

RDS_Info computer package

Khanh Vu

PhD student in Epidemiology, University of Texas, School of Public Health at Houston

Former Research Manager, Population Service International (PSI) Vietnam

Issues with RDS fieldwork

Issues with quality of sample:

- Need to avoid respondent duplication
- Need to ensure the diversity of seeds
- Whether the equilibrium is reached?
- Geographical: over-recruitment of respondents nearby interview sites
- Under-recruitment of certain subgroups: young SW less likely to participate
- Recruitment chains stop too soon
- Weak connection between areas

Issues with fieldwork management and planning: passive recruitment

- The exponential increase of respondents by time
- When to stop giving coupons?
- Fake coupons: duplicated coupon, non-existing coupon
- Complicated incentive payment: respondent come back to get incentive after their recruitments successful

RDS_Info software

- Ms Access-based program
- Developed in 2008
- Was used for the following RDS surveys:
 - Survey among Sex Workers, PSI Vietnam, 2008, 2010, and 2011
 - Survey among IDU, PSI Vietnam, 2010
 - Survey among MSM, PSI Vietnam, 2011
 - Survey among MSM, PSI Cambodia, 2010
 - Survey among IDU, PSI Russia, 2011
 - Survey among SW, Khanh Hoa Provincial AIDS Center, Vietnam, 2010

Key functions of RDS_Info

- Checking respondent duplication
- Monitoring the quality of sample:
 - Diversity of seeds
 - Length of recruitment chains
 - Distribution of sample in terms of geographical area, age, and other key characteristics
 - Creating data files for RDSAT and NetDraw: equilibrium analysis for key characteristics
- Providing analysis of fieldwork progress:
 - Coupon delivery and recruitment progress
 - Cross-area recruitment
- Managing incentive payment

What fieldwork problems can RDS_Info tell us?

- Fake coupons
- Respondent duplication
- Quality issues of sample:
 - Lack of diversity of seeds
 - Short recruitment chains
 - Unbalanced distribution of sample in terms of geographical area, age, and other key characteristics
 - Equilibriums are not reached for key characteristics
- Fieldwork progress:
 - Too many or too few coupons are delivered
 - Recruitment is too fast or too slow
 - Limited cross-area recruitment
- Incentive payment:
 - Respondent claim incentive for unsuccessful recruitment.
- Other problems: one person rob coupons from respondents and recruit many respondents (e.g. pimps recruit many sex workers)

What decisions can we make with RDS_Info outputs?

- Not interview respondents with fake coupons
- Not interview duplicated respondent
- Quality of sample:
 - Recruit appropriate new seeds to ensure diversity
 - Recruit new seeds for short recruitment chains, for under-recruited subgroups
 - Continue recruitment to reach equilibrium
 - Open new interview sites or move interview sites to the areas where few respondents are recruited. Or recruit new seeds from those areas.
 - Analyze data (with RDSAT) as a single network of multiple small networks based on the analysis of cross-area recruitment
- Recruitment progress:
 - Speed up or slow down recruitment
 - Stop or continue to deliver coupons (when the fieldwork is close to the end)
- Not pay incentive for unsuccessful recruitment

Who use RDS_Info?

Who	Purposes
Fieldwork teams	<ul style="list-style-type: none">• Screening respondents• Monitoring sample quality, identifying issues and fixing• Fieldwork planning and management
Research coordinators, managers	<ul style="list-style-type: none">• Tracking progress of fieldwork• Identifying recruitment issues and provide feedbacks

RDS_Info

Respondent and Coupon Management

Respondent Driven Sampling

MGP 11.10.7

- User guide
- Protect the database
- Setup for the study
- Go to MAIN FUNCTIONS
- Close program



MAIN FUNCTIONS

* processed by respondent group

Province: Respondent group: Group Initial:

Data Entry, Review, and Edit

- Enter Screening data and Check respondent duplication
- Find, Review, and Edit data
- Check records deleted in the middle of the recruitment chain
- ALL data in this database - Summary, Edit, and Delete

Check recruitment and diversity of the SEEDS

- All the Seeds (recruited and non-recruited) *
- Recruited Seeds only *

View the CHAIN OF RECRUITMENT

- WHOLE chain of recruitment * Recruitment summary of Seeds *
- SHORT recruitment branches * Across-area recruitment *
- Whole chain of coupon delivery *
- Check a specific coupon

View coupon distribution and Interview status

- Summary by group * Summary ALL groups
- Detailed list *

PAYMENT for peer recruitment

- Check interview and payment status and enter data
- Summary of payment for recruitment

