An Evaluation of Unreported SSNs and Implications for Policy

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CCCCO Research & Planning

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Introduction

- Unique student identifiers are essential for researchers

- Social security numbers (SSNs) are still used as personal identifiers

- Increasing concern among researchers on the quality of the SSN

Use of SSNs in CCC Research

- First-Time Student (FTF) status
- Transfer to 4-year institutions
- Horizontal transfers (swirl)
- Link with EDD wage data

AB 1417-Accountability Reporting for the Community Colleges (ARCC)

- Several of the college and system indicators use FTF cohorts.

- One college indicator and two system indicators include transfers.

- One system indicator performs a student match with EDD data.

Research Questions

- What is the statewide trend of students with missing SSNs?

- Who are the students with missing SSNs (demographics, goals and outcomes)?

- What is the relationship of missing SSNs to other missing student information?

Statewide Methodology

- The Dataset
  - 109 colleges, including 72 districts
  - Credit students 2000-01 to 2004-05
- The Data Elements
  - Student Identifier (SB00/SB01 in COMIS)
    - Social Security Number
    - Unique Local Identifier

Definition of Missing SSN

- The Missing SSN
  1. Local Identifier
     - Not willing to provide SSN
     - Does not have an SSN

  2. Invalid SSN

Definition of Invalid SSN

- 000-00-0000 (area, group, serial)
- Invalid SSNs have:
  - Area number above 772
  - Area number of 666
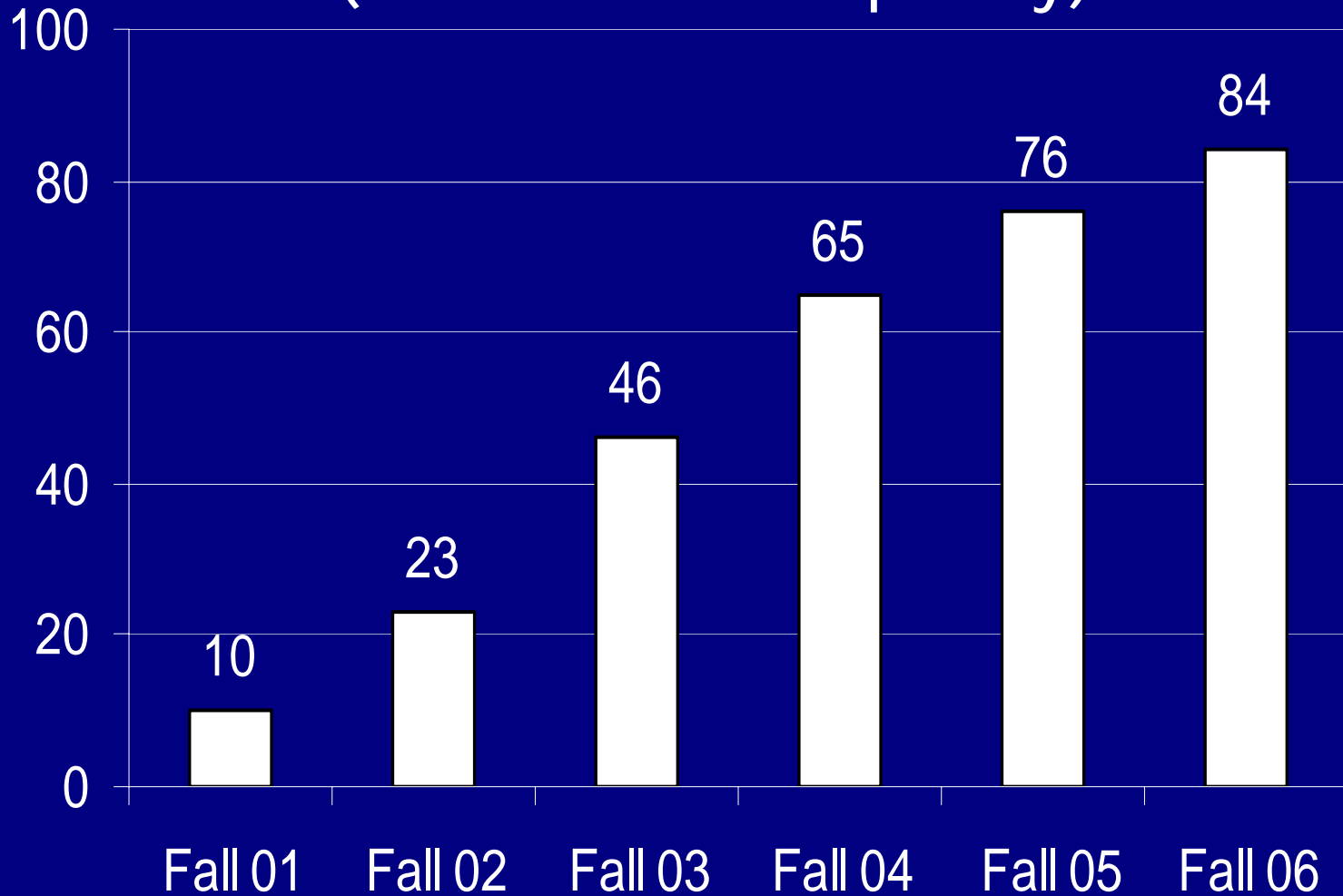 - Group number of 00
  - Serial number of 0000

