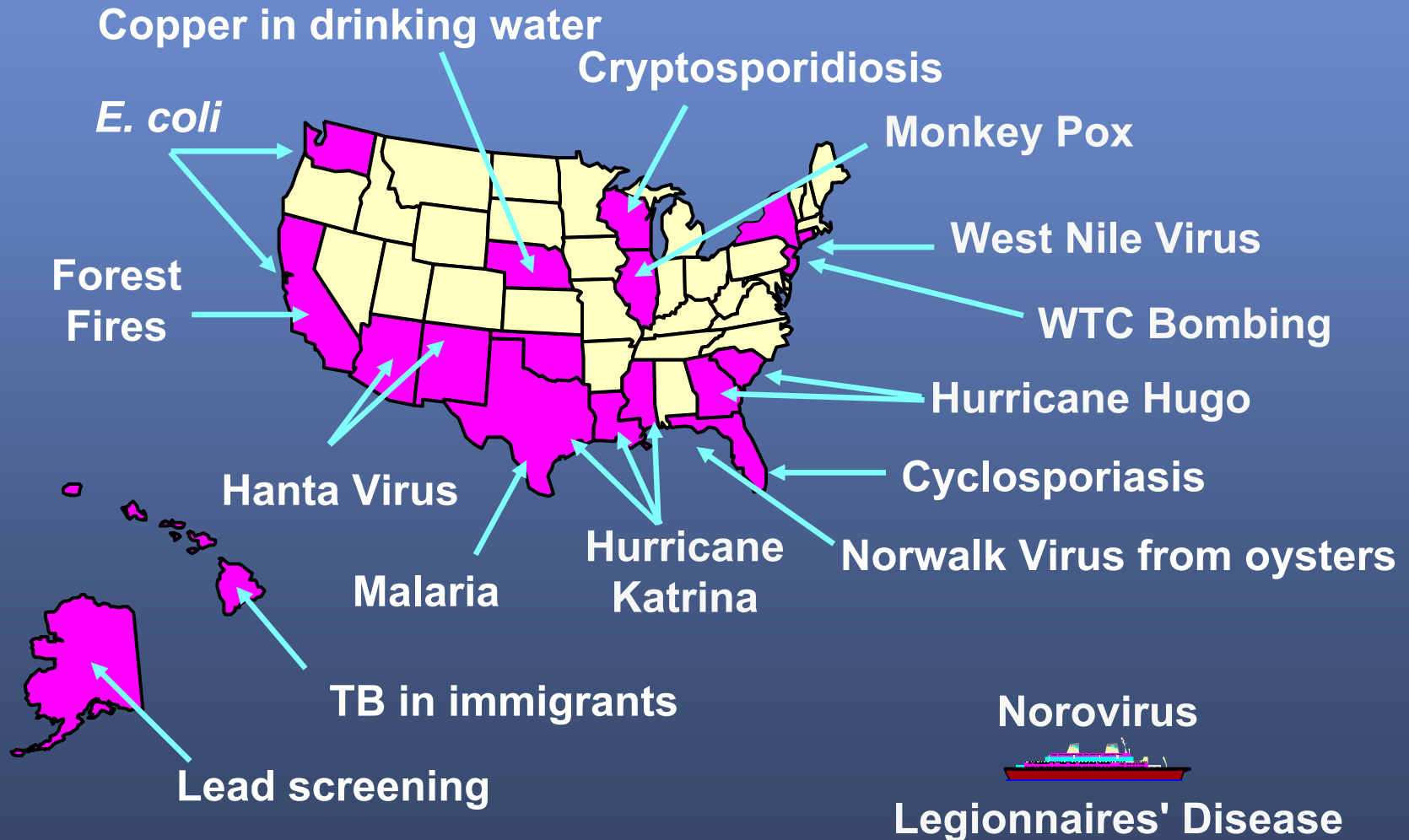
Selected Recent Publications by EIS Officers

