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# HIV Incidence Surveillance in China

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# HIV Incidence Surveillance in China

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- ▶ Methods: BED testing
  
- ▶ HIV Sentinel Surveillance——To estimate the incidence rate  
Since 2011, BED testing has been required to perform among HIV new diagnosed from national sentinel sites.
  
- ▶ HIV/AIDS Case-Reporting System——To estimate the number of recent infection
  - ▶ 2011: HIV new diagnosed in 2<sup>nd</sup> Quarter
  - ▶ 2012: HIV new diagnosed between July 2011 and June 2012
  
- ▶ ▶ 2013: HIV new diagnosed between July 2012 and June 2013

# HIV Sentinel Surveillance System

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- ▶ HIV Sentinel Surveillance System is to **consecutively** collect information related to HIV epidemic situation in **constant** periods and sites among **key populations**. This system can provide the trend of HIV epidemic and guide the evaluation of the effectiveness of HIV/AIDS prevention and control strategy .

## Purposes

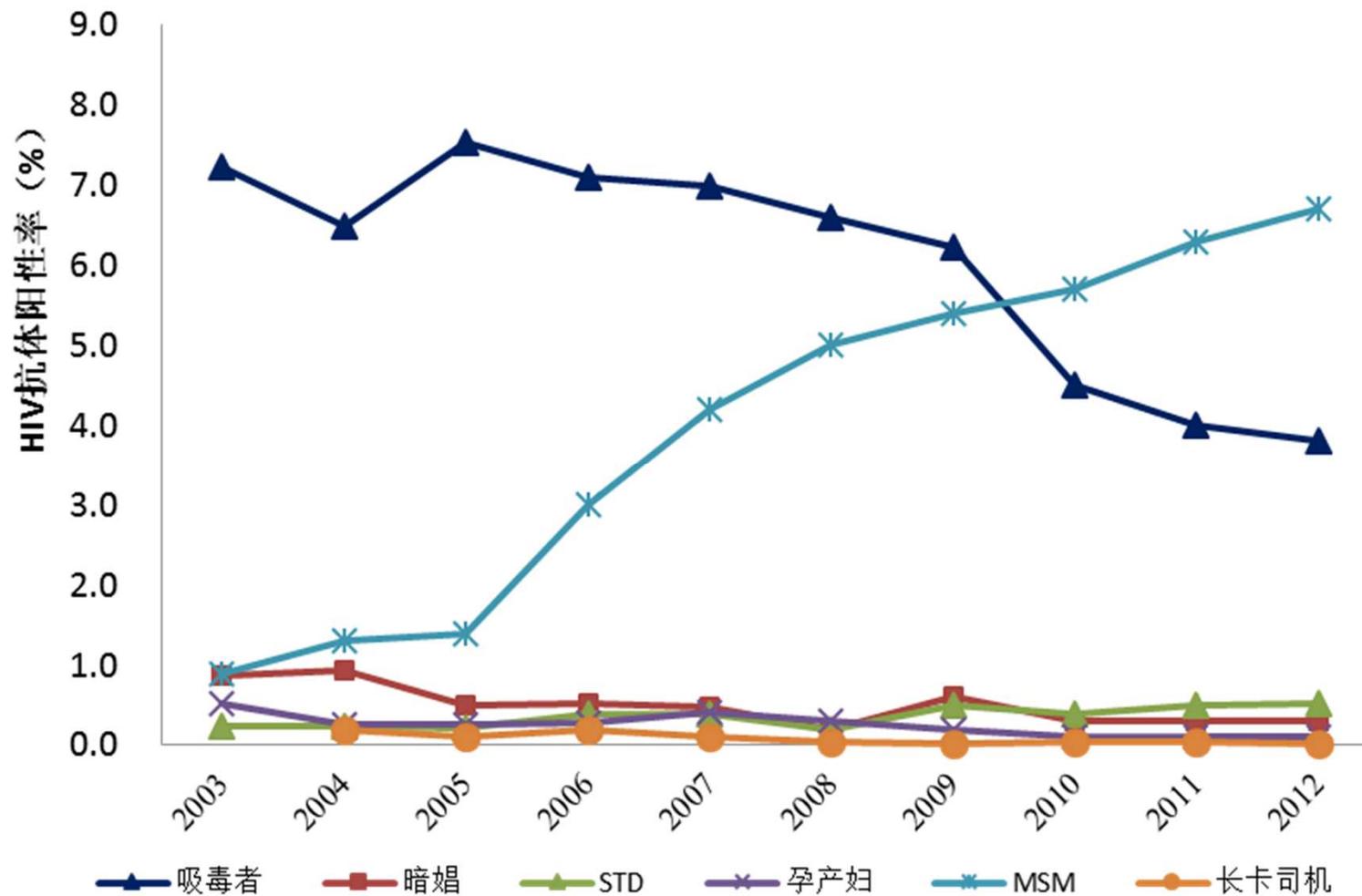
- ▶ To estimate HIV prevalence among different populations;
  - ▶ To describe epidemic pattern for different areas and populations;
  - ▶ To compare HIV prevalence of different areas among populations;
  - ▶ To evaluate risk factors related to epidemic patterns for different areas and populations.
- 



