

Report to the Oregon  
Department of Human Services

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Forecasting Methodologies for Oregon's  
Medical Assistance Program Caseloads

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## Introduction

Since June 2000 we have worked with the Director's Office of the Oregon Department of Human Services to process the Oregon Medical Assistance Programs (OMAP) program eligibility database for the purposes of developing a new working methodology for forecasting monthly caseloads for a variety of Oregon's medical assistance program groups. Under contract number 89128 we worked from July through December 2000 on preliminary data processing and versions of the forecasting methodology. In February 2001 we received improved and updated versions of the requisite data and under contract number 91599 we produced a final version of caseload forecasts for the period October 2000 through June 2003 using this new dataset. All work on this project has been supervised by Professors Leete and Gates. They were ably assisted by student researchers Damen Bleiler (MBA, 2001), Colleen Chrisinger (BA, 2001) and Alfons Palangkaraya (Oregon State University, Ph.D. candidate). While all three of our students made especially gifted contributions, a special thanks must be extended to Mr. Palangkaraya who brought truly extraordinary effort and expertise to the project.

The key methodology and findings relating to both stages of the project are described in this report. While an earlier draft of this report was prepared in January 2001 to report on contract number 89128, the work commencing in February of this year built upon and superceded the earlier work. Thus, the reporting for both contracts is being combined here in order to provide one complete set of documents for the entire project. As part of this work we have also provided a complete set of computer programs and resulting datasets to the ODHS Directors Office and will continue to provide technical assistance to their implementation of these programs.

In the report that follows we explain the derivation of the historical caseload and program flow counts and how these data are used to construct a caseload forecasting methodology for 12 different groups of OMAP programs. We aim to provide sufficient technical detail to allow other users to reproduce our methodology. In addition, we present all forecasted data series in disaggregated form as well as all key data components that are used as elements of the forecasting methodology. To this end we have included a number of technical and data appendices. We also provide some discussion of methodological issues that should be considered for future forecasting efforts. Key issues for consideration are highlighted at the end of this report in the 'conclusions and recommendations' section.

## Historical Data on Oregon Medical Assistance Program Caseload Flows

### Data Construction

Oregon's Medical Assistance Program (OMAP) database provides us with complete program participation data in medical assistance programs from January 1994 through September 2000. This database provides the program number and start and end dates for each eligibility segment of an OMAP client receiving assistance. From this data, we construct an historical record depicting the caseload dynamics for this period. In addition to simple monthly caseload tabulations, we are able to calculate program inflows, leavers, outflows and transfers. Program inflows are defined as the number of individuals beginning a spell in a given program during the month, who were not receiving any kind of OMAP assistance in the previous month. Program leavers are those who end a spell in a program in a given month. Leavers can transfer to other programs or can exit from OMAP entirely that month, in which case they are represent program outflow. A given program can have both transfers in (*from* other programs) and transfers out (*to* other programs).

**Program Groups.** Oregon's medical assistance programs are currently comprised of 52 separate program categories known as Program Eligibility Reporting Codes (PERC). For the purpose of the analysis here, those codes are aggregated into 12 program groups – each combining related OMAP programs that are budgetarily related. These groups were created with DHS staff and are:

1. TANF and related programs
2. General Assistance
3. OHP Pregnant Females
4. OHP Families
5. OHP Adults and Couples
6. Aid to the Blind/Aid to the Disabled
7. Old Age Assistance
8. Foster Children
9. Medically Needy
10. Children's Health Insurance Programs
11. OHP Children
12. Qualified Medicare Beneficiary

The correspondence between these groups and the more detailed PERC codes is shown in Appendix A.

**Dating Conventions.** In discussing program inflows, leavers, outflows, transfers and caseloads for a given month, we use the following dating conventions. A program group caseload for a particular month is defined as the number of individuals receiving assistance in that group on the last day of that month. Monthly inflows (or transfers in from another program) are defined by eligibility spells that begin during any day of that particular month. Similarly, monthly leavers (outflows or transfers to another program) are defined as spells that end during any day of that month. Using these definitions, the total caseload of given month (month N) can then be derived as the caseload of the previous month (month N-1) plus the inflows during that month (month N) minus the leavers during that month (month N).