- David B. Blossom et al. **Outbreak of Adverse Reactions Associated with Contaminated Heparin**
The New England Journal of Medicine 2008;359:2674–2684
 - EISO assigned to CDC/Division of Healthcare Quality Promotion
- Aron J. Hall et al. **Patterns of Abuse among Unintentional Pharmaceutical Overdose Fatalities**
JAMA 2008;300:2613–2620
 - EISO assigned to West Virginia
- SK Greene et al. **Recurrent Multistate Outbreak of *Salmonella* Newport Associated with Tomatoes from Contaminated Fields, 2005**
Epidemiology and Infection 2008;136:157–165
 - EISO assigned to CDC/DFBMB
- Jun Li et al. **Cancer Incidence Among Children and Adolescents in the United States, 2001–2003**
Pediatrics 2008;121:e1470–e1477
 - EISO assigned to CDC/Division of Cancer Prevention and Control

Selected Recent Publications by EIS Officers

- Joseph E. Logan et al. **Characteristics of Perpetrators in Homicide-Followed-by-Suicide Incidents: National Violent Death Reporting System—17 US States, 2003–2005**
American Journal of Epidemiology 2008;168:1056–1064
 - EISO assigned to CDC/Division of Violence Prevention
- E. Danielle Rentz et al. **Outbreak of Acute Renal Failure in Panama in 2006: A Case-Control Study**
Bulletin of the World Health Organization 2008;86:749–756
 - EISO assigned to CDC/EHHE
- Melissa Van Dyke et al. **Evaluation of universal antenatal screening for group B streptococcus**
New England Journal of Medicine 2009;360:2626-36
 - EISO assigned to CDC/ Bacterial Diseases/Respiratory Diseases

What Types of Problems do EIS Officers Deal With?