The Application Process

- Today, 84/109 colleges use CCCApply, a standardized student application
- Other colleges use a customized

  on-line application process
- One college still uses a hard copy application submission

CCCApply

- Does not allow the student to provide an invalid SSN
- Allows the student to "decline to state" an SSN
- Requires students to enter the SSN twice to ensure accuracy
- Application asks for student consent for using SSN

CCCApply Subscribed Colleges
(Cumulative Frequency)

Research Hypothesis

- Is there is a trend of increasing Missing SSNs?
- Does CCCApply reduce Invalid SSNs and increase Local Identifiers?
- Do Missing SSNs have a relationship to Ethnicity?
- Do Missing SSNs affect the transfer rate of individual colleges?

Statewide Change of Students with Missing SSNs
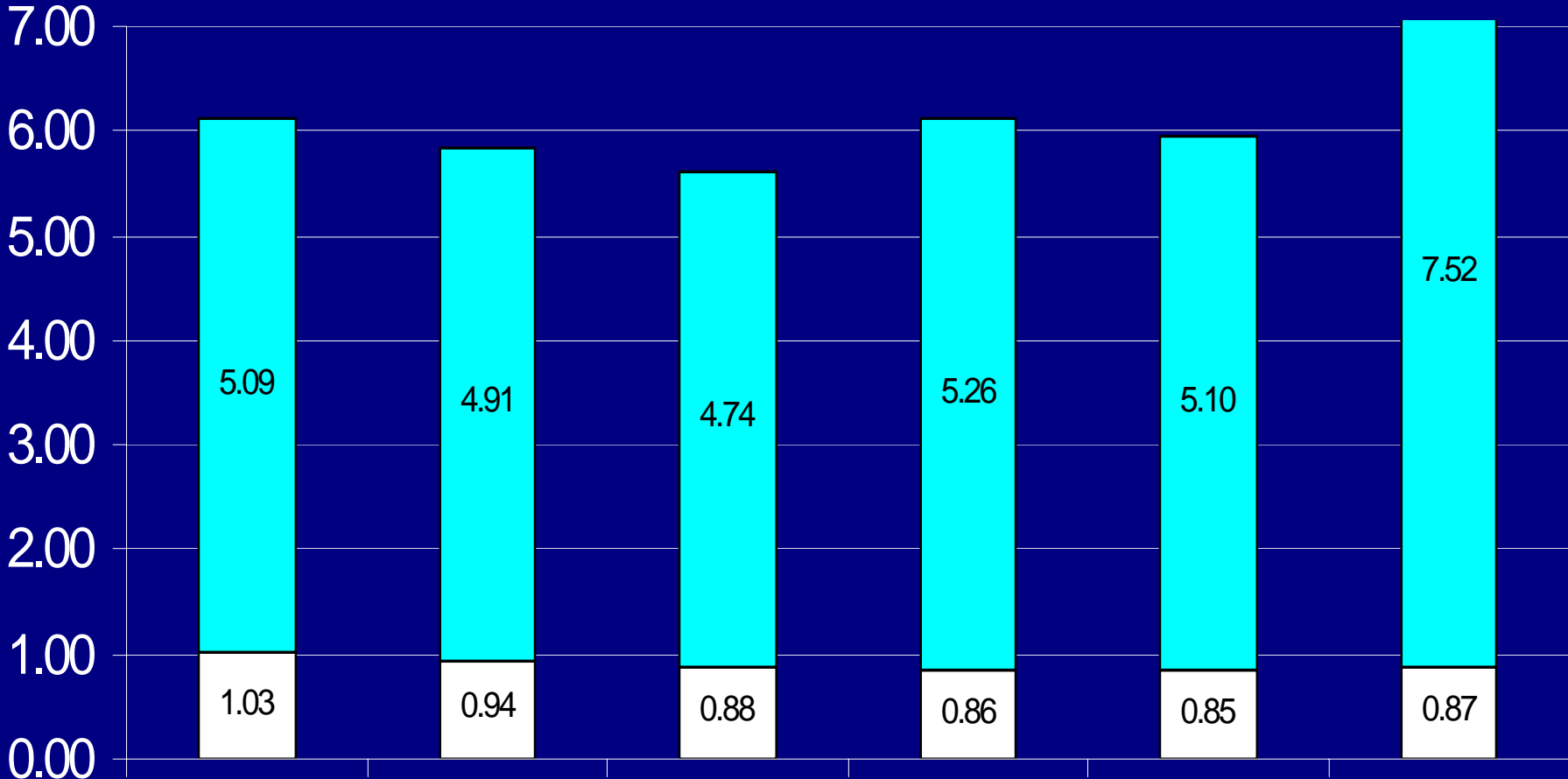
Statewide 2000-01 to 2005-06