**Data Processing Issues.** In order to use the available data suitable for use in forecasting, there are a number of technical data processing issues that must be dealt with. A few major issues are described briefly here and all issues are discussed in more detail in Appendix B. These issues include the following:

- We are unable to discern true spell start dates on or before January 1<sup>st</sup>, 1994.
- Discontinued medical assistance programs must be dropped.
- Some programs must be recoded to create historical consistency in program code usage.
- Coding of juvenile (age 18 and under) program participation in Oregon Health Plan programs was inconsistent over time and data programming was required to rectify this and create a consistent historical time series.
- Programming or administrative anomalies sometimes create multiple program participation segments that are contiguous and sometimes very short (as short as one day). Because it is unlikely that these truly represent different spells of program participation, programming was required to recode them to one spell.
- Each program group encompasses program participation under multiple PERC codes. The nature of some programs is such that individuals may change PERC codes while remaining a participant within the same program group. These changes frequently take place with no lag or only a short lag between PERC code spells. For the purposes of calculating survival curves and caseload duration data used below, different spells that occur within a given month and within a program group but under different PERC codes must be combined in order maintain consistency with the counting of caseloads on the last day of the month. The methods used to combine these PERC code spells are discussed in detail in Appendix B. In particular, it should be noted that slightly different methods are used for Program Group 9 (Medically Needy) and in the other groups, because of the singular influence of monthly program switching that takes place in Group 9.

## **Historical Data**

The historical data derived here is displayed by program group in Figures 1 through 14. The actual data values for historical (and forecasted values) are provided in Appendix E. Figures 1 and 2 show the monthly caseloads over time for the 12 program groups (larger programs are shown in Figure 1 and smaller programs are shown in Figure 2). Figures 3 through 14 show monthly inflows and leavers over time separately for each program group.

## Forecasting Methodology

### Overview

The historical caseload flow data discussed in the previous section is used as a basis for projecting future monthly caseloads for the period October 2000 through June 2003. In particular, we separately project program inflows (individuals without current coverage entering the system in a given month), individual transfers between program groups and program outflows (individuals leaving medical assistance altogether). Using these projected flows, each projected monthly caseload is then derived from the previous months caseload, beginning with October 2000. A *projected monthly caseload for month N is equal to:*

- the actual or projected caseload for month N-1
- plus projected inflows occurring during month N,
- plus projected transfers in to that program group from other program groups during month N,
- minus projected transfers out to other program groups during month N,
- minus exits from OMAP during month N.

Each of the components of monthly program flows are forecasted separately and are described in the sections below, followed by a detailed discussion of the methodology for combining them to construct final monthly caseload forecasts.

### Projecting Program Inflows

Monthly program inflows into Medicaid program groups (from outside the system) were modeled using Ordinary Least Squares Regression (OLS) analysis with time-series data. Numerous models were evaluated for each of the 12 program groups, and each program group has a unique model. Four criteria were used to choose the model form that was ultimately chosen for each program group. They are:

1. The *coefficient of determination* ( $R^2$ ), which is the percentage of inflow variability explained by the model, is maximized, subject to the remaining criteria.
2. Within a given model, each coefficient's *P-value*, which is the probability of incorrectly concluding that the variable has a significant or real influence on inflows, is minimized. By doing so, you can conclude that a given variable, in the presence of the model's other variables, has a significant or non-spurious influence on Inflows.
3. The *Durbin-Watson statistic* has a value as close to 2 as possible. A model's stability and, thus, its explanatory value, are valid only in the absence of serially correlated residuals. Durbin-Watson values roughly between 1.80 and 2.20 are indicative of no serious problem of correlated residuals. Failing satisfaction of this criterion, auto-regressive (AR) and/or moving average (MA) terms were added to models as necessary.
4. The direction or *sign of the predicted relationship* between the independent variable and the inflow, in the presence of other variables, is consistent with expectations

