Finding the Undiagnosed in South Carolina

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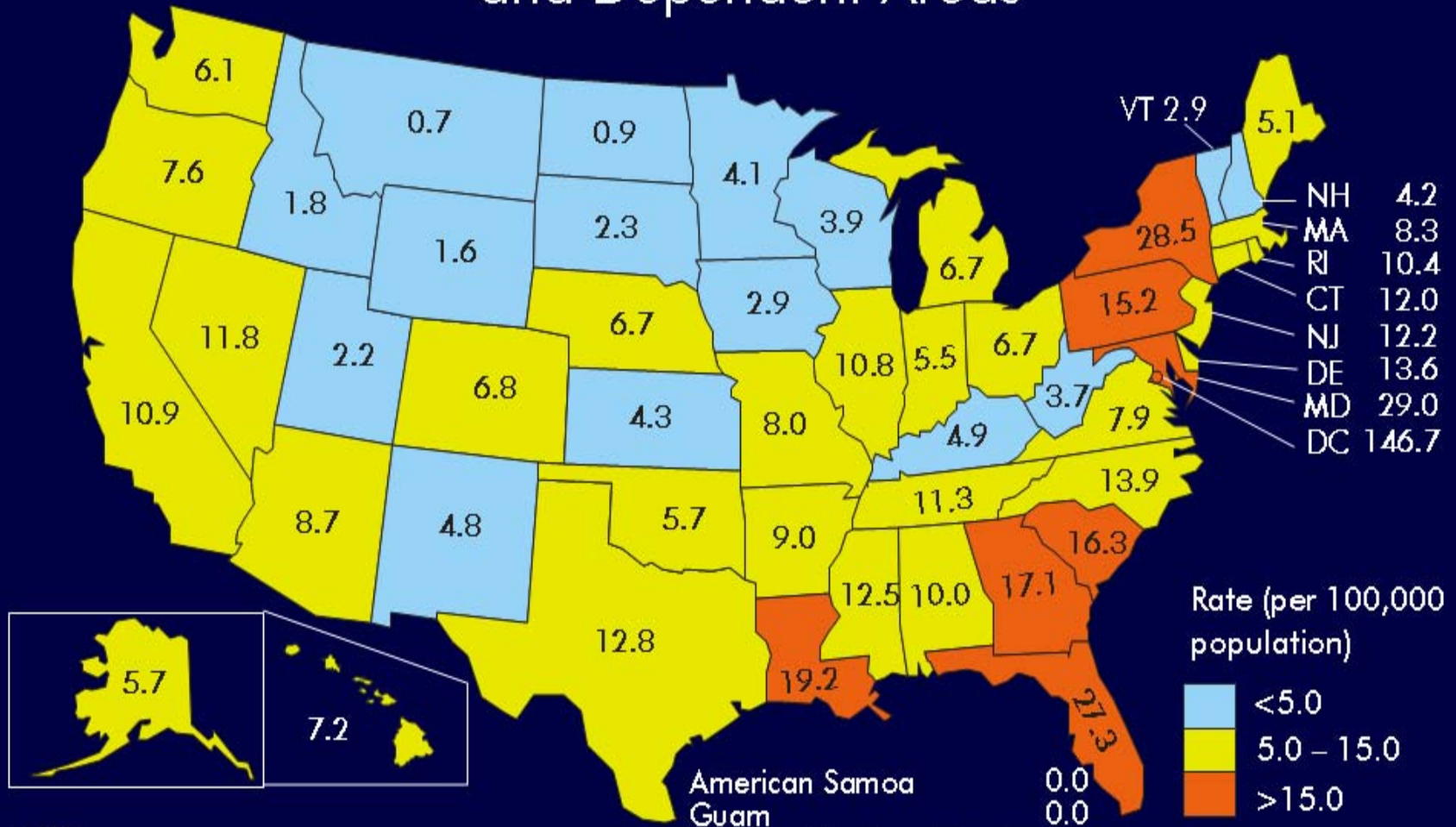
AIDS Rates, Reported in 2006—United States and Dependent Areas



Where To Find The Undiagnosed?

