

# Differentiating Sexual Risk Behaviors as Young Men Transition to Adulthood



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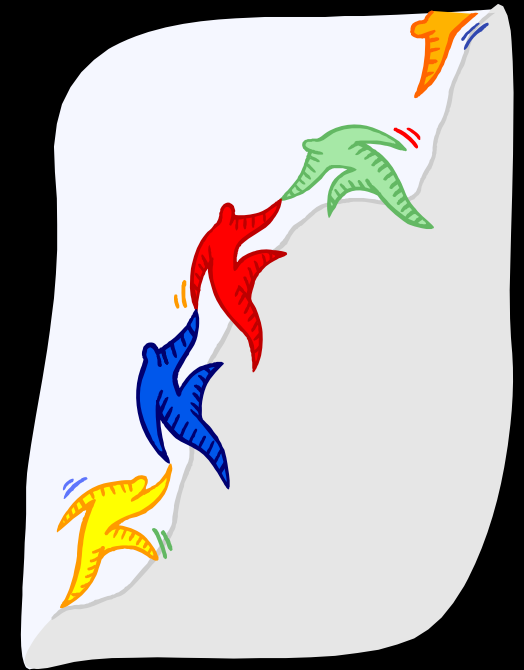
# Collaborators – The 'Team'

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# What is the problem?

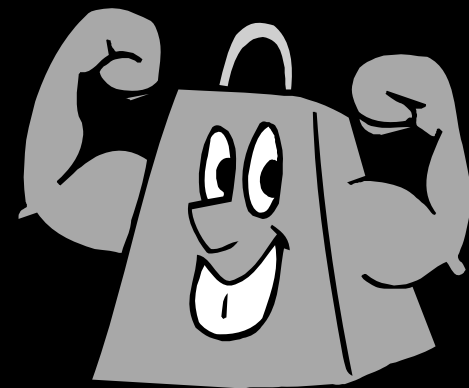


- **STIs**
  - 2000: youth 15-24
    - ½ of ~19 million new STD cases in US
    - 55% of 2.8 million new cases of Chlamydia
  - 2005: men
    - 73% HIV/AIDS cases among youth & adults
- **Adolescence: sexual experimentation.**
  - Sexual behaviors - risk for infection
  - Determinants of infection probability
    - Initiation of sex,
    - Partner selection,
    - Contraception—including condoms
  - Peak Risk
- **Aging into adulthood**
  - 'calming' effect



# Why Should We Care?

- **STI Transmission**
- **Understanding heterogeneous patterns**
  - Overtime
  - Similarities and differences
- **Implications for HIV/ STI interventions**
  - Design
  - Evaluation



# Study Contributions

- Examine behaviors simultaneously
- Longitudinal analyses
- Focus on youth (15-26)
- Focus on men

# National Survey of Adolescent Males (NSAM)

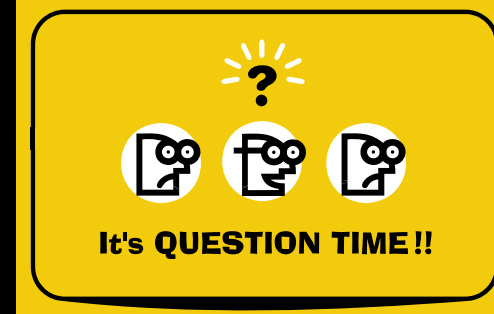
- Nationally Representative Sample
  - Unmarried males in 1988; N=1880
  - Oversample African American males
  - Survey years (ages):
    - 1988 (15-19); 1990/1 (16-22); 1995 (ages 21-27)
- Sample size by participation:
  - All R are included in the analyses
    - 1988 only: N=117
    - 1988 & 1991: N=386
    - 1988 & 1995: N= 87
    - all 3 waves: N=1290



# Research Questions

1. "To what extent can young men be classified into meaningful groupings based on how they select partners and use condoms?"
2. "What patterns emerge with respect to men's adoption of safer sexual practices versus risky sexual practices over time?"
3. "How do these risk groups and transitions among groups over time relate to STDs?"