	Total Students	Missing SSNs	Percent Missing
2000-01	970,729	59,441	6.12%
2001-02	1,013,314	59,319	5.85%
2002-03	958,439	53,854	5.62%
2003-04	797,599	48,808	6.12%
2004-05	787,153	46,811	5.95%
2005-06	811,052	68,102	8.40%

Statewide of Percent Missing, Invalid and Local

	Percent Missing =	Percent Invalid +	Percent Local
2000-01	6.12%	1.03%	5.09%
2001-02	5.85%	0.94%	4.91%
2002-03	5.62%	0.88%	4.74%
2003-04	6.12%	0.86%	5.26%
2004-05	5.95%	0.85%	5.10%
2005-06	8.40%	0.87%	7.52%

Statewide Missing SSN

Descriptives of 2005-06 Statewide by College

	Percent Missing =	Percent Local +	Percent Invalid
N	109	109	109
Mean	7.39%	6.49%	.89%
Median	5.55%	5.58%	.89%
Stand Dev	6.44%	6.53%	.19%
Minimum	1.45%	.55%	.47%
Maximum	45.28%	44.75%	1.68%

Averages of Missing and Valid SSNs by CCCApply Subscribers

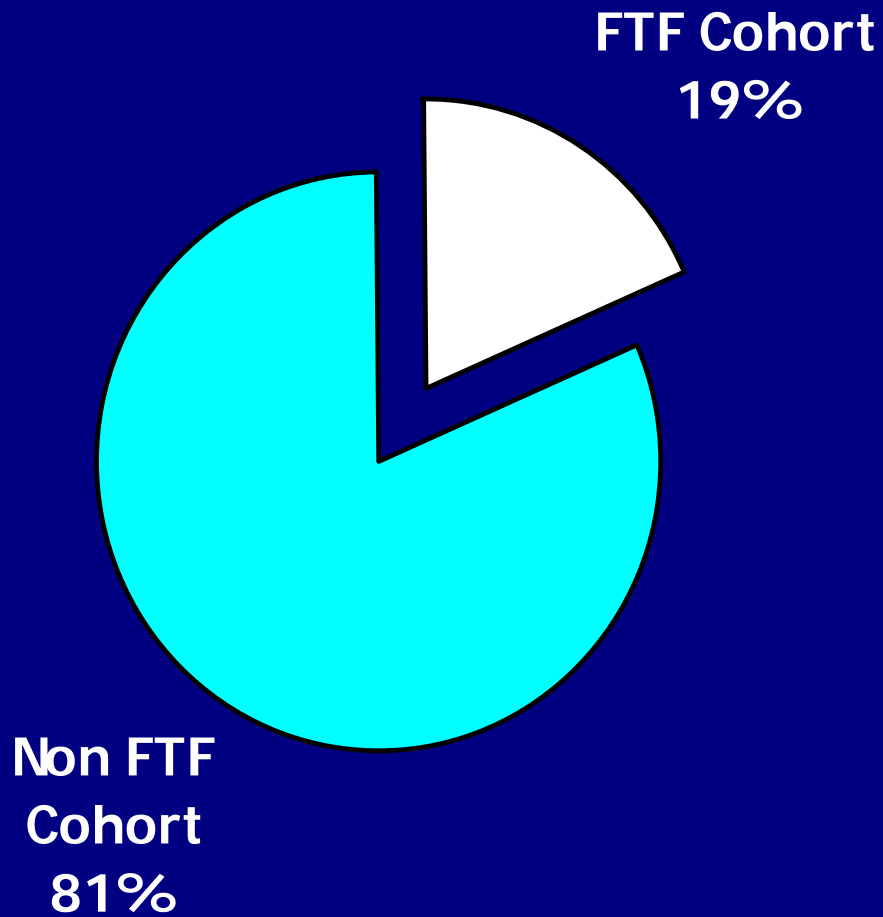| Statewide (05-06)	CCCApply (04-05)	
Percent	Yes (36)	No (73)
Missing SSNs =	6.84%	7.66%
Invalid SSNs +	*.94%*	*.87%*
Local Identifiers	*5.89%*	*6.78%*
Valid SSNs	93.16%	92.34%
Total	100.0%	100.0%

Research Results

- There is an overall statewide increase in Missing SSNs, especially for some colleges

- At this point, there is no evidence that CCCApply reduces Invalid SSNs and increases Local Identifiers

Description of Students with Missing SSNs

Cohort Methodology

- Same Cohort for ARCC "Progress Rate"
- The Cohort (FTF Cohort)
  - First-time students
  - Followed for 6 years
  - Minimum of 12 units earned
  - Transfer/degree/certificate course

Statewide Students 2000-01

Missing SSNs by Cohort Year

	Total Students	Missing SSNs	Percent Missing