TRANSFER data between RDS_Info databases

- Export data to the small data file
- Inport data from small data file
- Inport data directly from another RDS_Info database

Make data files for RDSAT and NetDraw

- RDSAT and NetDraw *
(this may take a long time)

Respondent Duplication Checking

- Simple and acceptable to hard-to-reach groups
- Ensure anonymity of respondents
- Unique Identifier Code (UIC) created from:
 - First letters of respondent or parent names
 - First letters of home province
 - Last digits of birth years
- Biomarkers
 - Left lower arm length
 - Left wrist circumference
- Notes of outstanding features: tattoos, scars, etc.
- There are options to use UIC or biomarkers, or both, or none
- UIC and biomarkers can be defined differently by users

Setup for checking duplication, diversifying seed, and monitoring sample distribution

Summary of Setup information

FOR CHECKING RESPONDENT DUPLICATION

Use of UIC: Yes
 Number of biomarkers used: 2

Biomarkers	Measurement error (mm)
biomarker 1 Left lower arm length	± 3
biomarker 2 Left wrist circumference	± 2
biomarker 3	\pm
biomarker 4	\pm

RESPONDENT GROUPS

Group	Initial	Check duplication together
MSM	1	6

FOR DIVERSIFYING SEEDS AND MONITORING SAMPLE DISTRIBUTION

Group: MSM Group_Ini: 1

Features	Answering options
Feature 1 Sexual preference	Like men only Prefer men to women Like both Prefer women to men Like women only
Feature 2 Marital status	Married Not married
Feature 3 Income	Up to 200 USD/month 201 - 500 USD/month > 500 USD/month

SAMPLE SIZE

Ha Noi	MSM	400
Hồ Chí Minh	MSM	450

Data entry

Data Entry for Respondent Duplication Check and Coupon Management Use these buttons to create/edit the answer options

Save **Delete current record** **Add new record** **Find, Edit records** **View incomplete records** **Setup** **Close**

Coupon serial number 1Seed9

Date of interview (MM/dd/yyyy) 04-Oct-11

Province Ha Noi Group: MSM Group Initial 1

District or area in the province (the respondent is living or working) Cau Gay

Network Size: 5

Unique Identifier Code (UIC) hahupt175

Left lower arm length (mm) 255

Left wrist circumference (mm) 160

Outstanding features of the respondent (tattoo, scar, mole, etc. (position, description)) cross-shaped tattoo on left lower arm

Check the respondent duplication Duplicated

Does the respondent meet criteria? 1 Is the respondent interviewed? 1 Is the respondent given coupons? 1

Serial numbers of the coupons given to this respondent to recruit others

1268
1269
1270

Notes

For tracking seed diversity and monitoring sample distribution

Age 36

Network size 5

Marital status Married

Frequency of visiting MSM venues Sometimes

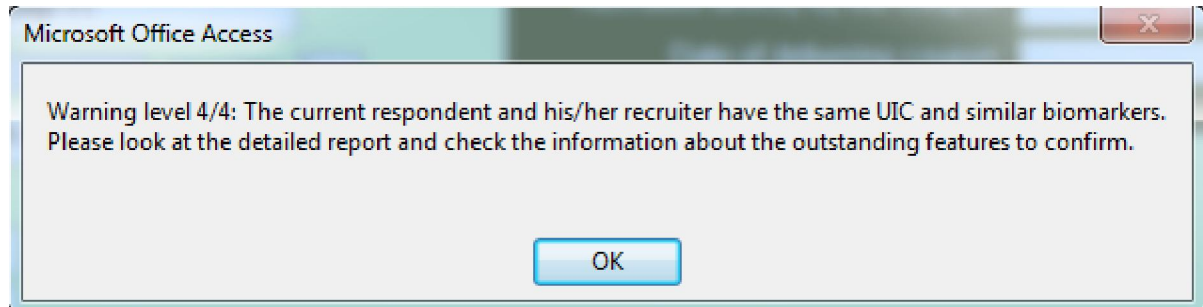
Sold sex in the past 1 month No

Accesses to HIV programs in the past 3 months Yes

For duplication checking

For tracking recruitment chain

Duplication warning and report



Check the respondent duplication The detailed report

Province: **Ha Noi**

THE CURRENT RESPONDENT:

Coupon serial No.	UIC	Left lower arm length (mm)	Left wrist circumference (mm)	Outstanding features
1020	tuvatb189	282	161	scar on forehead

THE RECRUITER:

Coupon serial No.	UIC	Left lower arm length (mm)	Left wrist circumference (mm)	Outstanding features
1009	tuvatb189	280	160	scar 1x2 cm on forehead

ALL THE REPOSNDENTS WITH THE SAME UIC AS THE CURRENT RESPONDENT:

Coupon serial No.	UIC	Left lower arm length (mm)	Left wrist circumference (mm)	Outstanding features
1009	tuvatb189	280	160	scar 1x2 cm on forehead

ALL THE REPOSNDENTS WITH THE SIMILAR BIOMARKERS TO THE CURRENT RESPONDENT:

Seed diversity report

The characteristics of seeds recruited

<i>Seed</i>	<i>Date of recruitment</i>	<i>Area (living or working)</i>	<i>Age</i>	<i>Marital status</i>	<i>Education</i>	<i>Working venue (Street vs. EE-based)</i>	<i>Duration of injecting drug use</i>	<i>Notes</i>
Seed 1	8/17/2009	Ba Dinh district	25	Married	High school	Street-based	1-10 years	recruited by PS peer educators
Seed 2	8/18/2009	Hoan Kiem district	18	Single	Secondary	EE-based	Less than 1 year	recruited by peer educators of the Lifegap project
Seed 4	8/18/2009	Tay Ho district	30	Separate/Divorced/ Widowed	High school	Street-based	1-10 years	recruited at a hot spot

Recruitment chain summary

Summary of the whole recruitment chain

Province: **Hai_Phong**

Group: **Sex Workers**

Seed	Date Recruited	Network size	Area	No. of successful respondents	Date of latest coupon given out	Date of latest respondent came	No. of waves	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	Wave 9
1Seed1	3/14/2011	20	NgoQuye n	52	3/26/2011	3/26/2011	7	3	9	10	13	10	6	1		
1Seed2	3/14/2011	6	LeChan	0	3/14/2011	3/14/2011	0									
1Seed3	3/14/2011	20	HaiAn	27	3/23/2011	3/23/2011	5	3	6	8	6	4				
1Seed6	3/15/2011	35	LeChan	95	3/23/2011	3/24/2011	7	3	6	13	21	25	19	8		
1Seed8	3/16/2011	30	AnDuong	44	3/21/2011	3/26/2011	8	2	5	6	5	7	6	6	7	
1Seed12	3/25/2011	30	NgoQuye n	15	3/26/2011	3/26/2011	6	3	3	3	3	2	1			

Most of seeds grow well with 5 waves or more → good sample

Recruitment chain

The whole Chain of Recruitment

(Only including people who came for interview)

Province: Ha Noi

Group: MSM

Colored: Came but was not interviewed (e.g not eligible)

Seed	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	Wave 9	Wave 10	Wave 11	Wave 12
1Seed1	1001	1050										
	1002	1035										
	1003	1046										
1Seed2	1004											
	1005											
	1006											
	1016	1075										
		1076										
		1077	1093	1221								
				1222								
				1094								
				1095								
			1185									
1017												
1Seed3	1007	1036										
	1008	1027	1072	1105								
				1106	1161	1188						

Geographical and Age distribution report

Number of successful interviews by Area (including seeds)

Area	Number of Interview	%
NgoQuyen	21	23%
AnDuong	18	20%
HaiAn	18	20%
HongBang	16	17%
LeChan	15	16%
ThuyNguyen	4	4%
KienAn	0	0%
Total	92	100%

Balanced distributions
in terms of
geographical and age

Number of successful respondents by Age (including seeds)

Age	No. of respondents	%
<= 25 years old:	25	27%
26 - 30 years old:	26	28%
31 - 35 years old:	18	20%
36 - 40 years old:	23	25%
> 40 years old:	0	0%

Report of distribution of key characteristics of the Sample

Characteristics of the sample			
Sexual preference	%	Valid %	N
Like men only	29%	33%	7
Prefer men to women	14%	17%	
Like both	14%	17%	
Prefer women to men	14%	17%	
Like women only	14%	17%	
Missing	14%		
Total	100%	100%	

Marital status	%	Valid %	N
Married	43%	60%	7
Not married	29%	40%	
Missing	29%		
Total	100%	100%	

Income	%	Valid %	N
Up to 200 USD/month	43%	50%	7
201 - 500 USD/month	14%	17%	
> 500 USD/month	29%	33%	

