

LINKING HEALTH INSURANCE SURVEY REPORTS OF MEDICAID COVERAGE TO ADMINISTRATIVE FILES IN MAINE

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I. Introduction/Background

In response to a federally mandated initiative to reduce the number of uninsured children, a group of public and private organizations sponsored a study to estimate the number of uninsured children in Maine. In November of 1997, Mathematica Policy Research conducted a random-digit dialing (RDD) computer-assisted telephone interview (CATI) with about 2,500 Maine households with children for the University of Southern Maine. The results of this survey would be used by Maine's Department of Human Services to report to the state legislature: (1) the estimated number of uninsured children in Maine and the health insurance status of their parents, (2) the estimated number of uninsured children who were eligible for Medicaid in Maine but not participating, and (3) the estimated number of uninsured children who would be eligible for coverage under Maine's planned program under the federal Children's Health Insurance Program initiative. The study results were presented to a legislative task force in Maine in early 1998.

Because the survey estimate of the number of Medicaid enrollees was lower than expected, we decided to try to link the telephone numbers for the survey completes to the state Medicaid enrollment files, and to compare survey reports of insurance coverage with the state data. The purpose of this paper is to report the findings of our comparison of data from the Maine Health Insurance Survey to the state's Medicaid enrollment file.

II. Methods

A. Survey/Data

The CATI survey was made up of two parts. The first part of the interview (or screener) collected information on household composition, health insurance status for each household member, and demographic characteristics such as employment status, race/ethnicity, and income. All households with at least one uninsured child (plus a comparison group of households with at least one privately insured child) proceeded to the second part of the interview, which collected more detailed information. Only households with at least one child were eligible for the survey. One household member

served as informant for the entire household. The sample of telephone numbers was drawn using RDD list-assisted methodology. Data collection was carried out at Mathematica's Columbia, Maryland telephone facility and directed by staff at its Princeton, New Jersey office.

We released a total of 13,291 telephone numbers, resulting in 2,449 interviews completed by eligible households. We determined whether the released telephone number was a working residential number for 85 percent of released numbers. Among those determined to be working residential numbers, we determined whether a child was present in about 92 percent of these households. Among those determined to have a child present, about 95 percent responded to the interview. The overall household response rate was therefore calculated to be 75 percent. The 2,449 eligible and responding households comprised 9,187 persons.

B. Evaluation

Soon after the data collection ended, we merged a survey-based file containing the 2,449 telephone numbers for all eligible responding households with the state's Medicaid client enrollment file as it existed on December 1, 1997. To retain confidentiality of survey respondents, Mathematica included only the telephone numbers on the survey-based file sent to the University of Southern Maine, who actually conducted the merge against the state file by telephone number. The separate survey data file delivered previously to the University did not contain telephone numbers or any other identifiers. Because the linkage was carried out at the telephone number level (for our purposes here, this is equivalent to a household) and both the survey-based and state files are at the person level, we examined both household-level and person-level linkage comparisons. All figures reported here are unweighted, because this was limited to a methodological evaluation and not intended to assess the impact on survey-based estimates.

To examine the household-level linkage, we first took the state enrollment file (a person-level file) and created a household-level file, assigning to the household the "highest level" of Medicaid eligibility among its members; that is, if anyone was currently eligible, then the household was flagged as eligible; if no one was currently eligible but someone was eligible within the previous six months, the household was flagged as eligible in previous six months; and so on. For the survey

data, we took the person-level file and created a household-level file. If anyone in the household indicated coverage by Medicaid (or "other" insurance with text that was backcoded to Medicaid), then the household was flagged as Medicaid. Furthermore, the proportion of household members reported to have each type of insurance coverage was retained as well. The two household-level files were then linked, and survey responses and Medicaid status on the enrollment file were compared.

To examine the person-level linkage, we linked by phone number, sex, and age at time of interview. The person-level state enrollment file contained date of birth and sex. We converted date of birth to age at the time of the interview. The enrollment file was then linked to the person-level survey data file. (There were some problematic links for households that apparently had twins of the same sex, resulting in a few extra linked person records.) Once again, a person was classified as a Medicaid beneficiary if s/he reported Medicaid or reported "other public insurance" with text that was backcoded to Medicaid. Survey responses and Medicaid status on the enrollment file were then compared.