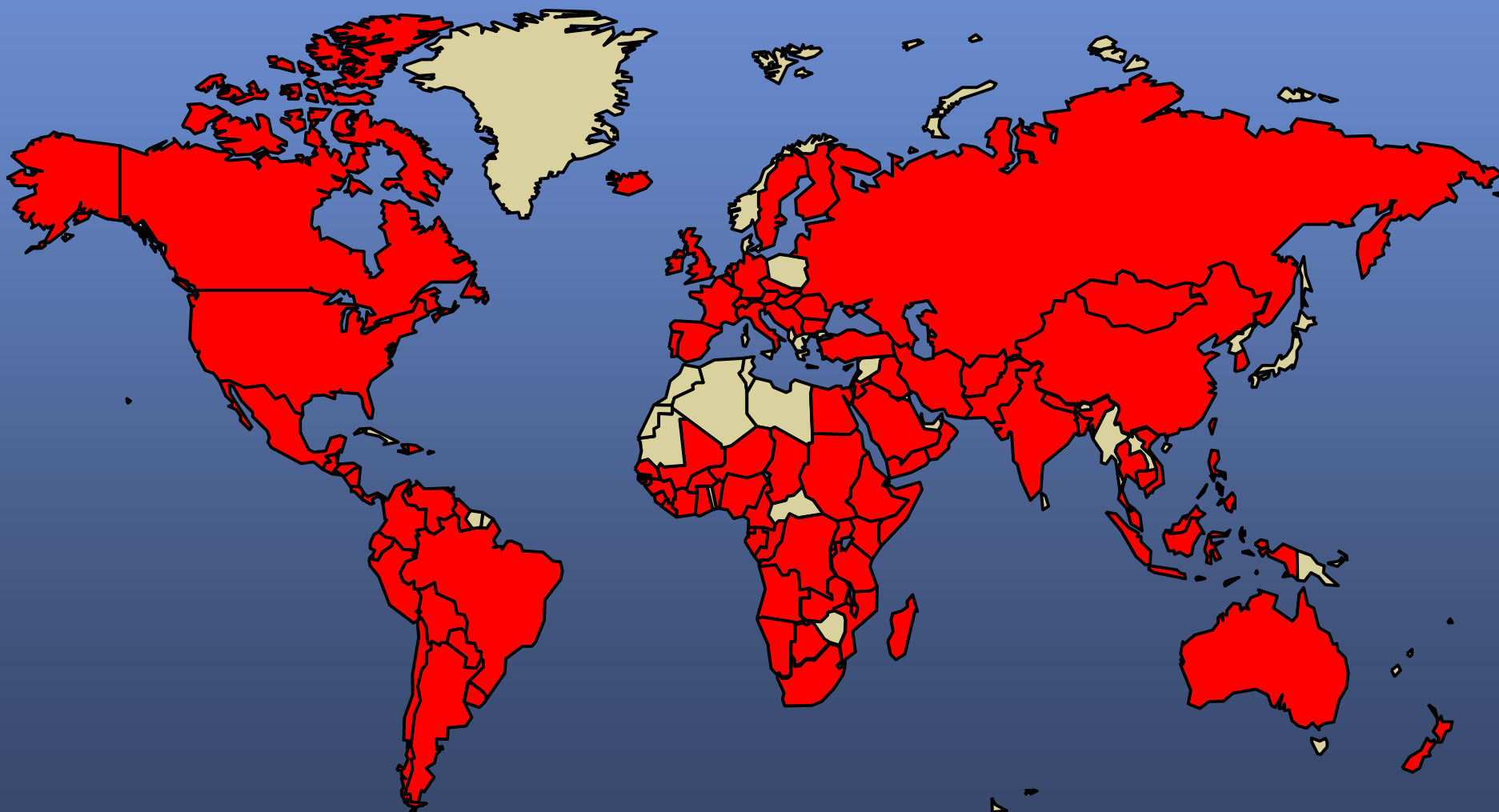


DEOC Deployments of EIS Officers

- West Nile Virus (2002)
- SARS (2003)
- Monkey Pox (2003)
- Avian Influenza (2004)
- Hurricane Katrina (2005)
- Rift Valley Fever in Kenya (2007)
- Acanthamoeba keratitis (2007)
- Ebola in the DRC (2007)
- H1N1 (2009)



Sites of Epidemic Intelligence Service EPI-AID Investigations 1950-2004







