Probability Sampling in a Bathhouse Setting: Purpose, Practice and Practicality
presented by
The Venues Team

The Nth exiting patron
The Venues Team

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Bill Woods
... and all the LMOE I and II teams
Sex Venues

- clubs
- cruising areas
engage in risky sex

sex venue
users

engage in risky sex

MSM Population
 clubs

“bathers”
25%

“multi-venue users”
36%

cruising areas

“cruisers”
39%
Prevalence of Risky Practices

<table>
<thead>
<tr>
<th></th>
<th>Cruisers (n=515)</th>
<th>Bathers (n=326)</th>
<th>Multi-Venue Users (n=481)</th>
<th>Sig.</th>
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<tbody>
<tr>
<td><strong>Sexual Practices</strong></td>
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<tr>
<td>UAI with non-primary partner</td>
<td>20.0</td>
<td>33.9</td>
<td>50.4</td>
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<td>UAI in public setting</td>
<td>4.3</td>
<td>10.1</td>
<td>21.6</td>
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<td>Group Sex</td>
<td>25.3</td>
<td>51.6</td>
<td>69.9</td>
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<tr>
<td>UAI in group setting</td>
<td>2.3</td>
<td>9.1</td>
<td>14.5</td>
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</table>

| **Number of Partners** |                  |                 |                          |      |
| 26+ partners in last year† | 8.1             | 14.8            | 33.2                     | *    |
| 21+ one-night stands in last year† | 5.7             | 12.3            | 30.7                     | *    |

*Significant difference (p<.0167) between all groups
**Significant difference (p<.0167) between all groups except bathers & multi-venue users

Multi-venue users are the most risky

Urban Men’s Health Study (Binson et al, AJPH, 2001, 91:1482-1486)
But UMHS data can’t tell us where risk happens, so…

What goes on in a club?
... to find out

Designed an EXIT survey

Used a probability sample design
Probability Sample Design

Primary goal is REPRESENTATIVENESS

- Advantage - completely takes any choice out of the researcher’s hand.

- Confident can generalize findings to the population of interest.
Major Principle of Probability Sampling

- Every member of population of interest must have known and nonzero probability of being selected.
- Key word is “known.”
Probability sampling in a bathhouse (LMOE I & II)

- 2-stage time design
  - Randomly select time shifts
  - Randomly select patrons within shifts

- Bathhouse open – 24/7
  - Constructed 3-hour shifts
  - Yields 8 shifts/day & 56 shifts/week
Probability sampling in a bathhouse

- **Shifts randomly selected**
  - based on estimates of flow of patrons exiting each shift

- **Flow of patrons – exit counts**
  - start with relatively inexact counts
  - adjust with actual on-going exit counts
Probability sampling in a bathhouse

**Number of shifts/week**
- # of interviews want each week
- # of staff can manage

**Patrons selected randomly in each shift**

**Each shift assigned unique**
- random start,
- sampling interval
Practice

The Nth exiting patron
Is this the Nth exit?

Monitor exits

(upon each exit)

No

Notate hour/minute

Yes

Attempt recruitment

(at end of recruitment)

Was recruitment successful?

No

Notate hour/minute, age, ethnicity

Yes

Administer questionnaire, notate hour/minute, age, ethnicity

Challenge #1: Recruiting and counting
Challenge #2:
A constant flow of data between the sampling statistician and counter

Sampling statistician provides weekly schedule with the number of shifts per week including, shift date, club, start time, sampling interval or “N” and random start or “R”.

Counter provides hour/minute of every exit.
What goes into making it work?

- recruiting/counting
- support and communication
- hiring
- preparedness
- recruitment space
Practicality

Role-plays:

• Basic counting and recruiting.
• “Why not me?”
• “Not me!”
• Too many men.
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<thead>
<tr>
<th>Number</th>
<th>Initials</th>
<th>E</th>
<th>Age</th>
<th>H</th>
<th>NH</th>
<th>A</th>
<th>B</th>
<th>W</th>
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Pass:

Initials: _____  _____  _____
E:    1    2    4
5    6    8    7
Age: _____  _____
H  NH   A  B  W  NA  HPI
W:   1    2    3     4     5     6     7
Q:    1     2      3     5     6     9
W  G   O   Y
Pass:
Putting it all together: Connections Study

Use probability sampling (and really great recruiters) to get men leaving clubs to complete an ACASI exit survey which immediately (and unobtrusively) identifies the high-risk men and then recruit those men into qualitative interviews off-site.
Sounds simple, right?

<table>
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<tr>
<th></th>
<th>LMOE I &amp; II</th>
<th>Connections</th>
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<tbody>
<tr>
<td>Data collection period</td>
<td>5 weeks each</td>
<td>26 weeks (6 months)</td>
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<tr>
<td>Shift length</td>
<td>3 hours</td>
<td>2 hours</td>
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<tr>
<td>Sampling frequency</td>
<td>15-20 shifts/week</td>
<td>4-6 shifts/week</td>
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<td>Number of shifts / total</td>
<td>~100</td>
<td>140</td>
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<tr>
<td>Shift logistics</td>
<td>1-4 shifts/day everyday</td>
<td>Up to 2 shifts at same time at different sites</td>
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<tr>
<td>Number of surveys</td>
<td>400</td>
<td>440</td>
</tr>
<tr>
<td>Recruiting staff / total</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Recruiting staff per shift</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Clubs</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Times</td>
<td>24 hours, 7 days a week</td>
<td>4 p.m. – 6 a.m. weekdays, 24 hours at weekends</td>
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<tr>
<td>Data collection method</td>
<td>Interviewer-administered survey on paper in a private room</td>
<td>Audio Computer Assisted Self-Interview in the lobby</td>
</tr>
<tr>
<td>Unique issue</td>
<td>Conversational interviewing</td>
<td>Recruiting for qualitative interview</td>
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</tbody>
</table>
Further reading:

Differential HIV Risk in Bathhouses and Public Cruising Areas
Diane Binson; William J Woods; Lance Pollack; Jay Paul; Ron Stall; Joseph A C...American Journal of Public Health; Sep 2001; 91, 9; ABI/INFORM Global pg. 1482

Probability Sample Estimates of Bathhouse Sexual Risk Behavior
William J. Woods, PhD,* Diane Binson, PhD,* Johnny Blair, BA,† Lei Han, PhD,* Freya Spielberg, MD,‡ and Lance M. Pollack, PhD*
Acquir Immune Defic Syndr  Volume 45, Number 2, June 1, 2007