# Measures



- **Predictor**

- In the last year:

1. # female sexual partners (0+)
2. # "stranger" female sexual partners (0-6)
3. # "risky" sexual partners (0-6)
4. # months w/ "concurrent partners" (0-12)
5. % unprotected sexual acts (0-100)

- **Outcome**

- Ever diagnosed with an STD (all 3 waves)
  - Diagnosed within the last year (1995)
  - Urine specimen for Chlamydia (1995)
    - 72% sample in 1995
    - MI - negligible non-response bias

<b>Sexual Risk and STD Variables by Wave - Weighted</b>	<b>1988 Wave 1 (age 15-19)</b>	<b>1991 Wave 2 (age 17-22)</b>	<b>1995 Wave 3 (age 21-26)</b>
<b>Share Who Had No Heterosexual Sex (%)</b>	<b>612 (39.6%)</b>	<b>222 (16.2%)</b>	<b>67 (5.9%)</b>
<b>Sexual Risk Measures Among Sexually Experienced Men:</b>	657	1230	1243
1.Share with one or more sexual partners known less than one day at first intercourse (%)	1.0	<b>1.8</b>	0.6
2. Female Sexual Partners in Last Year (mean number)	1.1	<b>2.4</b>	2.0
3. Share with One or More Risky Partners in the Last year (%)	1.7	<b>2.5</b>	1.3
4. Share with 2 or More Concurrent Partners for at Least One Month in Last Year (%)	13.0	<b>20.2</b>	13.0
5. Unprotected Sex Acts (mean %)	24.3	48.9	<b>59.0</b>
<b>Measures of Sexually Transmitted Diseases:</b>	657	1230	1243
1. Ever Diagnosed with an STD by Wave ( %)	1.7	6.6	<b>11.5</b>
2. Diagnosed with an STD in the Last Year (%)	--	--	1.3
3. Tested Positive for Chlamydia (%)	--	--	3.6
<b>Number of Cases Used in Cluster Analysis</b>	1269	1452	1310

# Sexual Risk Variables by Risk Group across All Waves – Unweighted Descriptive Statistics

Sexual Risk Variables within the Last Year	Risk Groups					Total
	No Heterosexual Sex	Low Risk - High Protection	Low Risk - Low Protection	Risky Partners - High Protection	Many Partners – Some Protection	
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Partners Knew Less than One Day (#)	0 (0)	0.0 (0.2)	0.1 (0.3)	0.1 (0.3)	0.4 (0.8)	0.1 (0.4)
Female Sexual Partners (#)	0 (0)	1.4 (1.2)	1.7 (1.3)	1.9 (1.7)	7.4 (7.0)	2.1 (5.4)
Risky Partners (#)	0 (0.1)	0 (0)	0.3 (0.4)	1.1 (0.3)	0.6 (0.6)	0.4 (0.5)
Months with 2+ Partners (#)	0 (0)	0.3 (0.8)	0.4 (1.0)	0.4 (0.9)	7.5 (3.6)	1.1 (2.7)
Unprotected Sex Acts (%)	0 (0)	14.7 (19.0)	93.2 (11.0)	17.0 (25.3)	61.3 (33.9)	42.0 (42.0)
% total observations in cluster	18.3	24.5	28.8	18.6	9.8	

NOTE: N= 4,927 observations across the three waves of data

# Risk Group Distribution by Wave – Weighted

<b>Risk Group</b>	<b>1988 Wave 1 (age 15-19) N=1875</b>	<b>1991 Wave 2 (age 17-22) N=1675</b>	<b>1995 Wave 3 (age 21-26) N=1377</b>
	%	%	%
<b>No Heterosexual Sex</b>	<b>39.6</b>	<b>16.2</b>	<b>5.9</b>
<b>Low Risk - High Protection</b>	<b>18.8</b>	<b>20.9</b>	<b>37.0</b>
<b>Low Risk - Low Protection</b>	<b>17.3</b>	<b>30.7</b>	<b>48.3</b>
<b>Risky Partners – High Protection</b>	<b>19.8</b>	<b>22.0</b>	<b>2.2</b>
<b>Many Partners - Some Protection</b>	<b>4.5</b>	<b>10.2</b>	<b>6.7</b>

NOTE: With respect to risk group sizes, we want to acknowledge the relatively small group sizes for “no heterosexual experience” in 1995 (N=67) and “risky partners – high protection” in 1995 (N=45). We are mindful of these relatively small group sizes when interpreting the results.