EIS Activities Post 911

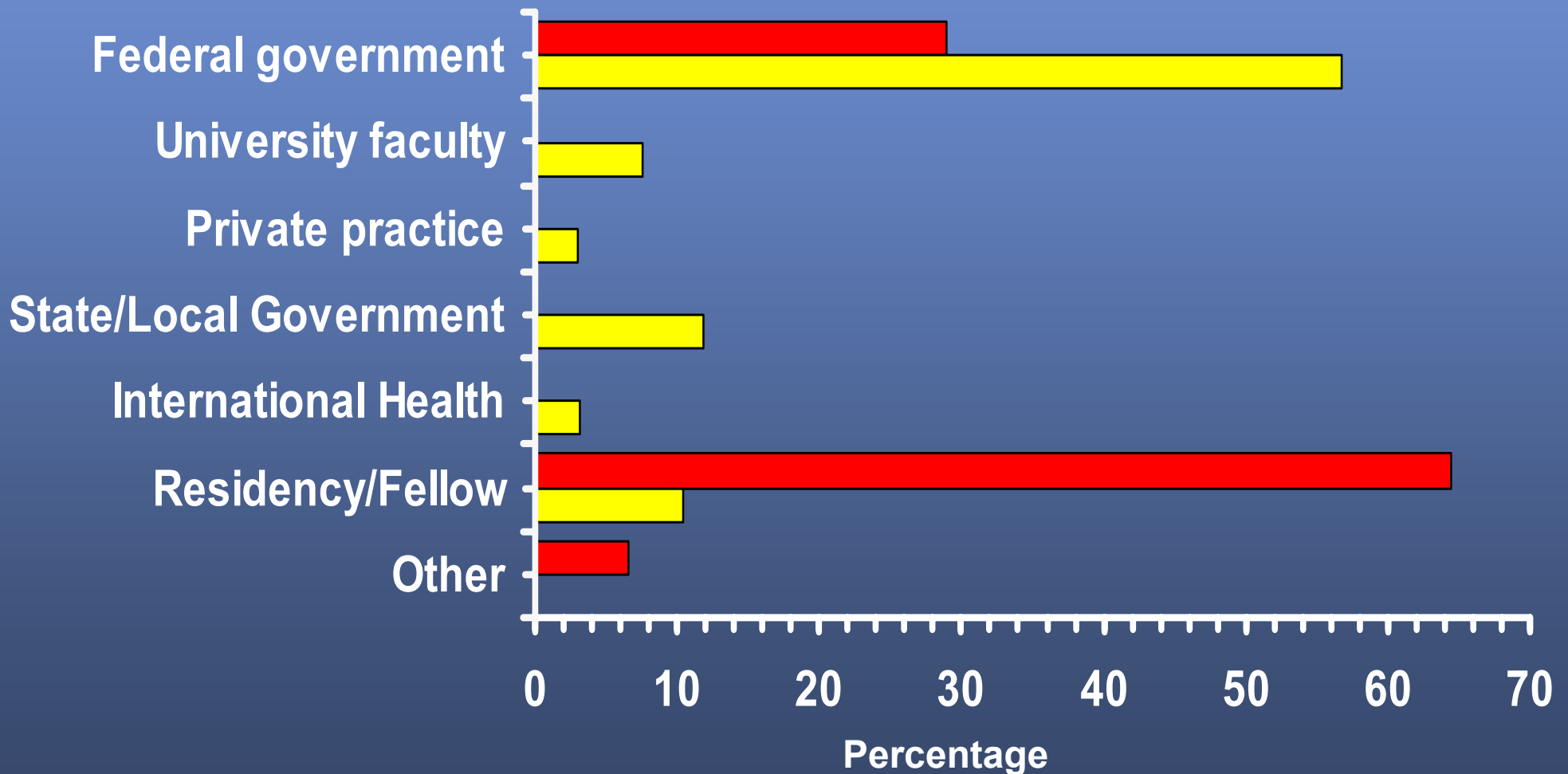
- 182 individual deployments
- 126 (86%) of all officers had been deployed into the field at least once
 - 39 officers deployed twice
 - 5 officers deployed 3 times
 - 2 officers deployed 4 times
- 64 (88%) 1st year and 62 (85%) 2nd year officers were deployed