# Distribution of National Sentinel Sites for HIV/HCV, 2013

	Population	No. of Sites	Coverage (Provinces)
Incidence testing	8 populations		
	DU	301	30 ( Except Tibet )
	MSM	107	30 ( Except Tibet )
	FSW	520	31
	Male STD	369	31
	Truck driver	58	22
	Male immigrant	87	31
	ANC	376	31
	Youth	66	31
	<b>Subtotal</b>	<b>1884</b>	
	5 populations		
Blood donation	31	31	
Health examination	20	16	
Hospital invasive treatment	13	13	
Kidney dialysis	12	12	
Clinic of Family planning	11	11	
<b>Subtotal</b>	<b>87</b>		
<b>Total</b>	<b>1971</b>		

# HIV prevalence among different populations from HIV sentinel surveillance sites, 2003-2012



# Equation recommended by WHO

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$$I_r = \frac{R - \varepsilon P}{(1 - \varepsilon)\omega N}$$

where the survey counts ( $N$ ,  $P$ ,  $R$ ) are specified as follows:

$N$  is the number of HIV-negative people in the survey

$P$  is the number of HIV-positive people in the survey, and

$R$  is the number of people classified as RITA positive,

and the calibration parameters are specified as follows:

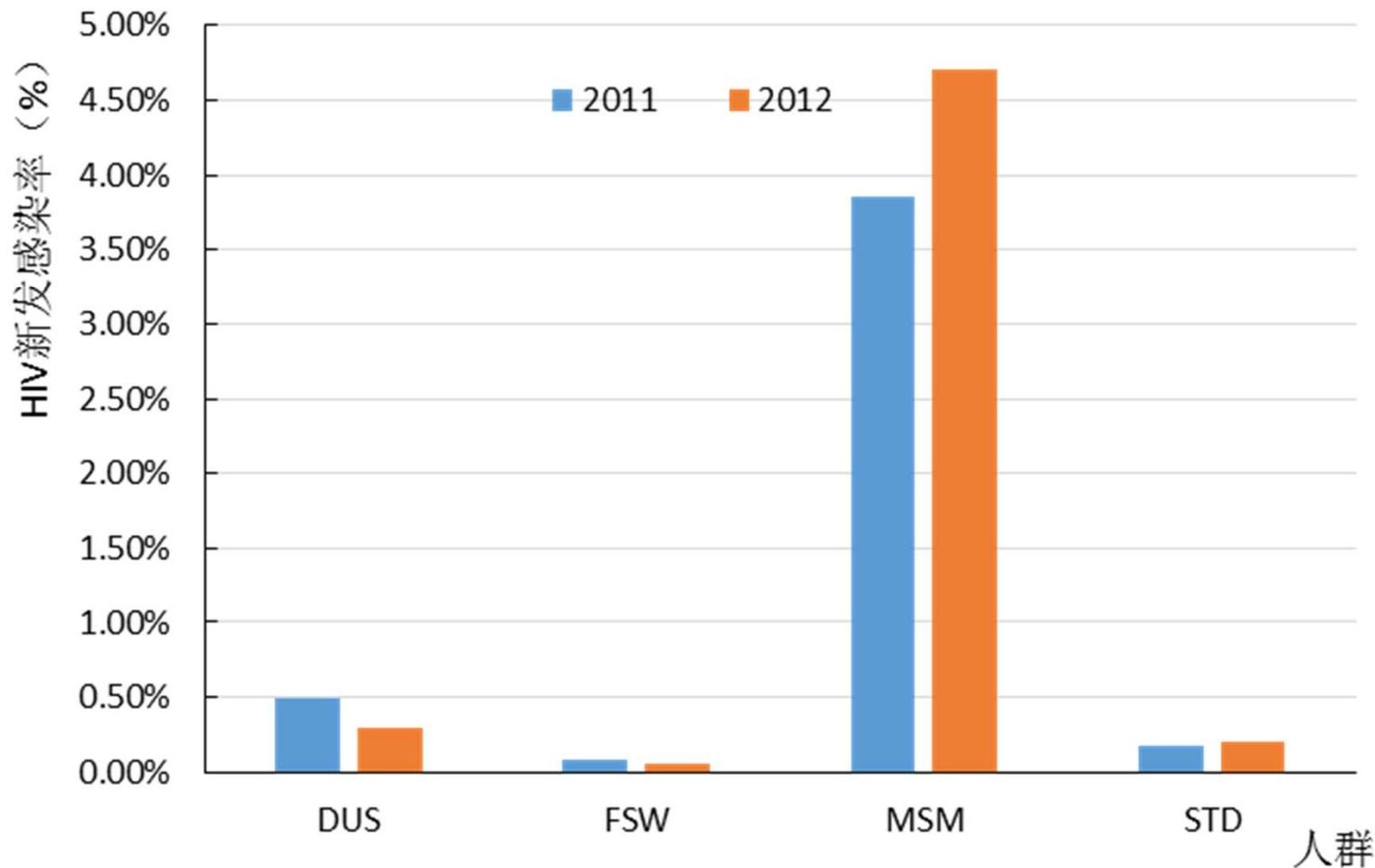
$\omega$  is the mean RITA duration specified in units of years, and

$\varepsilon$  is the **FRR** of the RITA.