- Department of Mental Health
- Drug abuse and treatment centers
- Partner Notification Services
- Missed Opportunities
  - Hospitals
  - Department of Corrections

Partner Notification Services

- Process whereby Disease Intervention Specialists (DIS) can inform named sexual contacts of HIV exposure risk and encourage HIV testing
- Activity covered by State Statutes 44-29-10, 61-20 and 61-21.
- Success depends on interview skills and full disclosure by index cases

Disposition of Named Sexual Contacts to an HIV-infected Individual

	2004	2005	2006	2007
Number of contacts named	1257	1741	2036	1898
Partners notified	1041 (82.8)	1379 (79.2)	1709 (83.9)	1620 (85.4)
Previously positive	339 (27)	429 (24.6)	498 (24.5)	558 (29.4)
Newly positive	92 (7.3)	99 (5.7)	125 (6.1)	91 (4.8)

Contribution of Partner Notification Services to Overall SC HIV-positive Individuals Newly Diagnosed Each Year

	2004	2005	2006	2007
Contacts named as new positives	92	99	125	91
Overall new HIV diagnoses in SC residents per year	847	757	774	781
% contribution of partner notification services	10.9%	13.1%	16.1%	11.7%

Take Home Messages on Partner Notification Services

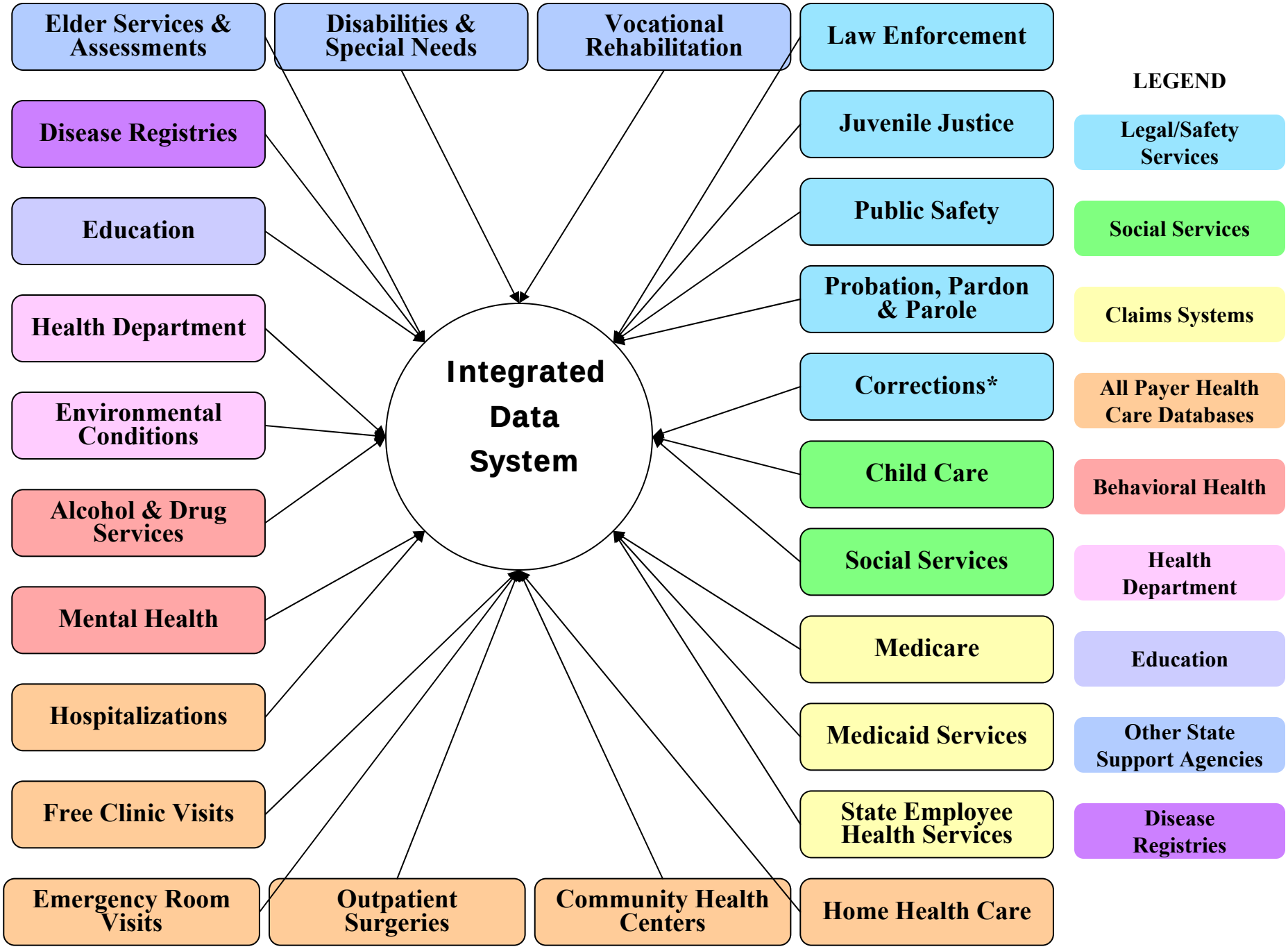
- Allows efficient targeting of resources towards locating individuals likely to be HIV-infected
- Will need to be expanded as HIV testing initiatives are increased
- Support for alternative venues for HIV testing
- Will this be the same if home-based testing is approved?
- The internet may be a novel way to perform partner notification