III. Results

A. Linkage

Of the 2,449 telephone numbers from survey respondents, 581 linked to the state Medicaid client enrollment file by telephone number (see Figure 1). Among the households associated with these 581 telephone numbers, 540 contained at least one current or former Medicaid enrollee according to the state client enrollment file; 5 contained only persons with no Medicaid enrollment history (presumably because their last enrollment was more than a few years ago); 36 contained only persons covered by other state programs. The 36 state program cases were dropped. The remaining 545 records represented 1676 persons on the enrollment file, 1604 of whom had some history of enrollment within the last few years. According to the enrollment file, of these 1604 persons: 766 were currently eligible; 226 were previously eligible but closed within the previous 6 months; 176 were closed in the prior 7 to 18 months; and 436 were closed 19 or more months prior.

B. Household-Level Comparison

Following are the results of this linkage (see Table 1):

1904 survey households did not link by telephone number to the state enrollment file or linked to a non-Medicaid record

1760 reported no one covered by Medicaid in the survey

144 reported at least one person covered by Medicaid in the survey

313 survey households linked to a Medicaid record in the state enrollment file, which listed at least one currently eligible person in household

59 reported no one covered by Medicaid in the survey

254 reported at least one person covered by Medicaid in the survey

227 survey households linked to a Medicaid record in the state enrollment file, which listed no currently eligible person

180 reported no one covered by Medicaid in the survey

47 reported at least one person covered by Medicaid in the survey

5 survey households linked to a Medicaid record in the state enrollment file, but no one had a recent history of eligibility

3 reported no one covered by Medicaid in the survey

2 reported at least one person covered by Medicaid in the survey

Among the 59 households that had an enrolled person according to the state file and none according to the survey data:

37 contained at least one employed person reporting employer-sponsored health insurance¹

24 of these had no other type of health insurance reported and no uninsured

5 of these also reported at least one person under 65 covered by Medicare (probably meant Medicaid) and no uninsured

3 of these also reported at least one person 65+ covered by Medicare and no uninsured

¹all but two of these also had others in the household covered by private insurance (dependents covered by a current employer policy; covered by former employer; bought policy on their own; or covered by someone outside household)

3 of these also reported at least one uninsured person²

2 of these also reported at least one person with military coverage and no uninsured

19 contained at least one uninsured person

8 of these had no type of health insurance reported in the household

4 of these also reported at least one person under 65 covered by Medicare (*probably meant Medicaid*)

3 of these also reported at least one employed person covered by employer-sponsored health insurance²

3 of these also reported at least one person covered by some type of private insurance³

1 of these also reported at least one person covered by military coverage

Among the 6 remaining households

3 contained only persons covered by some type of private insurance³

2 contained only persons under age 65 covered by Medicare (*probably meant Medicaid*)

1 contained only persons covered by military coverage or "other state program"

Among the 49 households that had no enrolled person according to the state file and at least one Medicaid enrollee according to the survey data:

33 had the most recent enrollment closed within the previous six months

6 had the most recent enrollment closed 7 to 18 months prior

8 had the most recent enrollment closed 19 or more months prior

2 had no one eligible within the past few years

C. Person-Level Comparison

Following are the results of this linkage (see Table 2):

7118 survey persons were in households that did not link to the state enrollment file by phone number (or linked to a non-Medicaid record)

²reported in two places

³excluding persons currently employed and covered by employer-sponsored health insurance

6778 did not report coverage by Medicaid in the survey

340 did report coverage by Medicaid in the survey

861 survey persons linked to a Medicaid record in the state enrollment file by household phone number, but did not link by sex and/or age

704 did not report coverage by Medicaid in the survey

157 did report coverage by Medicaid in the survey

459 state enrollment persons linked to the survey file by household phone number, but did not link by sex and/or age

275 were not currently enrolled according to the state file

184 were currently enrolled according to the state file

Among the 1222 persons that were linked between the enrollment and survey files by phone number, sex, and age:

587 were reported to be currently enrolled in the state file

68 reported no Medicaid coverage in the survey

519 reported Medicaid coverage in the survey

635 were not currently eligible in the state file

545 reported no Medicaid coverage in the survey

90 reported Medicaid coverage in the survey

Among the 68 persons enrolled according to the state file and not according to the survey data:

24 are reported as uninsured in the survey

18 reported other private insurance³

16 reported Medicare but under age 65 (*probably meant Medicaid*)

5 are employed and reported employer-sponsored insurance

3 reported other private insurance³ and Medicare, but under age 65 (*probably meant Medicaid*)

1 age 65+ reported Medicare

1 reported military coverage

Among the 90 persons not enrolled according to the state file, but enrolled according to the survey data:

82 were closed within the prior six months

- 3 were closed 7 to 18 months prior
- 5 were closed 19 or more months prior

IV. Discussion

There are several different types of error that are worth highlighting, generally falling within one of two broad categories: agreement errors and linking errors. First, we will discuss the agreement errors. Among those records that were on both the survey file and the state enrollment file, the majority of cases were in agreement regarding Medicaid status. At the household level, 80 percent of cases were in agreement (47 percent agreeing that someone in the household was currently enrolled, and 34 percent agreeing no one was currently enrolled). At the person level, 87 percent of linked persons were in agreement (42 percent agreeing that the person was currently enrolled, and 45 percent agreeing that the person was not currently enrolled).