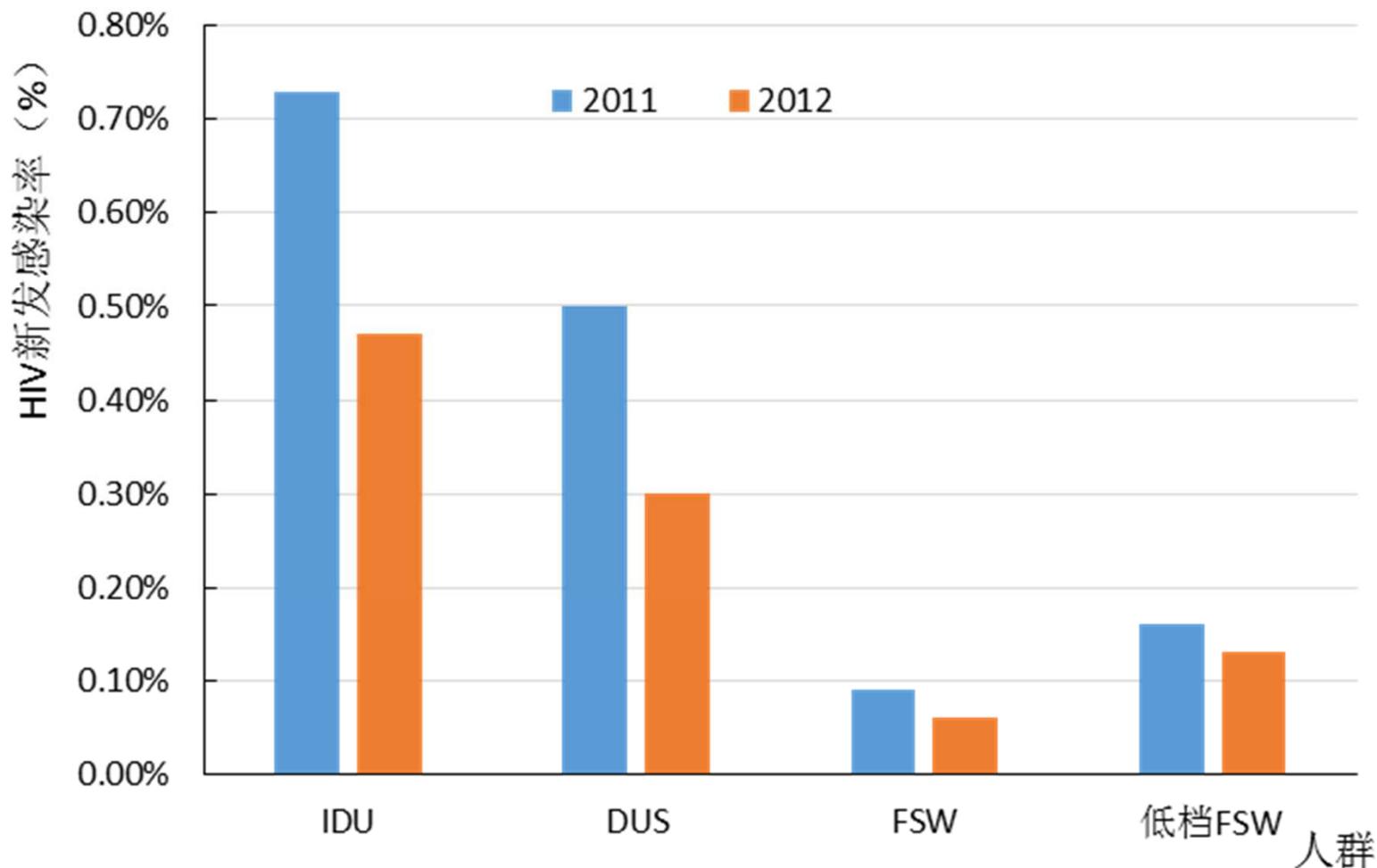
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# HIV incidence among different populations from HIV sentinel surveillance, 2011-2012



# Sentinel Surveillance System in 2011-2012



# Estimated number of HIV recent infection

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- ▶ Current approach:
    - ▶ Used Workbook software after calibrating estimation of death
    - ▶ Modeling: SPECTRUM、AEM
    - ▶ Laboratory & Epidemiology: BED
    - ▶ Others
  
  - ▶ Final result is based on triangulation methods
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# HIV/AIDS Case-Reporting System—— web-based real time report

**中国疾病预防控制中心信息系统**  
CHINA INFORMATION SYSTEM FOR DISEASES CONTROL AND PREVENTION

用户权限管理系统  
疾病监测信息报告管理系统  
突发公共卫生事件报告管理信息系统  
健康危害因素监测信息系统  
疾病预防控制基本信息系统  
鼠疫防治管理信息系统  
结核病管理信息系统  
**艾滋病综合防治信息系统**  
平台配置工具  
传染病自动预警信息系统  
专病/单病监测信息报告管理系统  
中国流感/禽流感监测信息系统  
救灾防病信息报告系统  
死因登记报告信息系统  
儿童免疫接种信息管理系统  
淮河死因调查系统  
出生登记信息系统  
症状监测直报系统  
高温中暑病例报告系统

选项: 疾病监测信息报告管理系统

地区编码:  用户编码:  密码:

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# Report for the BED testing among HIV new diagnosed patients