**Historical Period Analyzed.** External Inflow data were available from calendar February 1994 through September 2000. External Inflows were measured by counting the number of individuals who had not been served by any of the program groups evaluated during the immediately prior month. Presumably, Inflows to many of the programs evaluated during the early months of 1994 are strongly influenced by implementation of the Oregon Health Plan, begun only a few months earlier. Originally, we had planned to begin our historical analysis using data beginning with months in mid- or latter-1994 to allow OHP effects to "ramp in". However, 1994 was also a period during which Oregon was reemerging from a relatively serious recession,

as indicated by a 25 percent reduction in the unemployment level during that year. The unemployment level for 1995 through mid-1996, however, showed a complete reversal, increasing by better than 30 percent. So over a one and one-half year period, a large part of it coincident with OHP's startup, the seasonally adjusted unemployment level declined from 100,000 to 75,000, and increased again to 105,000. What's more, the unemployment level is easily the most dynamic, not to mention among the most reliable, of the exogenous variables available to us.

Therefore, so as not to lose unemployment's possible value as a predictor, we chose to use the entire historical time series available to us. To account for OHP's possible coincident ramp up effects, we included a linear ramp up factor. The factor assumed that 20 percent of OHP's effects would be felt by February 1994 and would be fully realized by June of that year.

**Independent Variables Used.** A variety of explanatory variables were used to explain the Inflows in the 12 different program groups. These included variables constructed to measure programmatic and policy changes, a variety of measures of the demographic composition of the state of Oregon, including measures of the population over ages 65, 75 and 85, measures of the number of births annually, measures of the number of women of childbearing age, and the number of children under age 18. In addition, variables capturing the economic climate in the state included real personal income, and a measure of concentration of unemployment experience. Autoregressive and moving average terms are included in order to capture the serial correlation in the data. The final models used as a basis for the projections are summarized in Table 1 below. The models and the independent variables used are also described in more detail in Appendix C.

**Table 1: Inflow Model Summary**

<b>Program Grouping</b>	<b>TANF</b>	<b>GA</b>	<b>Pregnant Women</b>	<b>OHP Adults w/Kids</b>	<b>OHP Adults – no Kids</b>	<b>AB/AD</b>	<b>OAA.</b>	<b>Foster Kids</b>	<b>Med Needy</b>	<b>CHIP</b>	<b>OHP Kids</b>	<b>QMB</b>
<b>#</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
R <sup>2</sup>	94%	90%	62%	85%	79%	55%	56%	34%	53%	62%	73%	44%
Pmax	0%	0%	2%	0%	5%	1%	2%	0%	0%	0%	1%	0%
D-W	1.94	2.30	2.18	1.80	2.58	2.10	1.90	1.95	1.91	2.00	2.00	2.05
<b>Percentage Points of R<sup>2</sup> Attributable to Seasonality</b>												
	7%	4%	30%	14%	23%	32%	6%	10%	7%	N/A	16%	6%
<b>Exogenous Variables</b>												
Under 20				X	X					X		
Concentric												
Pop				X	X	X	X	X	X	X	X	
Real P.I.		X										X
Births			X									
Over 65												
Over 75						X	X					
Over 85						X	X					
Ywom			X									
Feteens											X	
Adun			X									
<b>Endogenous/Program Variables</b>												
WaiverL	X					X		X	X			
WaiverS	X								X			
Mo	X	X		X	X							X
OHP		X				X					X	
July'97	X						X					
OHPpreg			X									
XXS								X				X
<b>Autoregressive/Moving Average Terms</b>												
AR				X		X				X		X
MA	X	X	X		X	X	X	X		X	X	X

## Projecting Program Leavers

The analysis used here to calculate the rates at which individuals leave programs over time is based on a family of statistical techniques called survival analysis. Program leavers (in month N+1) are those individuals who are present in the caseload of a given program group on the last day of one month (month N) and absent on the last day of the next month (month N+1). The methodology used to forecast the number of leavers in each month for each program group is based on historical averages measuring the rate at which individuals leave particular programs. The rates at which individuals leave a program are in part, and importantly, related to how long they have been on a program. Thus, for each program group we apply a set of survival rates that apply specifically to individuals who have been in the program for one month, two months, three months and so on, up to 57 months and longer. These survival rates are applied to the previous months caseload, which is broken down by exactly how many months those individuals have been on the program. Each of these steps is discussed and illustrated here.