1998-99	203,160	4,460	2.2%
1999-00	201,466	6,038	3.0%
2000-01	208,182	8,315	4.0%

Descriptives of Percent Missing by College, FTF Cohort (00-01)

	Percent Missing
N	108
Mean	3.17%
Median	2.25%
Stand Dev	3.54%
Minimum	0.00%
Maximum	27.00%

Description of Students in Cohort

- Demographics
- Student Goals
- Student Outcomes

Missing SSN & Demographics

- No significant relationship with Gender and Age

- Significant relationships with Ethnicity and Citizenship

Missing SSN & Demographics

- **Ethnicity**
  - Asian Students
    - Asian and Non-Asian (Odds Ratio=6.27)
- **Citizenship**
  - Students with Visas
    - Visas & Non-Visa Students (Odds Ratio=74.42)
    - Correlation (r=.823)
      - Missing SSN Rate with Student Visa Rate (by college)

Characteristics of Students with Student Visas (FTF Cohort 00-01)

- 67.4% are Asian
- 53.6% are Female
- 61.4% have Transfer as a Goal
- Slightly younger than the average age in the cohort

California Community Colleges with the highest "Student Visa" populations

- Santa Monica
- Foothill
- San Francisco
- Grossmont
- Santa Ana

FTF Cohort (2000-2001), Chancellor's Office, MIS

The Highest "Student Visa" Colleges with Percent of Missing SSNs

- Santa Monica (27.0%)
- Foothill (6.9%)
- San Francisco (7.6%)
- Grossmont (7.8%)
- Santa Ana (16.7%)

FTF Cohort (2000-2001), Chancellor's Office, MIS

Of all community colleges in the U.S., Santa Monica College has the second highest enrollment of international students

Source: Open Doors Report, 2005

Origin of International Students at Community Colleges in U.S.