# Answer to RQ 1: Classification

- **Cluster Analysis**
  - k-means; z-scores; maintain def. across time
  - 4-clusters + a priori group
- **Five homogeneous & distinct groups**
  - 2 dimensions of risk
    - Partner characteristics
    - Condom use
- **Low-Risk groups (3)**
- **High-Risk groups (2)**
- **11.5% ever STD by 1995**

	<b>Percent in Group in 1991 - Wave 2 (age 17-22)</b>					<b>Total in 1988</b>
<b>Risk Group Membership in 1988 - Wave 1 (age 15-19)</b>	No Heterosexual Sex	Low Risk - High Protection	Low Risk - Low Protection	Risky Partners - High P	Many Partners – Some P	
<b>No Heterosexual Sex</b>	39.0	20.6	17.4	21.5	1.5	40.3
<b>Low Risk - High Protection</b>	0.3	37.4	28.4	21.3	12.7	18.5
<b>Low Risk - Low Protection</b>	1.0	7.8	61.0	16.8	13.5	16.9
<b>Risky Partners - High Protection</b>	1.6	20.0	35.0	29.2	14.1	19.8
<b>Many Partners – Some Protection</b>	0.0	10.5	27.9	14.1	47.5	4.6
<b>Total in 1991</b>	16.3	21.0	30.8	21.8	10.2	
	<b>Percent in Group in 1995 - Wave 3 (age 21-26)</b>					<b>Total in 1991</b>
<b>Risk Group Membership in 1991 - Wave 2 (age 17-22)</b>	No Heterosexual Sex	Low Risk - High Protection	Low Risk - Low Protection	Risky Partners - High P	Many Partners – Some P	
<b>No Heterosexual Sex</b>	32.7	42.9	23.7	0.4	0.2	17.8
<b>Low Risk - High Protection</b>	0.0	44.9	50.5	0.4	4.2	21.3
<b>Low Risk - Low Protection</b>	0.0	21.4	67.2	2.9	8.5	30.0
<b>Risky Partners - High Protection</b>	0.2	49.8	37.6	4.1	8.3	22.4
<b>Many Partners – Some Protection</b>	0.0	25.7	55.3	2.5	16.5	8.5
<b>Total in 1995</b>	5.9	37.0	48.3	2.2	6.7	

# Answer to RQ2: Safe vs. Risky Practices Over Time

- **Expected patterns emerged**
  - Decrease in virgins (40 → 6%)
  - Risk Peak on 4 items - Late adolescence
  - Settling Down - Young adulthood
- **Specific Trends**
  - 51% remain low-risk
  - ~40% in a high-risk group transition to a lower risk group by the third wave
  - 9% of men either maintain steady high-risk or show increasing risk behaviors

# STDs & Clusters – Weighted Percents

	1995 Wave 3 (age 21-26)	
	STD in the Last Year N=37	Positive Chlamydia Test N=68
<b>Risk Group</b>	%	%
<b>No Heterosexual Sex</b>	<b>0.0</b>	<b>0.0</b>
<b>Low Risk - High Protection</b>	<b>1.6<sup>b</sup></b>	<b>3.4<sup>b</sup></b>
<b>Low Risk - Low Protection</b>	<b>0.5<sup>b</sup></b>	<b>3.1<sup>b</sup></b>
<b>Risky Partners – High Protection</b>	<b>3.7</b>	<b>2.7</b>
<b>Many Partners - Some Protection</b>	<b>6.0<sup>a</sup></b>	<b>8.2<sup>a</sup></b>
<b>Total</b>	<b>1.3</b>	<b>3.6</b>