HIV/AIDS Surveillance in South Carolina

- Confidential name-based reporting since 1981 for AIDS and 1986 for HIV
- Legally required reporting of all CD4 and VL by state licensed laboratories since 2004
- Data quality exceeds CDC minimum standards for timeliness and completeness
- Excludes identifiers: names, addresses and social security numbers, facility and physician identifiers when used for linkage

SC Office of Research and Statistics

- A division of SC Budget and Control Board
- Various state government agencies are mandated by law to provide data to ORS
- Contractual relationship with other agencies to house data eg. Free medical clinics
- Application to a single Data Oversight Committee


Elder Services & Assessments
Disabilities & Special Needs
Vocational Rehabilitation
Law Enforcement
Disease Registries
Juvenile Justice
Education
Public Safety
Health Department
Probation, Pardon & Parole
Environmental Conditions
Corrections*
Integrated Data System
Alcohol & Drug Services
Child Care
Mental Health
Social Services
Hospitalizations
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Free Clinic Visits
Medicaid Services
Emergency Room Visits
State Employee Health Services
Outpatient Surgeries
Community Health Centers
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LEGEND
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Education
Other State Support Agencies
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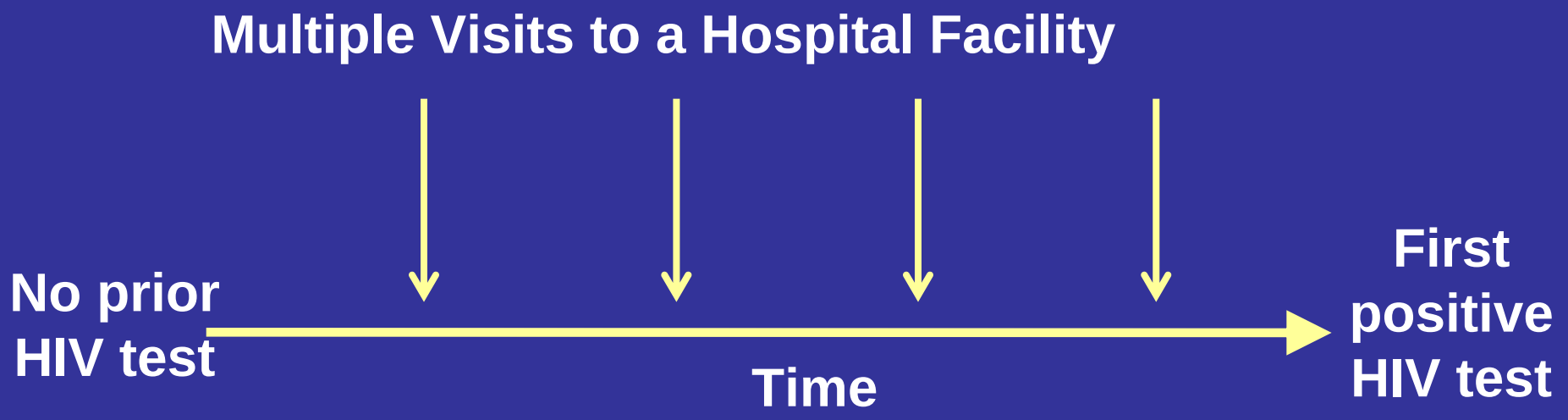
Potential Missed Opportunities for Early HIV Testing