- Japan
- South Korea
- Mexico
- Taiwan
- India
- China

Source: Open Doors Report 2005

National Trends of International Students at Community Colleges

- Decrease in Spring 2002 (after 9/11) with an increase again in Fall 2004
- DeAnza, San Francisco and Foothill are in the top ten nationwide
- 36% of IS are enrolled in California, New York and Texas

National Trends of International Students at Community Colleges (cont)

- California is one of the 6 states with the leading concentration of IS in community colleges.

- Approximately 9 out of 10 IS students attending community colleges are self-funded.

Source: Open Doors Report, 2005

Valid and Missing SSNs and Goals

Student Goal	Valid SSN (n=199,867)	Missing SSN (n=8,315)
Transfer	38.3%	53.2%
Degree/Certificate	7.0%	9.8%
Other Goals	31.3%	22.8%
Undecided	23.4%	14.2%
Total	100.0%	100.0%

Reasons International Students Attend Community Colleges

- Intensive English language programs
- Lower cost than other institutions
- Pathway for transfer to 4-year
- Training in technical/vocational areas

Source: Open Doors Report, 2005

Definition of Transfer Outcomes

Outcome	Definition
Transfer	Transfer to UC, CSU, ISP or OOS
Transfer Prepared	Completion of 60 transfer units
Transfer Directed	Completion of transfer Math AND English

Missing SSNs and Transfer Outcomes

	Valid SSN (n=199,867)	Missing SSN (n=8,315)
Transfer	32.9%	0.0%
Transfer Prepared	26.4%	28.4%
Transfer Directed	32.2%	38.0%

Does not total to 100% - students might have several outcomes

Definition of Other Outcomes

Outcome	Definition
AArts/Sciences	Minimum of 60 units in a field
Certificate (18+)	Minimum of 18 units in a field
Certificate (<18)	Less than 18 units in a field
30 Plus Units	Value-added threshold of units

Missing SSNs and Other Outcomes

	Valid SSN (n=199,867)	Missing SSN (n=8,315)
AArts/Sciences	18.1%	22.5%
Certificate (18+)	4.3%	5.3%
Certificate (<18)	2.6%	1.5%
30 Plus Units	70.3%	69.4%

Does not total to 100% - students might have several outcomes

Research Results – FTF Cohort

- Missing SSN is linked to Ethnicity
  - Large number of Asian students due to Student Visas.
  - We have not found a relationship to White students disguising themselves or Latino students worried about immigration problems.
- Missing SSNs effect the transfer rate of certain colleges, especially those with large student visa populations

Missing SSN & Other Student Data

- There is no relationship of missing SSNs with other missing student data elements.

Research Considerations

- Concern if more than 10% of the SSN data is missing for a college
- Consider:
  - Multiple Imputation
    - Transfer is significantly correlated with transfer directed (r=.76) and transfer prepared (r=.68).

Policy Implications

- Statewide accountability & independent research studies should consider the Missing SSN issue in the future.

- Colleges should monitor their missing SSN students, as well as student visa populations.

Further Research

- Annual analyses of Missing SSN students, statewide and by college.
- Impact of CCCApply on the Missing SSNs, as well as other data.
- Determine the cause of Missing SSNs for other credit students in the system.
- Outcomes of International Students at California Community Colleges.

Websites

- Open Doors Report on International Educational Exchange -

  http://opendoors.iienetwork.org/

- Student and Exchange Visitor Program (SEVP) - www.ice.gov/sevis

- AB1417/ARCC Website -

  www.cccco.edu/divisions/tris/rp/ab_1417/ab_1417.htm

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