At the household level, nine percent of linked cases had at least one person reported as currently enrolled in the survey but not on the state enrollment file; however, two-thirds of these were reported on the state file to have at least one person whose eligibility closed within the prior six months. At the person level, seven percent of linked cases were reported as currently enrolled in the survey but not on the state file; over 90 percent of these cases were reported on the state file to have been closed within the prior six months. This type of discrepancy is therefore most likely to be respondent reporting error. Recall that we had one person serving as informant for all household members.

Among those survey households that did not link by telephone number to the state Medicaid file, eight percent reported Medicaid coverage for at least one household member. Among those survey households that linked by telephone number, many of those considered to be a Medicaid beneficiary on one of the two files did not link by age or sex to the other file.

V. Conclusions/Summary

Among those records that linked, more than 80 percent of cases agreed on current Medicaid enrollment status. More than half of the disagreeing linked cases were those in which survey respondent reported no one in the household enrolled in Medicaid, but the state files recorded at least one person currently enrolled.

About one third of the disagreeing linked cases were those in which the survey respondent reported being enrolled in Medicaid and the state record indicated that the person's eligibility had closed within the prior six months.

The initial reason for carrying out this analysis was a lower-than-expected estimate of Medicaid enrollees from the survey data as compared to the state enrollment file. Among those households that linked, 11 percent had at least one current enrollee according to the state file but no one reported as currently enrolled according to the survey data. At the person level, six percent of linked persons were reported as currently enrolled in the state file but not in the survey data. Among this six percent: 35 percent were reported as uninsured in the survey; 28 percent said they were covered by Medicare but were under age 65; 26 percent said they were covered by private insurance (but not through their own current employer, if any); and 7 percent reported being covered by their current employer.

One can conjecture that the linked enrollees reported as uninsured in the survey represent respondent reporting error, where the person may not realize that s/he is still considered to be enrolled; the enrollees under age 65 reporting Medicare also likely represent respondent error, confusing Medicare with Medicaid (despite clarifying information given in the survey questions); the enrollees reporting some type of private insurance may well be cases in which the respondent is correct and the state has not been informed that the enrollee obtained other insurance (or has not yet updated its file as such).

Among households and persons reporting Medicaid coverage in the survey, a large number did not link to the state enrollment file. At the household level, among the 447 households reporting at least one person covered by Medicaid, 32 percent did not link by telephone number to the state file. And among those surveyed Medicaid households linked by household telephone number, 20 percent of persons did not link by age and sex to persons on the state file. There were also 184 currently enrolled persons on the state file, linked by telephone number to the survey data, who did not link by age and sex to any persons in the linked survey household. These linking problems suggest that information on the state files regarding telephone number and persons currently living in the household may be out of date.