Balanced distributions
in terms of key
characteristics

Cross-area recruitment report

List_of_Seed	Area, where the Seed is from	AnDuong district	DuongKinh district	HaiAn district	HongBang district	Kien Thuy district
1Seed1	NgoQuyen district	14	3	12	5	
1Seed3	HaiAn district	1		10	6	
1Seed6	LeChan district	6		16	4	
1Seed8	AnDuong district	12	1	2	25	2
1Seed12	NgoQuyen district			6		

There are links between respondents from different districts → respondents are connected in a single network

Exported Excel data file for RDSAT and NetDraw

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Province	Network_ Size	Own Coupon	Coupon 1	Coupon 2	Coupon 3	Area	Age	Feature_1	Feature_2	Feature_3	Feature_4	Feature_5
2	MSM								Sexual preference	Marital status	Income	Visting MSM venues	Injecting drug use
3	An Giang	30	11	111	112	113	LongXuyen		Prefer men to women	Married	201 - 500 USD/month	Sometimes	No
4	An Giang		111										
5	An Giang	14	112	1121	1122	1123	ChauDoc		Like men only		> 500 USD/month		Yes
6	An Giang	12	113				ChauDoc		Like both	Not married	Up to 200 USD/month	Never	
7	An Giang	32	12	121	122	123	LongXuyen		Prefer women to men	Not married	> 500 USD/month	Sometimes	No
8	An Giang	21	13				LongXuyen		Like women only	Married	Up to 200 USD/month	Regularly	Yes
9	An Giang	20	1Seed1	11	12	13	ChauDoc		Like men only	Married	Up to 200 USD/month	Never	Yes

- This Excel file has format ready to use with RDSAT to analyze equilibrium of the sample

Recruitment progress summary

Summary of the coupon delivery and interview status

Province: **Hai_Phong**

Group: **Sex Worker who are IDU**

Incomplete data

Number of respondents whose information need to be completed: 0
(Interview status and Coupons received)

Progress

Number of seeds used: 6

Number of coupons delivered: 220

Number of respondents interviewed (including seeds): **92** Sample size: **152** Need to recruit more: **60**

% Interview / Coupon delivered: 42%

No. of people came but was not interviewed (including seeds)*: 10 No. of duplicated respondents: 1
(Only precise if all these cases are entered the database) 9% 1%

No. of coupons given out but not yet come for interview: **124**
(Only precise if all *cases are entered the database)

were delivered within 1 day: 2
was delivered 2 days ago: 15
was delivered 3 days ago: 15
was delivered ≥ 4 days ago: 92

Even 124 coupons not yet come, most of them were given ≥ 4 days ago \rightarrow likely not come \rightarrow need to give more coupons as need to recruit 92 more respondents

Recruitment progress

Number of successful interviews by Day (including seeds)

Date (mm/dd/yy)	Number of Interview
15-Mar-11	5
16-Mar-11	1
17-Mar-11	2
18-Mar-11	2
19-Mar-11	4
20-Mar-11	10
21-Mar-11	10
22-Mar-11	13
23-Mar-11	7
24-Mar-11	9
25-Mar-11	7
26-Mar-11	15
27-Mar-11	7
Total	92

Few respondents (SW-IDU) come at the latest days → need to speed up fieldwork by new seeds and new interview sites

Incentive payment checking

Check the payment for recruitment

When a respondent come to receive his/her incentive for peer recruitment

- 1) Ask him/her to submit the coupons (part 2 , the part for recruitment incentive)
- 2) Enter the serial number below to check if the recruitment was successful and paid
- 3) Give incentive if the recruitment was successful and not yet paid

Province:

Enter the coupon serial number:
(The coupon submitted)

This is an unsuccessful recruitment
→ do not pay incentive

Payment status for the recruitment

NOTE: If this coupon has not yet interviewed or already paid for the recruitment, 2 corresponding fields will be highlighted in RED as warning.

Coupon serial number:

Meet the criteria:

Date of interview/screening:

Recruited by the coupon:

Payment status: - Paid

(If not yet paid, pay him/her and enter 1 here)

Blank = Not paid

Transfer data between RDS_Info databases

TRANSFER data between RDS_Info databases

Export data to the small data file

Import data from small data file

Import data directly from another RDS_Info database

- Update data for multiple databases at different interview sites → prevent respondents from going to different interview sites to get multiple interviews.
- Update data for central database for study coordinators and managers.
- Act as a daily report of fieldwork.

References

- <http://www.respondentdrivensampling.org/>
of Cornell University.
- Behavioral Surveillance, Introduction to Respondent Driven Sampling, participant manual, CDC 2008 (Lisa Johnston).