Present Occupation of All EIS Graduates

- 70% work in public health
- 20% academia
- <10% private practice

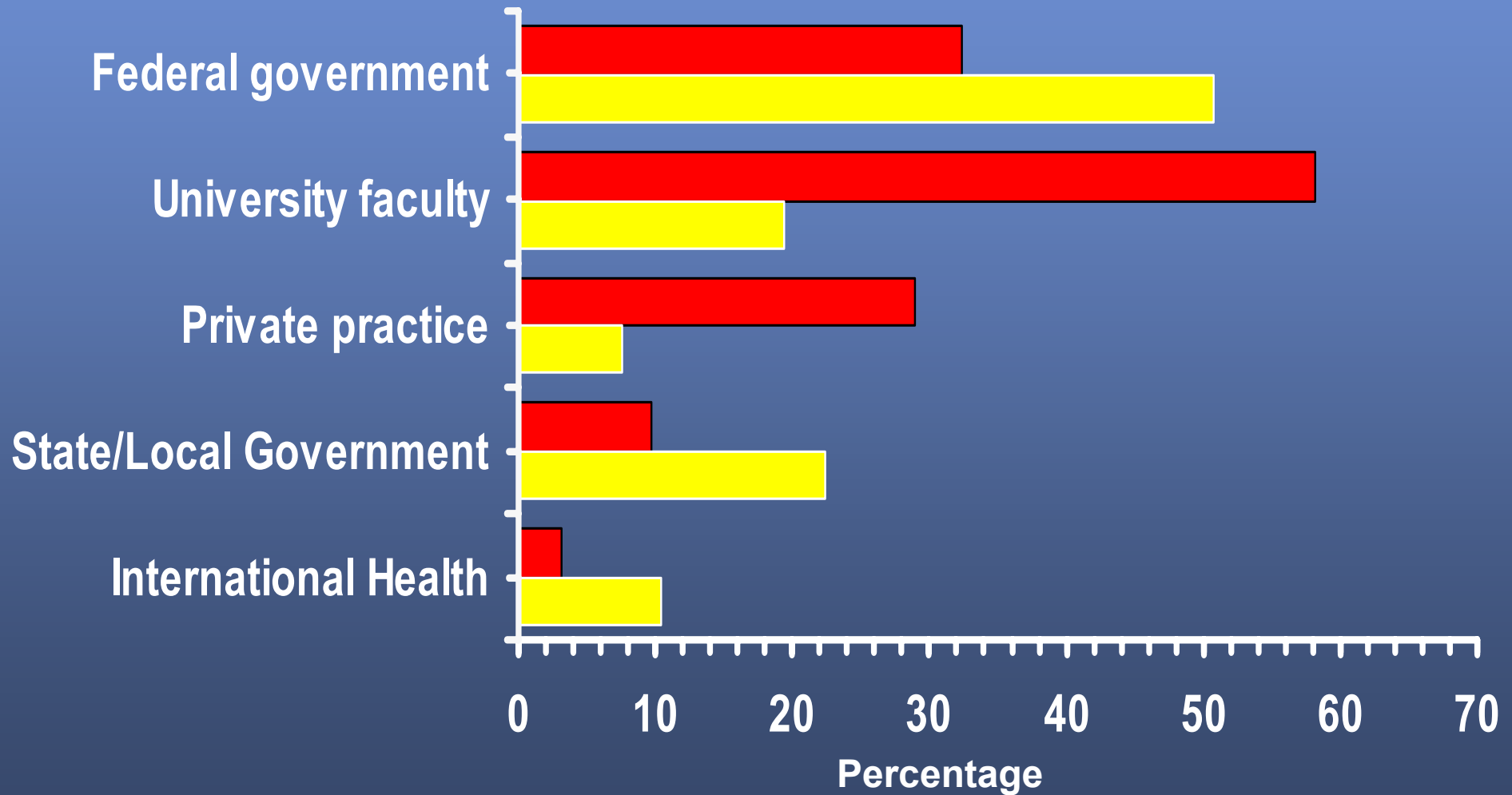
Initial Assignment After EIS

Class of 1965 vs 1985



Employment ≥ 5 Years

EIS Class of 1965 vs 1985









SAFER • HEALTHIER • PEOPLE™







SAFER • HEALTHIER • PEOPLE™







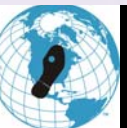


SAFER • HEALTHIER • PEOPLE™





SAFER • HEALTHIER • PEOPLE™





SAFER • HEALTHIER • PEOPLE™









SAFER • HEALTHIER • PEOPLE™







Enough said.
CDC

Antibiotics Got You Down? Control Your Side Effects

- Nausea**
 - Take antibiotic with food.
 - Take antacids at least two hours after taking antibiotic.
 - Diarrhea**
 - Take antibiotic with food.
 - Drink lots of fluid.
 - Dizziness**
 - Headache**
 - Change the time of day you take your antibiotic.
 - Take antibiotic with food.
 - Take acetaminophen (Tylenol).
 - Infection**
 - Use over-the-counter medicine like ranitidine (Zantac) or famotidine (Pepcid).
 - Take ranitidine (Zantac) or famotidine (Pepcid) with food.
 - Exposure to Sunlight**
 - Avoid direct exposure to the sun.
 - Wear protective clothing, such as long sleeves, and pants.
- CDC

FIRE ME,
DOUG

Cardinal Health
Cardinal Health
Cardinal Health

EIS Background

- 1951 EIS established with 23 recruits
- 1954 First woman officer
- 1954 First Asian officer (204)
- 1956 First Hispanic Officer (87)
- 1965 First AA/Black officer (161)
- 1968 First Native American officer (14)
- Approximately 20% - 35% of recent graduates represent ethnic minorities



EIS Background

- 1951 22 MDs and one sanitarian
- 1953 First veterinarian
- 1953 MS level microbiologist with an MPH
- 1954 First Nurse
- 1956 First Dentist
- 1975 First International Officer
- 1979 First PhD level scientist
- 2002 First JD/MPH
- 2008 First DPT/MPH

