Medicaid Usage by JWB Clients

Introduction

Jim Mills, and Kate Wilson, from the Juvenile Welfare Board (JWB), initiated this analysis request to examine the Medicaid Usage by clients who are 0 to 17 years of age. The JWB clients were identified to be in three JWB supported programs (Directions, Suncoast, and PEMHS). This request required the use of Probabilistic Population Estimation (PPE) & Caseload Segregation Integration Ratio (C/SIR) as there were no shared individual level information to link the two different systems together. The number of individuals that were eligible to use services, is to be broke down by program and age to assess the issue of who has a need for services and those who are accessing services.

Method

This methods used to conduct this analysis was PPE & C/SIR, which will take two data files and estimate the number of individuals who overlap both data files. First the method used to identify the participants in the analysis will be discussed. Then a second section that will briefly talk about the statistical methods used PPE and C/SIR, and finally how the procedure was conducted.

Participants

The initial JWB client population (12, 255 individuals), the first of the two files used, was examined and modified to contain only those who are between the ages of 0 through 17 and had gender and date of birth (DOB) information available. One individual had no gender and was removed. Of the remaining individuals, 5, 837 were removed as their age, which was calculated as of the date of Sept. 30, 2001, was not within the age range of 0 to 17. This left 6,417 individuals, who were used in the analysis.

The second file used, was Medicaid Eligibility Data of those individuals who were eligible for Medicaid services for at least one month during the following period, October 1, 1999 to June 30, 2001 and who were between the ages of 0 to 17. This file contained 47,470 individuals.

PPE & C/SIR

These processes rely on information in existing databases. PPE is a statistical method for determining the number of people represented in a data set that does not contain a unique identifier. The estimation is based on a comparison of the information on the distribution of Date of Birth and Gender in the general population with the distribution of Date of

Birth and gender observed in the data sets. The number of distinct birthday/gender combinations that occurred in each data subset are counted. The number of people necessary to produce the observed number of birthday/gender combinations are then calculated.

C/SIR is a rating between 0 and 100, which indicates the amount of overlap of clients between systems. Zero being no overlap at all and 100 being total overlap. Duplicated, unduplicated counts from the two files and combined files is used in the C/SIR formula to calculate the C/SIR.

There are multiple concerns and issues when using PPE and C/SIR. These concerns are 1) the assumption of unduplicated individuals in each file, 2) the differences in the sizes of the files being used, and 3) the confidence interval between the file unique identifier and population estimation.

The first, is the assumption that each record in the file is one unique individual and that individual is found only once in that file. Second, the proportion difference between the files cannot be larger than 1:20. Meaning if the smallest file had 6,417 individuals in it, than the other file being used with it in the PPE process must not have over 128,340 individuals. If the proportion does not meet this requirement then PPE cannot be used on those two files. The third concern when using PPE and C/SIR is that the Population estimation of the number of individuals in a file should fall within a 95% confidence interval of the number of individuals using the system unique identifier. If this requirement is not meet then further investigation should be done to identify if the issue is the quality of the system unique identifier or in the quality of the DOB and gender. If the problem is in the DOB and gender, then PPE should not be used. Else, if the problem is in the system unique identifier, then PPE will be more accurate than the system unique identifier in identifying the number of unique individuals are in the system file.

Procedure

Both files were formatted using only a system unique identifier, DOB and gender, then used in the PPE & C/SIR process. There were multiple concerns about the limits of using PPE on these two data files. There is a sizable difference between the JWB client file size (6,417) and the Medicaid file size (47,470). The difference still falls within the 1:20 ratio, so the analysis was continued. There was a problem, however, when the JWB client file was further broken down by Program (Directions, Suncoast, and PEMHS). The number of clients in the PEMHS file(only 17 individuals), which did not meet the 1:20 ratio and thus PPE should not be used when trying to identify the number of individuals who overlap between PEMHS and Medicaid.

Even though each individual was identified as unique in both files, the 95% confidence interval was not met for either file. It was very close in the Medicaid file. Some further analysis was done to attempt to identify potential administrative default DOB, which will cause this problem, but no admin. DOBs were found. Even though these issues were identified, the analysis was continued with caution.

Results

Demographic Breakdown

Tables 1 and 2 breakdowns the JWB client population by program and age. Looking at Table 1, an equal distribution of individuals are in Directions and Suncoast, with only a small portion in PEMHS.