HARS-Hospital Data Linkage

- Patients diagnosed from 1/01 – 2/06
- 60 Emergency Departments
- 62 Inpatient Facilities
- 63 Ambulatory/Outpatient Surgery Facilities
- Examined ICD codes from all health-care visits

Summary

4,345 people diagnosed with HIV in SC (1/01 – 2/06)

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3,157 (72.7%) people visited healthcare facilities prior to HIV testing

↓

20,271 separate visits recorded

↓

1,316 (41.7%) diagnosed with AIDS within one year of HIV testing

Setting Where Missed Opportunities Occurred

- Emergency Room – 79.3%
- Inpatient – 12.3%
- Outpatient – 6.7%
- Free Medical Clinics – 1.7%

Individual Visits Made To Healthcare Facilities Prior To HIV Testing

Number of Visits	Number of Individuals	% of Individuals
1 Visit	618	20.5%
2 – 5 Visits	1,310	43.4%
6 – 10 Visits	613	20.3%
> 10 Visits	480	15.9%

Total visits ranged from 1 to 133 per patient
Median # visits = 4 / individual

Comparison of Categorically Grouped Diagnostic Codes

	Females		Males	
	No. Visits	(%) Total Visits	No. Visits	(%) Total Visits
Diagnoses Likely to Prompt an HIV Test	2,069	21.6	1,861	19.2
STDs and related codes	405	4.2	126	1.3
Acute Retroviral Syndrome symptoms	1,393	14.6	1,342	13.8
Diseases possibly related to HIV	420	4.4	486	5.0
Diseases probably related to HIV	57	0.6	63	0.7
IDU and related codes	160	1.7	149	1.5
Diagnoses Not Likely to Prompt an HIV Test	7,503	78.4	7,857	80.8
Total Visits	9,572	(100)	9,718	(100)

Summary/Discussion

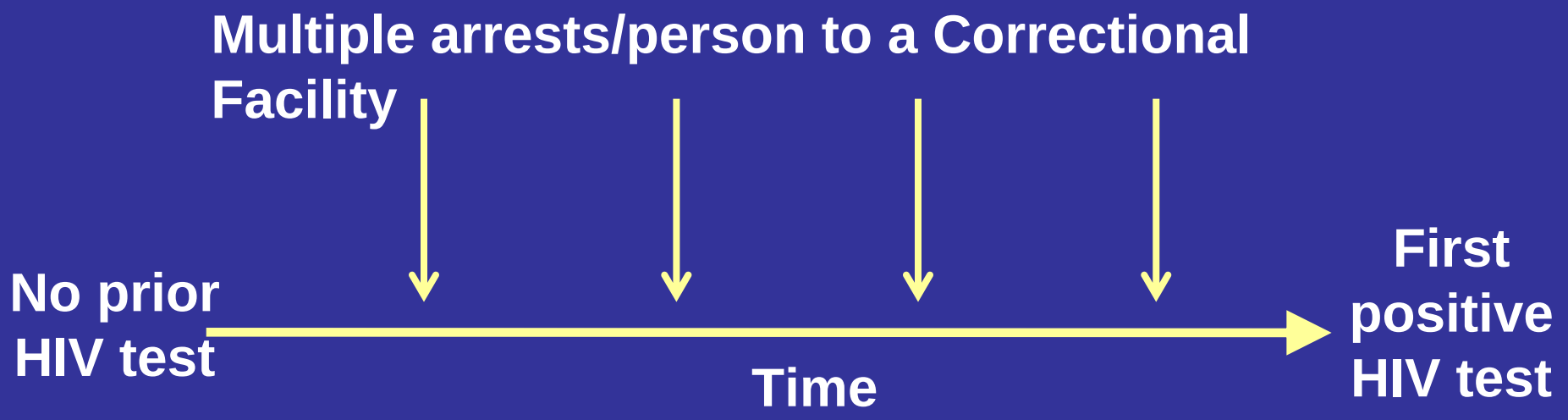
- Documented several missed opportunities for early HIV testing (73.4%)
- Many patients if they were offered and accepted testing would have been found to be HIV-infected
- The most common ICD codes were not suggestive of HIV infection. Traditional ways of selecting patients for HIV testing would miss the majority of individuals.