! 首页 | 传染病报告信息管理系统 | 艾滋病综合防治信息系统

--其他业务系统--

**HIV/AIDS病例报**

- 添加
- 浏览
- 病例报告实时统计
- 病例报告定时统计
- 资料分析定时统计
- 新发现病例定时统计
- 历史卡片下载
- HIV新发感染检测**

**HIV检测份数表**

- 录入
- 实时统计

报告地区: |北京市| 上一级 下一级 报告单位: ----请选择----

卡片ID: [ ] 姓名: [ ]

身份证号: [ ] 录入时间: 2012-01-01 至 2012-12-31

是否录入ODN值: 是 否 全部

审核状态: 已终审卡 已删除卡 全部 新发感染检测: 应检测 不检测 全部

**HIV新发感染检测** [查询] [返回]

序号	卡片ID	姓名	身份证	报告地区	报告单位	录入时间	WB检测单位	送样实验室样本编号	目前审核状态	操作
第0页 共0条 共0页										

每页 20 条 首页 上页 下页 末页

导出Excel

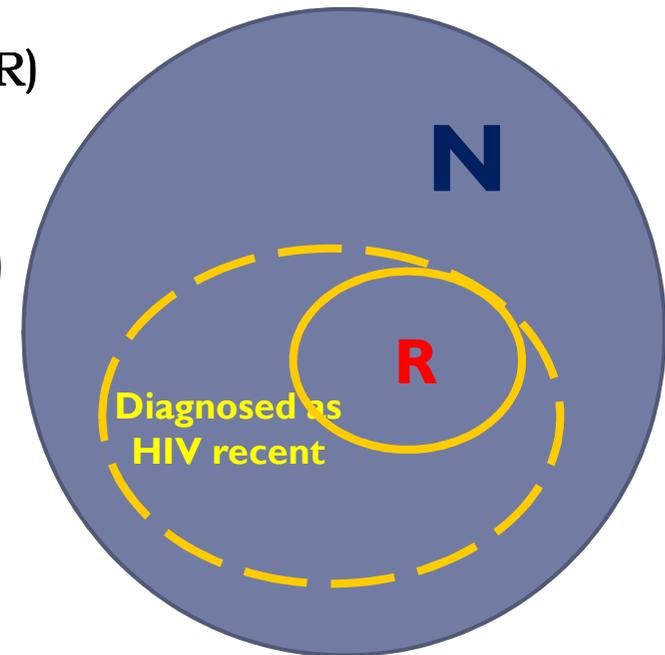
Module of data input: (Built-in 2013)

HIV Prevention and Control System → HIV/AIDS Case-Reporting System → HIV Incidence Testing System

# Estimate of HIV recent infections—— Principles

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- ▶ Target population – recent infections in one year ( $N$ )
- ▶ Sample size – diagnosed as recent infections ( $R$ )
- ▶ Proportion of diagnosed as recent infection ( $P$ )
- ▶  $R = N * P$  or  $N = R / P$
- ▶ Classified as repeat or new testers to estimate  $P$



# Data needed for estimation of recent infections

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## ▶ Testing history

Added into follow up form in 2013

Whether performed a HIV testing before this time: Yes No (Next question)