Figure 1. Linkage Results

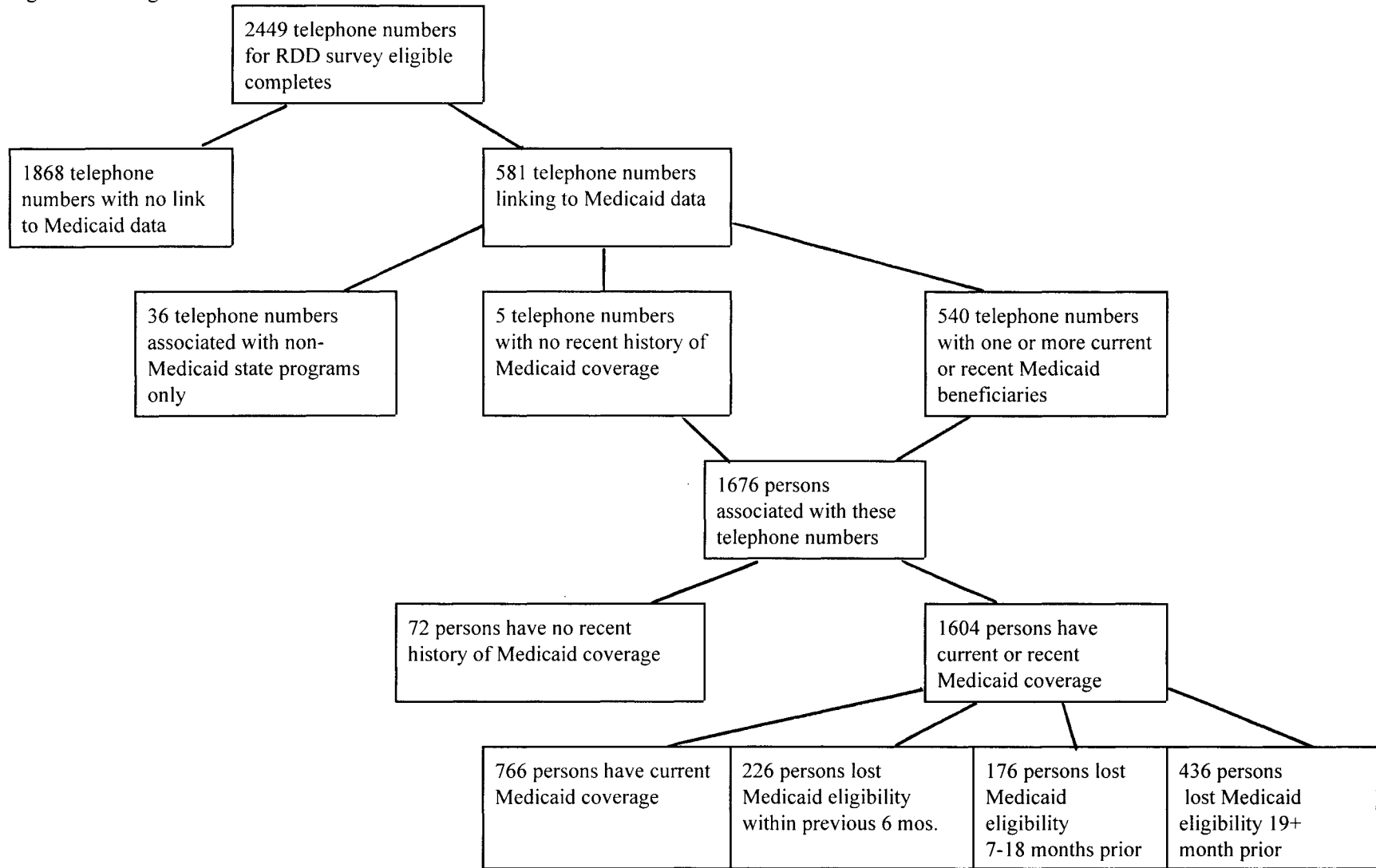


Table 1. Household-Level Medicaid Comparison

Linkage status among 2,449 households	Medicaid status reported in state file ("highest" eligibility status among all household members)	Medicaid status reported in survey (for one or more persons in household)
1,904 survey households who did <i>not</i> link by telephone number or linked to a non-Medicaid record		1,760 no Medicaid
		144 Medicaid
545 survey households who <i>did</i> link to a Medicaid record in the state file by telephone number	313 with at least one currently enrolled member	59 no Medicaid
		254 Medicaid
	227 with at least one formerly enrolled member	180 no Medicaid
		47 Medicaid
	5 no one with (recent) enrollment history	3 no Medicaid
		2 Medicaid

Table 2. Person-Level Medicaid Comparison

Linkage status among 9,187 persons	Medicaid status reported in state file	Medicaid status reported in survey
7,118 persons in 1,904 survey households who did <i>not</i> link by telephone number or linked to a non-Medicaid record		6778 non-Medicaid
		340 Medicaid
861 persons in 545 survey households who <i>did</i> link to Medicaid record in state file by telephone number but who did <i>not</i> link to the state file by age and sex		704 non-Medicaid
		157 Medicaid
459 persons in 545 state-file households who <i>did</i> link to survey file by telephone number but who did <i>not</i> link to survey file by age and sex	184 currently enrolled	
	275 not currently enrolled	
1,222 persons (merged) in 545 survey households who <i>did</i> link to Medicaid record in state file by telephone number and who <i>did</i> link to state file by age and sex	587 currently enrolled	68 non-Medicaid
		519 Medicaid
	635 not currently enrolled	545 non-Medicaid
		90 Medicaid