# STD Reports by Status of Ever being in a High Risk Group – Weighted Percents

Status of Ever Being in One or More High Risk Groups	Full Data Subsample N=1290	1995 - Wave 3 STD Reports (age 21-26)		
		STD by 1995 N=229	STD in the Last Year N=36	Positive Chlamydia Test N=65
	%	%	%	%
Always in Low Risk	<b>51.6</b>	<b>6.4<sup>b</sup></b>	<b>0.8<sup>b</sup></b>	<b>4.6<sup>b</sup></b>
Ever in “Risky Partners – High Protection” High Risk Group Only	<b>10.3</b>	<b>11.5<sup>c</sup></b>	<b>0.8<sup>b</sup></b>	<b>1.3<sup>b</sup></b>
Ever in “Many Partners – Some Protection” High Risk Group Only	<b>38.6</b>	<b>32.1<sup>a</sup></b>	<b>3.8<sup>a</sup></b>	<b>3.1</b>
In both High Risk Groups	<b>5.6</b>	<b>20.9<sup>a</sup></b>	<b>4.5<sup>a</sup></b>	<b>10.1<sup>a</sup></b>
Total	--	11.5	1.3	3.6

# Risk-Group Transitions - Prevalence & STD by 1995

Transitions	STD by 1995	Group Size		
1988-1991-1995	Wt %	Wt %		N
253	83.8	1.0		17
455	52.3	0.3		11
445	46.2	0.4		17
255	42.7	0.4		13
353	38.8	1.5		23
323	38.1	0.8		10
232	27.8	1.1		21
335	25.8	0.5		11
555	23.7	0.6		13
252	21.8	0.5		13
332	20.9	1.1		21
453	20.1	0.7		12
233	17.1	3.7		35
243	16.8	1.7		22
452	15.3	0.6		12
423	15.0	1.9		30
142	14.3	5.1		55
433	13.9	4.8		57
443	13.2	2.7		41

Transitions	STD by 1995	Group Size		
1988-1991-1995	Wt %	Wt %		N
135	13.2	0.7		10
333	11.5	6.0		78
533	10.0	0.7		13
123	9.3	3.3		30
442	8.7	3.2		46
132	8.1	1.5		19
222	7.3	2.6		35
553	7.1	1.0		12
143	6.8	3.1		44
432	6.7	2.6		34
242	5.5	1.6		22
422	4.9	2.2		30
112	4.4	7.4		73
223	2.3	4.7		36
342	2.2	1.2		16
122	1.0	4.1		43
111	0.0	5.8		62
133	0.0	5.0		44
113	0.0	4.0		41

# Answer to RQ3: Risk Groups, Transitions, & STDs

- For each group, monotonic increase in ever have an STD.
- STDs high among high risk
  - Many partners—some protection:
    - 2x recent STD diagnoses & 3x positive urine tests compared to men in the other high risk group
  - High dosage response
    - STDs in the last year & urine diagnosis highest among men who were members of both risk groups over time

# Take-Home Messages

- **Good News**

- 50% remained low-risk
- 8 out of 10 of the largest trajectories have only low-risk group membership across the three waves, and men in these trajectories constitute approximately 41 percent of the sample
- A total of 17 percent of the sample delayed heterosexual sex for at least two waves.

- **Bad News**

- 40% were members of the "many partners - some protection" group at some point between 1988 and 1995
- 9 of the top 12 transitions with high levels of STD experience were members of at least one high-risk group at some point in the survey

# Take-Home Messages

- **Cautions**

- Low risk does NOT = no-risk
- Compounding & 'chronic' risk-taking - high STDs
- Not all high-risk is created equal
  - Two high-risk groups were distinct
  - "Many partners - some protection" for at least one wave report markedly higher past and current STD diagnoses.

- **Future Programs**

- Effective strategies to reduce HIV and STD risk in young men must consider *several dimensions* of sexual behavior, esp. with men shifting groups
- Condom use messages are not enough (e.g., risky partners)

**Questions / Discussion**

# STDs & Clusters – Weighted Percents

Figure 1: STD by Wave and Risk Group

