The Black Plague: *Yersinia pestis*
A plague victim reveals the telltale buboe on his leg. From a 14th century illumination.
Three major pandemics:

1. Plague of Justinian (540-591)
   Africa -> Europe
   ~50% death toll

2. Black Death (1331-1351)
   Asia -> Europe (silk road)
   1/3-1/2 of world population died (40 million)
   Mini ice age

3. Great Plague (1665)
   Asia -> Europe
India, 1996
World Distribution of Plague, 1998

- Regions where plague occurs in animals.
Bacterium: *Yersinia pestis*

Reservoir: Rodents (black rat)

Vector: Flea
Number of plague cases reported to WHO, 1969-1999.
PLAGUE WARNING

Chipmunks, ground squirrels or other wild rodents in this area may be infected with plague. Plague may be transmitted to humans by the bite of an infected flea or by handling an infected animal.

USE THESE PRECAUTIONS:

1. Avoid all contact with chipmunks, squirrels or other wild animals - DO NOT FEED.

2. Do not camp, rest, or sleep near animal burrows. AVOID ANIMAL FLEAS.

3. Keep pets on a leash. Treat your pets with flea powder and flea collar or LEAVE PETS HOME.

4. See a physician if you become ill within a week of your visit. THE DISEASE IS CURABLE WHEN DIAGNOSED EARLY.

5. DO NOT TOUCH sick or dead animals. REPORT THEM TO:

For More Information Contact:
County of San Diego
Department of Health Services
Environmental Health Services
Vector Surveillance and Control Division
9325 Hazard Way
San Diego, CA 92123
(619) 694-2888 or (619) 940-2807
California Ground Squirrel, courtesy of photographer Scott Varley and the North County Times
Photomicrographs of *Yersinia pestis* (arrows) in various organs

Lymph node

Lung

Adrenal gland

Kidney

Salmonella Pathogenicity Island-1

Export apparatus:
SpaO, P, Q, R, S,
InvA, C, OrgB

Needle complex:
PrgH, K
InvG, InvH?
InvJ (regulates needle length)

Translocon:
SspB, C, D

Regulators:
InvF, HiiA,D
SirC, SprB

Effectors:
SspA, SptP, AvrA

Chaperones:
SicA, InvB, SicP

Unclassified:
OrgA, C, InvE, I,
IacP, IagB,
Inhibition of phagocytosis by YopE, YopH, and YopT

1984: Salmonella used for biological terrorism

- *Salmonella* in salad bar infects 750 people
- Plan: infect enough of the local population to allow them to vote themselves into office!

The Bhagwan Shri Rajneesh
Golden rules of food safety:

1. Keep hot food hot and cold food cold.
2. Refrigerate leftovers within two hours.
3. Completely cook eggs, pork, poultry, seafood.
4. Wash your produce and hands.
5. Segregate raw meat from other food.
6. Use pasteurized dairy products and juice.
7. Don’t cook while battling a food borne illness!

Happy Thanksgiving!!