SAVANNAH GA
RICHARD S. ROTH M.D.

Clinical Assistant Professor
Dept. of Internal Medicine
Mercer University
School of Medicine
The Beth Israel Cemetery Association honors William "Bill" Both in appreciation of his more than 40 years of invaluable insights, energy, devotion, and commitment to this cemetery. Trustee since 1970.
RICK

- Senior AME
- ATP & Lear 60 Typed, Gulfstream G550 Typed
- 4000+ flt hours (1000+ turbine)
- Director of ID Training at MHUMC
- Past President of Savannah Aviation Association
- Honorary Medical Commander for 165th Airlift Wing
- Married 23 years!...9/24/14
- Must love dogs!!
- Sleep deprived
BRUCE JENNER'S CAT
AN INQUIRY

INTO

THE CAUSES AND EFFECTS

OF

THE VARIOLE VACCINÆ,

A DISEASE

DISCOVERED IN SOME OF THE WESTERN COUNTIES OF ENGLAND,

PARTICULARLY

GLOUCESTERSHIRE,

AND KNOWN BY THE NAME OF

THE COW POX.

BY EDWARD JENNER, M.D. F.R.S. &c.

SECOND EDITION.

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1802.
INFECTIOUS DISEASE AND AVIATION UPDATE

- Vaccination
- Malaria Prophylaxis
- HIV and Aviators…..Stage…CD4 cts…..HIV PCR V. Load
- HIV Meds….Cognition….Support Networks
- Contagion in the Airframe…EBOLA Update…………Q & A
VACCINE TOOL BOX

- Influenza 2014…..Quadravalent…..High Dose
- Pneumococcal vax. Prevnar…..Pneumovax
- MMR…..Live and Two Doses if no prior Documentation
- Tetanus…Diptheria…Pertussis…..Tdap„„Q Decade
- Hepatitis A & B….Havrix…Recombivax….Twin Rix…0, 2, & 6
- Varicella…..Varivax…..ZostaVax…..single dose….live
- Polio….Inject.IPV…single dose
- Typhoid….oral(live)….Inject.
- Yellow Fever…..certification…extended stays…entry requirmnts
GOT ZOSTAVAX YET??

- Fifty years and older
  - Non-compromised hosts…it’s a LIVE virus
    - Prior shingles
      - No steroids on board > 1-2 months
    - No HIV nor Active Oncologic hosts
  - Secondary contagion to household contacts are “academic”
RICHARD DOTSON
BORN MARCH 21, 1797
DIED MARCH 29, 1884
AGED 87 YEARS
AT REST
MALARIA PROPHYLAXIS

- Primaquine
- Doxycycline
- Mefloquine
- Chloroquine
- Quinine
- Malarone (Combo Agent… Atavaquone+Proguanil)
  - Single Tablet formulation 250/100
  - 1-2 days BEFORE then 7 days post travel
HIV MARKERS...SURROGATES

- CD4 counts
- AIDS defining below 200
- OI window likely below 400
- HIV PCR Quant. Viral Load...limits of detection
- Undetectable...<20...<400...”blips”
- HIV Screening HIV ½.....EIA...West. Blot
- Indeterminants
HIV MEDS

- nRTIs……AZT….3TC….DDI…D4T….etc
- nnRTIs……Efarinez…Viramunne….Sustiva
- PIs…….Reyataz….Kaletra….Prezista….Crixivan…Norvir
- Combo “backbones”…..Combivir….Epzicom….TRUVADA
- HAART…..2 plus 1 ……equals “HAART”
- IDSA….NIH….2012 Initiation Guidelines….EVERYONE STARTS!
- Single Tabs HAART….ATRIPLA>>COMPLERA>>>STRIBILD
SUSTIVA.....ATRIPLA
SUSTIVA & ATRIPLA

- Efiranez.....nnRTI.....non-nucleoside
- CNS effects
- Sedation
- Cognitive “fog”
- PM qHS dosing without food
- Truvada + Sustiva == ATRIPLA
- Viread + Emtriva === Truvada
- Viread + Emtriva + Sustiva == ATRIPLA
- NOT in COMPLERA nor STRIBILD
POST EXPOSURE ISSUES

- Seroconversion Data
- Needle Stick from known source 1 in 400…hollow bore data
- Post Exposure Prophylaxis…Basic…expanded
- High Risk Negative HIV host….chronic prophylaxis
- Serologic Survey:
  - Baseline…..Hepatitis Profile….RPR….LFTS….HIV Screen
  - Six Weeks…..95%
  - Three months........99%
  - Six months................100%
  - Barrier protection duration
GREY BIRD 333 (GIII)
EBOLA OCTOBER 2014
AIR QUALITY AND CONTAGION

- 10-50% of cabin air circulated mixed with outside air since 1980s
- Recirculated Air filtered 20-30x/hour
- FYI…Negative Pressure Hospital Room SIX changes/hour
- Newer models use HEPA filtration…ie-0.1-0.3 microns
- Airflow now is in “limited banding” on commercial airframes
  - ie-bandung prevents longitudinal airflow
  - Larger commercial airframes are NOT conducive to spread contagion
PRIVATE AIRFRAMES AND CONTAGION

- Outflow valves usually in cockpit (frontward) location
- High bleed air requirements may cost more in performance
- Part 91 –vs- Part 135 or 121 decontamination/cleaning policies
- MRSA and supplemental Oxygen mask rules at Flight Levels
- International variability….exotic locale…..medical transport
- Poor infection control standardization
- Blood and Body Fluid exposures
THE ONLY MYSTERY IN LIFE IS WHY THE KAMIKAZE PILOTS WORE HELMETS.
DECOLONIZATION

- Hibeclens (Chlorhexidine)
- Bactroban/Muciprocin
- Altabax/Retapamulin
- Household items
- Hand hygiene
- IQ
- Pets
CASE REPORTS

- SARS……20 pts from one center isle index case
- Norovirus….potable water sources
- Bioterrorism hypotheticals
- Emerging Concerns…EBOLA…Pertussis….Measles…Polio
- Active TB case……PPD conversion….no smear + sequelae
  - HIV+ with Cavitary Smear + Disease
  - US attorney Smear + MDR-M.Tb
  - Contact Tracing…..PPD….IGRA Screening very effective
“RIP”
EBOLA TIMELINE 1976---2014

Figures as of 27 July 2014

Source: WHO
“BAT MEAT SOUP
NOT AIRBORNE (AT PRESENT)
FACTS –VS-FEAR

- Fear spreads quicker than Infection!!
- No Airborne transmission documented
- Sherriff north of Dallas that was in Duncan’s apt….Neg PCR
- Canine acquisition does occur…..carrier state only…Bats…etc
  - Excaliber..12 y/o rescue euthanized 10/8
- Case Fatality Ratio near 80% even in the best facility
- Biologics and Anti-Virals in rapid R & D phase
- Infectious Pathogens don’t follow politics!!!
  - US response remains in flux and reactive in nature