JWB Clients by Program **Table 1.**	
Program	**Number. of Ind.**
Directions	3,112
Suncoast	3,288
PEMHS	17
Total	6,417

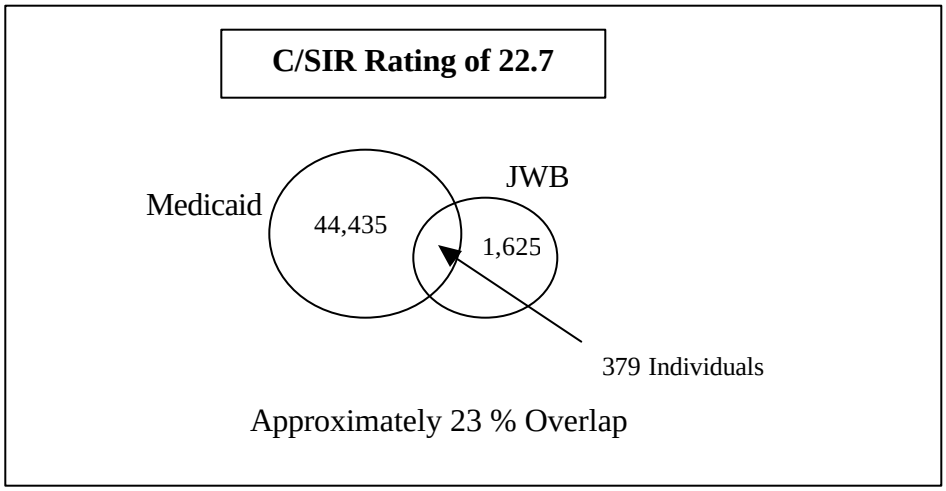
When looking each program by age, Directions and Suncoast are again similar to each other. While PEMHS, interestingly, did not have any individuals in the age range of 0 to 5.

JWB Clients by Age **Table 2.**	
Program	**Number of Ind.**
Directions	
0 to 5 yoa	648
6 to 12 yoa	1,549
13 to 17 yoa	915
Suncoast	
0 to 5 yoa	641
6 to 12 yoa	1,622
13 to 17 yoa	1,025
PEMHS	
0 to 5 yoa	0
6 to 12 yoa	3
13 to 17 yoa	14
Total	
0 to 5 yoa	1,289
6 to 12 yoa	3,174
13 to 17 yoa	1,954

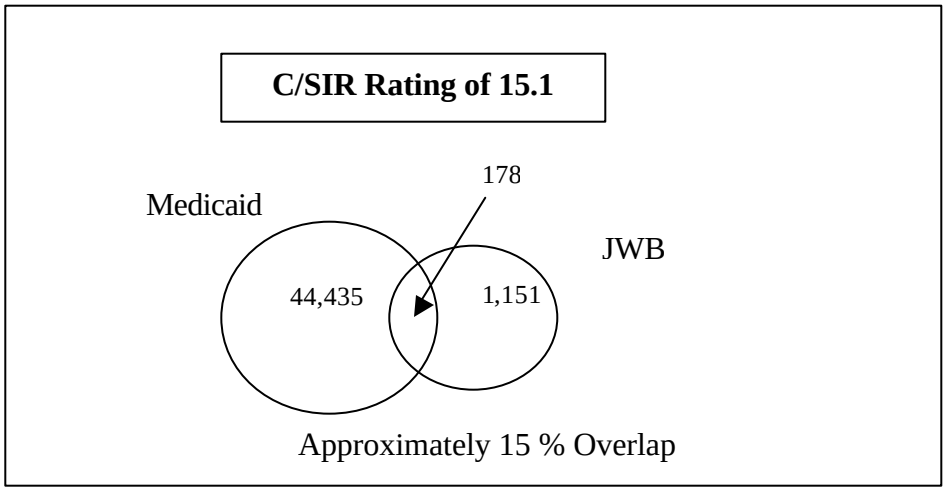
PPE & C/SIR

PPE and C/SIR was run on the JWB Clients and the Medicaid file and subgroups of these files by program and age breakdown. Figures 1 through 5 show the findings.