**Survival Analysis.** We calculate an average historical conditional cohort survival curve for each program group. In this case, we are calculating simple survival rates, and are not controlling for any underlying characteristics. As with other steps in this analysis, in using historical averages we must select the time period to include in the average. Considerations include the desire to use data that are on the one hand reflective of current conditions, and on the other hand cover a time period long enough that it reflect long-term trends and not short run variation. We performed some preliminary analysis of cohort survival curves over time and found that there has been some shift from the 1994-95 to the 1996-2000 time periods. Given that the 1994-95 period represents a substantial ramp up period for a number of OHP programs, we choose to use the data for 1996-onward here. Figures displaying the changes over time for each program group are shown in Appendix D.

In any particular program group, all individuals who enter in a given month are considered a cohort. This cohort moves through the program together through time. Each month some members of the cohort will leave the program, while some percentage will remain until the next month or 'survive'. When program rules and conditions, and cohort characteristics are relatively stable over time, then we expect the behavior of successive cohorts to be relatively similar to one another and to be reflected in a calculated average.

For the purposes of survival analysis, different eligibility spells that occur within a given calendar month and within a given program group must be 'reconnected' in order to produce results that are consistent with our method of counting end-of-month caseloads. The methods of reconnecting such spells are discussed at length in Appendix B. Because of the particular nature of disconnected spells, different methods of 'reconnection' are used for program group 9 (Medically Needy) than for all remaining program groups.

**Survival Curves.** Each *conditional cohort survival curve* used here is based on the actual program participation of cohorts that entering the program groups between January 1996 and September 2000. It is constructed as the average *percent of those who are remaining in month N who will still be in the program group in month N+1*, for N=1 to 57. The conditional survival curves used for the 12 program groups are shown here in Figure 15 through 17.

It is interesting to note a number of things about these survival curves. First, in the curves for the OHP program groups shown in Figure 16, the survival rates clearly reflect the six-month eligibility recertification requirement, dropping every sixth month and then rebounding again. In the OHP program for pregnant women (program group 3) it is clear that program 'survival' drops dramatically in the tenth month. A tiny fraction of women, however, do appear to remain on the program through what appears to be a second pregnancy through a maximum of 25 months.

Some additional points are clearer when the same data is viewed as *unconditional survival curves*. These curves, displayed in Figures 18 and 19 show the *percent of the beginning cohort that is still remaining in the program after a given number of months* -- one, two, three and so on. The varying nature of the different programs is clear in comparing these unconditional survival curves for the different program groups. Some programs, for example AB/AD and OAA, have relatively high long-term survival rates – about 60 percent of the original recipients still remain after 24 months. Others appear to be typically characterized by shorter durations, such as TANF, where fewer than 20 percent of individuals remain after 24 months, and in OHP and CHIP programs where fewer than 10 percent of individuals entering the program still remain after 24 months. The underlying data for these unconditional survival curves is shown in Appendix D.

**Projected Leavers.** In order to calculate projected leavers for a given program group, we use the conditional survival probabilities shown in Figures 15 through 17 and apply the monthly figures to the current monthly caseload, broken down by how long individuals have been participating in the program group. This calculation is made using the same ‘reconnected’ spells discussed above and in Appendix B. An example of this calculation for Program Group 1 (TANF) for October 2000 is shown in Table 2. In order to forecast leavers in October 2000, we apply calculated conditional survival probabilities to the September 2000 caseload. This yields the number of remaining program group participants in October 2000, again distributed by the number of months that they have participated in the program (where the number of months has been increased by 1). The number of leavers in October 2000 is then calculated as the difference between the September 2000 caseload and the October 2000 survivors. Forecasts of leavers in subsequent months are calculated similarly, using each successive month’s calculation as a base to work from.