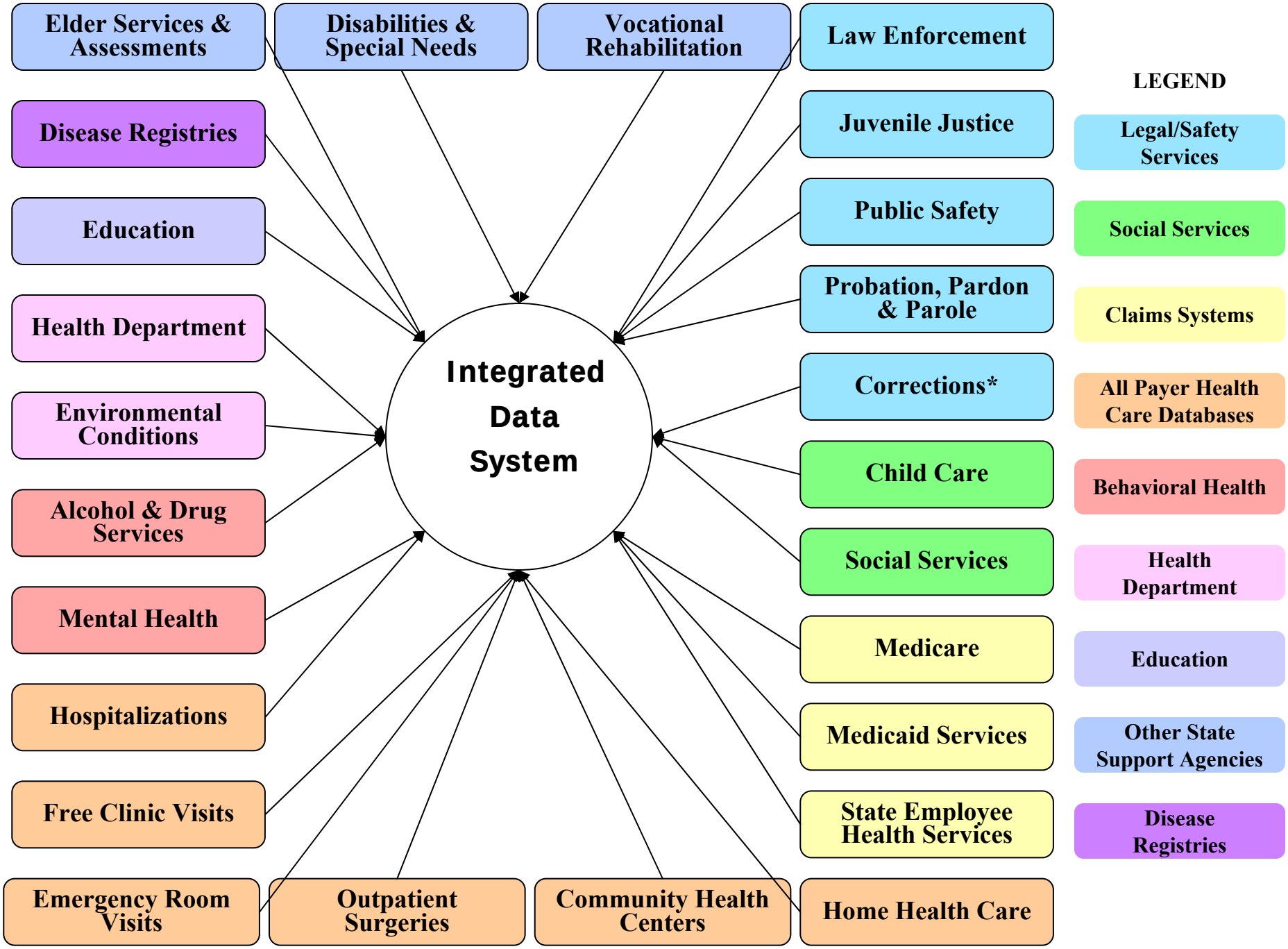
Summary/Discussion

- The most frequent place visited by patients was the Emergency Department. This is often the place where most individuals obtain primary care.