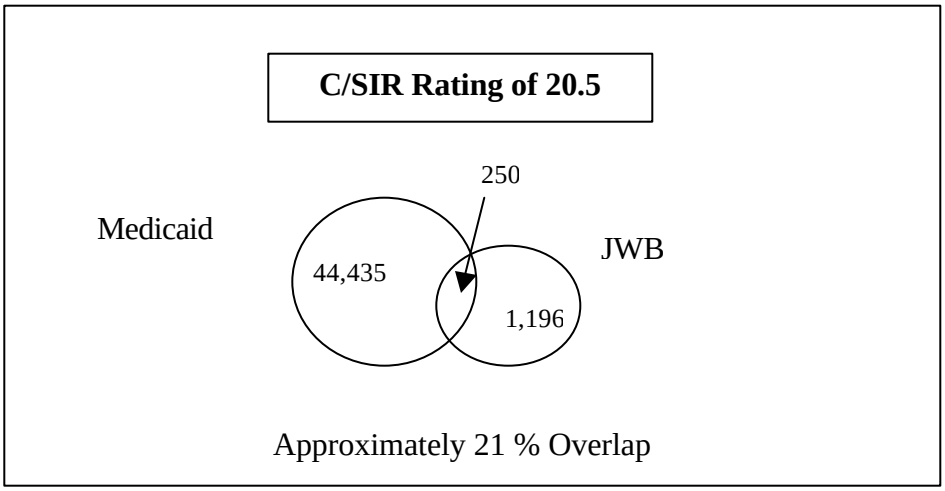
JWB Clients and Medicaid



Directions/JWB Clients and Medicaid



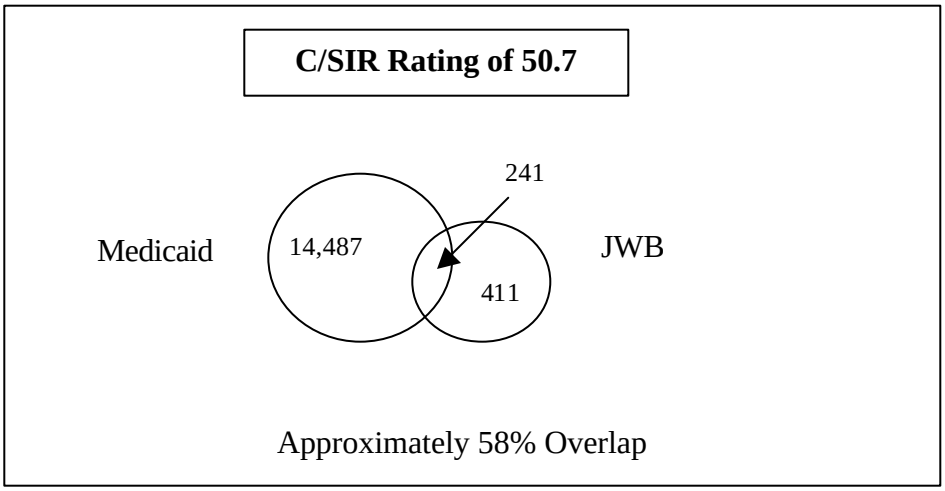
Suncoast/JWB Clients and Medicaid



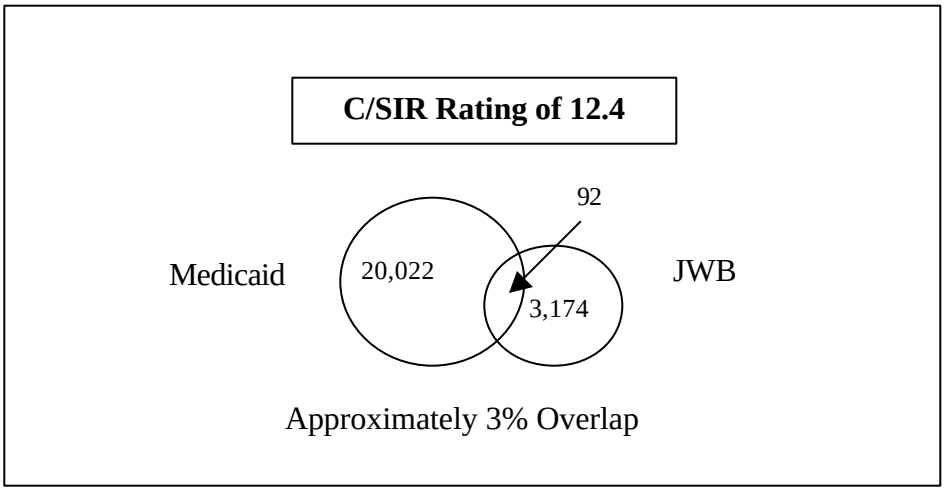
PEMHS/JWB Clients and Medicaid PPE could not be used here

JWB Clients and Medicaid by Age Group

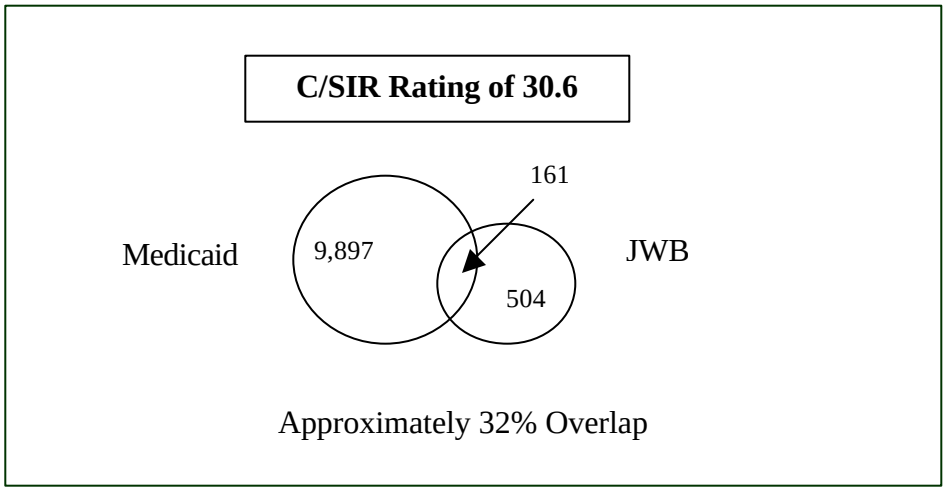
Ages 0 to 5



Ages 6 to 12



Ages 13 to 17



Overall Youths between the ages of 6 to 12 were less likely to show to be in the Medicaid system during the period being looked at. The Suncoast program's clients was slightly more likely to show in the Medicaid system during the period being looked at.