

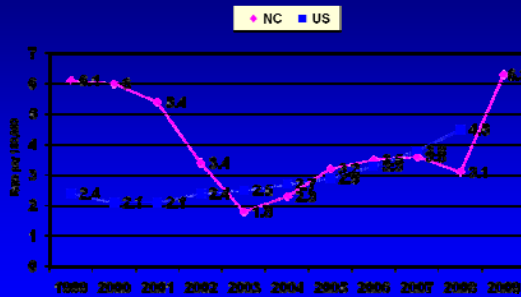


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Syphilis: Etiology and Pathogenesis

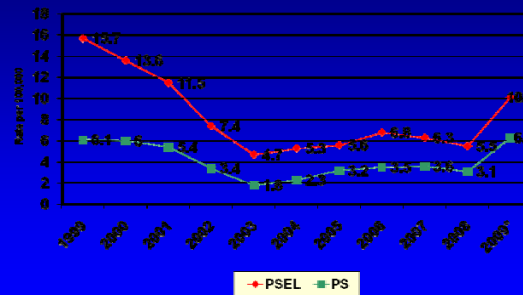
- 1st step of invasion is attachment to epithelial, fibroblastlike and endothelial cells
- Corkscrew motility via periplasmic flagella (flagella not exposed on the surface) transverses junctions between endothelial cells
- Induces production of matrix metalloproteinase-1 (MMP-1) in dermal cells which breaks down collagen
- Enters lymphatics and bloodstream, disseminates following nutrient gradients (chemotaxis)

PS Syphilis Rates 1999-2008

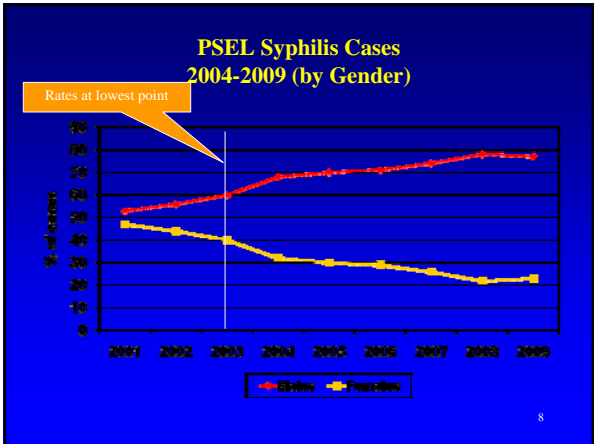
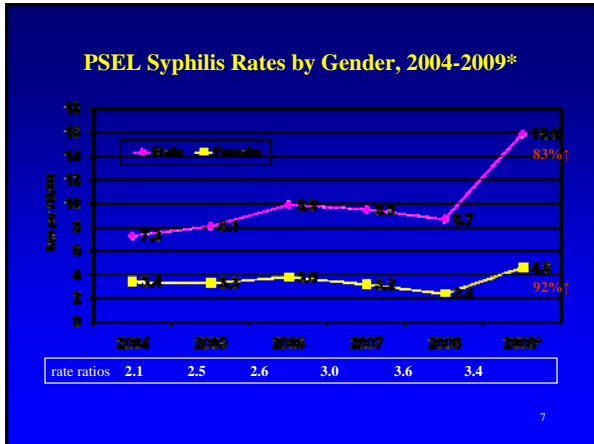
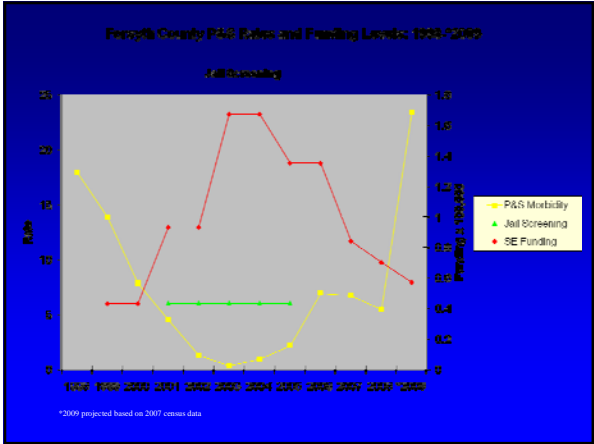
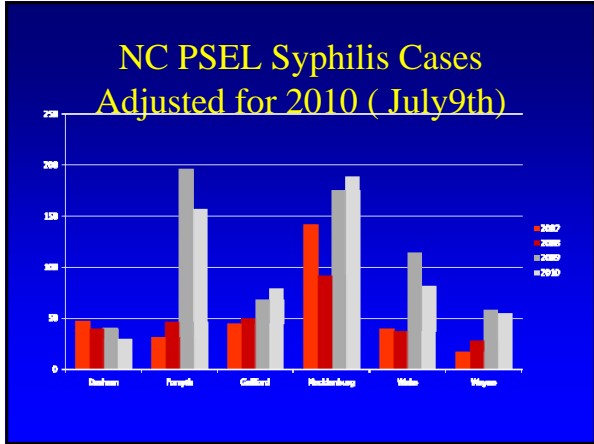


Source: CDC published surveillance reports / NC surveillance data 3

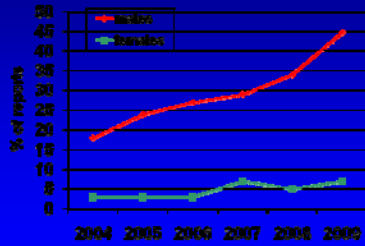
NC Syphilis Rates 1999-2009*



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Comorbidity (early syphilis with HIV)



9

HIV(+) Patients in ED, June 2008-May 2009

Characteristics of Positives

	N	%
New Positive		
Yes	6	33.3
No	12	66.7
Gender		
Male	13	72.2
Female	5	27.8
Race		
White	1	5.9
Black	4	23.5
American Indian	0	0.0
Hispanic	7	41.2
Asian	4	23.5
Other	1	5.9
Missing	0	0.0
In Care at Test Date*		
Yes	2	20.0
No	10	80.0
In Care Post-ED Test		
Yes	18	100.0
No	0	0.0
Febrile at Triage*		
Yes	4	22.2
No	14	77.8

* The average age = 41 years

* CD4 count (average): 231

- Acute HIV Infection Diagnosis: 445

- New Diagnoses: 207

- Previous Diagnoses: 221

* Viral load (average): 977,724

- Acute HIV Infection Diagnosis: >10,000,000

- New Diagnoses: 309,744

- Previous Diagnoses: 409,487

* Among previously known positives
* Febrile defined as $\geq 38^{\circ}\text{C}$

HIV & STD Testing, June 2008-May 2009

	Patients Tested	Also Tested for HIV*, % (n)
All STDs	2699	9.56% (258)
Syphilis	1117	18.35% (205)
Gonorrhea	1864	6.65% (124)
Chlamydia	1866	6.59% (123)
HSV	41	21.95% (9)

* Based 667 HIV tests performed, excluding organ transplant patients

What to do

- All syphilis cases must have an HIV test
- All HIV infected individuals must have syphilis testing and continue to be tested every 3-6 months
- Treat all suspected cases
- Treat all contacts who are within a 90 day window from early syphilis cases
- Work associates

What to do

- Notify local EDs of Syphilis epidemic and assure they have BZN PCN
- Look for opportunities to integrate HIV and Syphilis testing
- Treat, treat, treat