**Future Research.** This methodology incorporates basic knowledge about cohort survival rates into the forecasts of program group leavers. It may be practical to incorporate predictive variables as well, by modeling cohort survival functions as a function of basic demographic and economic information. In addition, trends in survival behavior over time should be further investigated in order to make a final determination of the optimal amount of historical data to include in the analysis. Finally, in some program groups the analysis is sensitive to how survival rates are handled for cohorts that survive longer than the 57 months. At present, the data used allows for the estimation of separate conditional cohort survival rates for cohorts up to 57 months old as of September 2000, and one for those 58 months and older. Sensitivity to this specification should be investigated as well as alternative ways of handling the forecasting of program survival for very long-term program participants.

In addition, in a number of programs continued eligibility and program usage patterns are directly related to age. In many cases, individuals entering at different ages have very different survival patterns over time. In order to explore this possibility, we present survival curves for each program by relevant age group breakdowns. These are shown in Figure 20 through 31. Only in TANF (Program Group 1), do survival rates appear to be relatively unrelated to age (Figure 20). In all other programs there seems to be some distinction by age group. In GA (Figure 21), survival rates are lowest for children ages 0-19, highest for those beginning spells while in their 20’s and declining with age after that. In the OHP pregnant women’s program there is no clear distinction in survival rates by maternal age, but as infants sometimes remain in this program after birth, their survival curves look distinctly different from their mothers (Figure 22). In both OHP programs serving adults (program groups 4 and 5, Figures 23 and 24), survival rates are highest for those in their 40s and 50s. In Aid to the Blind and Disabled programs (AB/AD, Program Group 6), survival curves are highest for children and lowest for those aged 60-64 (Figure 25).

**Table 2. Example of Surviving Caseload Forecast Computation, Program Group 1 (TANF)**

Months	Survival Rate	Actual Sept'00 Caseload	Oct'00 Forecast Caseload
1	0.941 x	5,496	
2	0.907	5,411	5,171
3	0.919	4,583	4,909
4	0.931	4,144	4,214
5	0.935	3,912	3,857
6	0.933	3,321	3,657
7	0.939	3,557	3,100
8	0.944	3,255	3,339
9	0.945	3,249	3,073
10	0.947	3,109	3,072
11	0.943	3,101	2,944
12	0.901	2,776	2,924
13	0.894	2,651	2,501
14	0.907	2,295	2,370
15	0.910	1,758	2,081
16	0.912	1,595	1,599
17	0.918	1,114	1,455
18	0.921	1,190	1,023
19	0.925	1,068	1,096
20	0.927	963	988
21	0.932	975	893
22	0.933	948	909
23	0.931	854	885
24	0.933	713	795
25	0.935	776	665
26	0.937	621	725
27	0.940	584	582
28	0.937	538	549
29	0.938	491	504
30	0.941	490	461
31	0.939	406	461
32	0.944	402	381
33	0.940	417	379
34	0.943	354	392
35	0.949	300	334
36	0.954	305	285
37	0.952	334	291
38	0.945	267	318
39	0.949	320	252
40	0.956	253	304
41	0.961	222	242
42	0.952	218	213
43	0.960	230	208
44	0.963	179	221
45	0.953	229	172
46	0.964	200	218
47	0.964	224	193
48	0.963	169	216
49	0.968	172	163
50	0.970	160	166
51	0.963	224	155
52	0.964	162	216
53	0.968	161	156
54	0.977	154	156
55	0.973	144	150
56	0.979	112	140
57	0.967	5,755	110
58+			5,566
Caseload Surviving to Oct'00			72,398

As might be expected, survival in Old Age Assistance programs and in all age limited programs for children (Foster Children, OHP Kids and CHIP) are most distinctly related to age. In OAA (program group 7, Figure 26), the survival curves fall distinctly with age at the beginning of the spell. Thus individuals beginning spells beginning in the ages 55-60 have very high survival rates; rates drop distinctly with each subsequent age group. The same general pattern with age holds for participants in the program for Medically Needy (Program Group 9, Figure 28) and Qualified Medicare Beneficiaries (Program Group 12). In the Foster Children (Program Group 8, Figure 27) survival curves are highest for children under the age of 10 and drop for each year of age for those ages 11 and over. The survival curve for infants (age 0) is steeper and falls between the two groups of younger and older children. In CHIP (Program Group 10, Figure 29) and OHP-Kids (program group 11, Figure 30), survival rates by age fan out after the first 6-month eligibility recertification. While participation is clearly longest for young children and shortest for older teenagers, survival rates do not fall uniformly as age rises.