- No medical test should be mandatory but people should be given the opportunity to "opt out" of testing.
  - Counseling and education about avoiding risky behaviors should continue and should not be linked to testing.

Potential Missed Opportunities for Early HIV Testing in SC Department of Corrections

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HARS-SC Department of Corrections

- Patients diagnosed from 1/01 – 12/05
- SC Prisons
  - Mandatory HIV testing started on entry in 1998
  - Two processing centers in Columbia, SC where testing is performed
  - Those testing positive are segregated to a single facility
  - Inmates testing negative assigned to any of 28 institutions
- Jails
  - Mixed HIV testing approach (none mandatory)

HIV-infected Individuals in SC Prior Arrests Before Diagnosis

4,117 individuals diagnosed from Jan. 2001 to Dec. 2005

2,332 (57%) individuals were *ever* arrested prior to their initial positive HIV diagnosis

1,675 individuals (41%) Arrested within 10 years of FPHIV

Reasons for Arrests For HIV-infected Individuals – South Carolina, 1991-2005

Violent Offenses	842 (14%)
Property Offenses	1,736 (28%)
Drug/Alcohol Offenses	725 (12%)
Public Order Offenses	672 (11%)
Sex Crimes	54 (1%)
Other	1,629 (27%)
Data Not Determined	458 (7%)
Total Arrests	6116

Arrests Characterizations of Early and Late Testers of HIV infection in SC

Type of Arrest(s)^	Early Testers N=1,099* N (%)	Late Testers N =2,350* N (%)
Violent offenses	137 (12)	336 (14)
Property offenses	329 (30)	652 (28)
Drug/Alcohol offenses	103 (9)	306 (13)
Public Order offenses	127 (12)	245 (10)
Sex Crimes	11 (1)	28 (1)
Other	302 (27)	630 (27)
Data Not Determined	90 (8)	153 (7)

Adjusted odds ratios of selected characteristics of HIV-infected individuals in SC with prior arrests, limited to late and early testers (N = 1,177)

Variable	Early Testers N = 481	Late Testers N = 696	aOR (95% CI)
Sex	N (%)	N (%)	
Female	141 (28)	166 (23)	0.64 (0.46, 0.88)
Male	354 (72)	546 (77)	1.00
Age at Diagnosis			
< 25 yrs	84 (17)	38 (5)	1.00
≥ 25 yrs	397 (83)	648 (95)	3.65 (2.35, 5.67)
Previous Arrests made before Diagnosis			
≤ 4 arrests	426 (89)	540 (78)	1.00
> 4 arrests	55 (11)	156 (22)	3.36 (2.28, 4.95)

Median and Range of CD4+ T-cell and Viral Load Among Early and Late Testers (N = 1,177)

Biomarkers	Overall N = 1,177	Early Testers N=481	Late Testers N = 696
First CD4	n = 1,025	n = 340	n = 685
Median	180	490	93
Range	0 –1,819	208-1,819	0-861
First VL	n = 922	n = 317	n=605
Median	42,746	10,868	79,184
Range	50-6,440,000	110-798,400	50 -6,440,000

Odds Ratios Comparing Likelihood of Being a Late Tester and Number of Arrests by Gender and Race (N= 1,177)

Characteristic	Gender	95% CI	Race	95% CI
Previous arrests	Female (n= 298)		Black (n= 978)	
≤ 4 Arrests	1.00	---	1.00	---
> 4 Arrests	1.33	0.64, 2.79	2.63	1.82, 3.80
Previous arrests	Male (n = 879)		White (n= 199)	
≤ 4 Arrests	1.00	---	1.00	---
> 4 Arrests	2.47	1.69, 3.59	0.80	0.34, 1.89

Summary/Discussion

- This study demonstrates that many HIV-infected individuals are arrested prior to their FPHIV but are being missed.
- The correctional setting could facilitate early diagnosis of HIV infection in a population that might not otherwise have the ability to seek medical care.
- Many of these missed individuals are late testers, which further emphasizes the need to implement routine HIV screening in SC correctional facilities.

Summary/Discussion

- There are far reaching public health implications with regards to this vulnerable population and the transmission of HIV to the general populace.
- Association of young age and frequent arrest suggest that programs should be developed to target at risk youth to prevent later HIV acquisition.

Acknowledgements

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