Date of the last HIV negative: \_\_\_\_\_year\_\_\_\_\_month

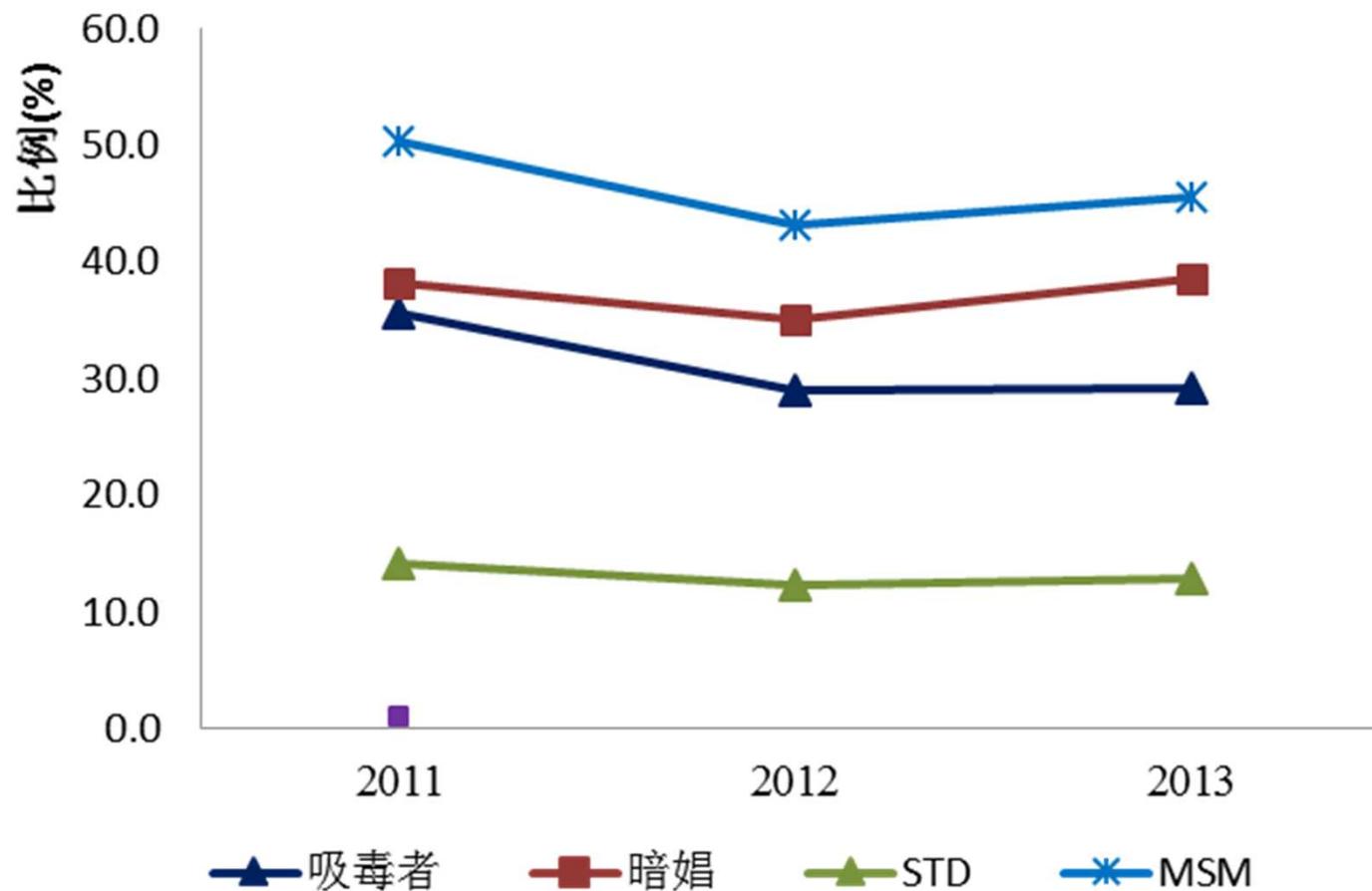
Date of the first HIV positive: \_\_\_\_\_year\_\_\_\_\_month

How many times have you accepted HIV testing in 24 months before the first HIV positive : \_\_\_\_\_

**Only  
once  
per  
patient**



# The proportion of known testing results among the populations from sentinel surveillance last year



# The completion of BED testing among new diagnoses

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- ▶ 2011.7-2012.6
  - ▶ Totally, 21 provinces have reported BED results.  
**72.6% of completion** among 21 provinces.
  - ▶ Unreported: **11 provinces**
- ▶ 2012. 7-2013.6 (As of Oct 31)
  - ▶ 100% for 8 provinces, >80% for 25 provinces
  - ▶ Have not start input: 4 provinces



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Thank  
You

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