### **Projecting Program Transfers**

The third category of program flows to forecast is related to the distribution of program leavers between outflow from the OMAP system and transfers to other programs. A certain share of participants enrolled in a program group on the last day of a given month will have exited that program by the last day of the next month, as discussed in the preceding section. Of those leavers, on the last day of the next month some will have left OMAP, while others will be enrolled in other OMAP program groups.

Transfers out from one program group are, by definition, transfers in to another. Measuring and forecasting these transfers highlights an important interdependence between program group caseloads. In cases where programs are particularly interdependent, a changing caseload in one must be taken into account in forecasts of future levels of the other. For instance, many TANF families move to the Oregon Health Plan after they leave TANF. Thus, a rise in TANF medical assistance recipients during some period of time could be a precursor to a rise in OHP caseloads in some future period. The model developed here is intended to capture just such an interdependency.

**Methodology.** The methodology for forecasting these transfers is a relatively simple one. Historical data from the period January 1996 through September 2000 are used to calculate the percentage of program group leavers that exit from OMAP entirely and the percent that transfer from one program group to another. These average transfer rates are then applied to forecasted program group leavers to determine where these leavers go. While data is available from January 1994 onward, we choose not to use the first two years of data for two reasons. First, those two years represent a considerable ramp-up of OHP programs and unlikely to be representative of the more stable later years. Second, there is a need to balance the use of recent data – most likely to be representative of current conditions – with the use of a time series long enough to ensure that short-term, month-to-month irregularities in the data do not dominate the results. By our judgement, the most recent 57 months of data meet that criteria.

The transition matrix used for the calculations reported here is shown here in Table 3. The 12 rows represent the program group that an individual is in on the last day of month N. For individuals who leave that program group, the 13 columns represent where they are found on the last day of the subsequent month, month N+1. Given that they are known to leave their original program group, they can be found in another program group or they can be found to have left OMAP altogether. The cells in each row sum to 100 percent; all leavers from each program group are accounted for. In all cases, the diagonal elements of the transition matrix (row 1, column 1; row 2, column 2, etc.) are zero. By construction, the figures here reflect the disposition of individuals who have left their program group after month N. Thus, they are not found in the

same program group in month N+1.<sup>1</sup> Thus, this matrix has 156 cells (12 by 13), of which 12 are zero by definition, leaving 142 averages to be used in the calculations below.

**Table 3. Average Transition Matrix -- December/January 1996-August/Sept 2000**

		Entering Program Group in Month T+1												Out
		1	2	3	4	5	6	7	8	9	10	11	12	
Leaving Program Group in Month T	1	0.0%	0.1%	0.9%	7.2%	1.5%	1.1%	0.0%	3.0%	0.0%	1.9%	18.3%	0.0%	67.0%
	2	1.9%	0.0%	0.1%	1.0%	18.0%	42.0%	0.2%	1.6%	2.3%	0.1%	0.6%	0.9%	31.5%
	3	17.8%	0.0%	0.0%	37.2%	2.4%	0.1%	0.0%	0.0%	0.0%	0.2%	6.9%	0.0%	35.4%
	4	9.2%	0.2%	3.3%	0.0%	9.0%	0.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%	77.5%
	5	1.5%	4.1%	1.4%	8.1%	0.0%	1.8%	0.4%	0.0%	0.3%	0.0%	0.0%	0.5%	81.9%
	6	2.0%	1.1%	0.1%	1.0%	5.1%	0.0%	11.2%	2.5%	3.4%	0.5%	1.7%	3.0%	68.6%
	7	0.0%	0.0%	0.0%	0.0%	0.2%	1.7%	0.0%	0.0%	1.1%	0.0%	0.0%	2.3%	94.8%
	8	18.7%	0.9%	0.2%	0.0%	0.1%	3.8%	0.0%	0.0%	0.0%	1.5%	11.8%	0.0%	63.7%
	9	0.1%	0.3%	0.1%	0.3%	1.2%	9.4%	7.9%	0.0%	0.0%	0.0%	0.0%	13.6%	67.3%
	10	7.1%	0.1%	0.3%	0.0%	0.2%	0.4%	0.0%	1.1%	0.0%	0.0%	39.7%	0.0%	51.2%
	11	15.5%	0.1%	0.7%	0.5%	0.9%	0.4%	0.0%	1.1%	0.0%	11.6%	0.0%	0.0%	75.4%
	12	0.1%	0.1%	0.0%	0.3%	0.7%	7.8%	14.8%	0.0%	33.9%	0.0%	0.0%	0.0%	42.2%

Table 3 shows the average of transition matrix for the 57 months used here.<sup>2</sup> From each program group, anywhere from 31 percent (GA-program group 2) to 94 percent (OAA-program group 7) of leavers, leave OMAP entirely. The remainder of leavers go to assorted other programs. Some of the more significant flows between programs include that 37 percent of those leaving OHP Pregnant Women (program group 3) enter OHP Families (program group 4) and 18 percent enter TANF (program group 1), 18 percent of those leaving TANF (program group 1) go to OHP Kids (program group 11) and that 42 percent of those leaving GA do so to enter AB/AD (program group 6).

**Future Research.** Future research for this component of the methodology should investigate the following issues: First, the relationship between short-term variability and longer-term stability in the transition matrices should be investigated in order to further assess the length of time period that should be covered with any averaged transition matrix that is used. Second, the historical transitions matrices should be inspected for time trends. Ultimately, all the components of the transition matrix that are used could be reformulated as 142 time series and forecasted in a time-series fashion along the same lines as the program inflow forecasts discussed above. However, because many of the 142 components are quite negligible it might be more practical to restrict such a methodology to the larger and more substantively important flows and to retain the simpler historical average methodology discussed here for the others.

<sup>1</sup> Note that this does not preclude their reentering that program group sometime in the future.

<sup>2</sup> The exception to this are the cells relating to program group 10 – the CHIP program. This program group first began on July 1<sup>st</sup>, 1998. We have only 26 monthly transitions observed in and out of this program group.

## Caseload Forecasting Methodology

The final caseload forecasts produced here are constructed using all the elements produced thus far: forecasts of program group inflows, program group leavers, and of transfers in and out of program groups. These are assembled so as to replicate the flow of individuals through programs and generate a final caseload number for each program group for each month of the forecast period. The starting point is the last known complete caseloads counts, those of September 2000. Participants of programs on September 30<sup>th</sup>, 2000 are broken down accordingly to the length (in months) of their current spell in that program group. All other forecasts are applied to this base and each month's forecast is a function of the forecast that precedes it.

Most simply, for one program group the forecast for a given months caseload is equal to:

- the previous months caseload (actual or projected),
- plus projected inflows,
- plus projected transfers in to that program group from other program groups,
- minus projected leavers (comprised of transfers to other program groups and exiters from the system).

Because the forecast of leavers involves separate estimates for 57 cohorts, and because the forecasts for all program groups are interdependent due the transfers between them, the actual calculation of the total monthly caseload is a bit more complex than it might appear at first blush. The dynamics of the calculation are illustrated in Table 4.

**Table 4: Caseload Forecasting Model Schematic**

Months on Program	Survival Probabilities	Actual Sept'00 Caseload	Forecasted Oct'00 Caseload	Forecasted Nov'00 Caseload
1	p1	c1	d1 = external inflow + internal inflow	e1 = external inflow + internal inflow
2	p2	c2	d2 = p1 x c1	e2 = p1 x d1
3	p3	c3	d3 = p2 x c2	e3 = p2 x d2
4	p4	c4	d4 = p3 x c3	e4 = p3 x d3
5	p5	c5	d5 = p4 x c4	e5 = p4 x d4
...			...	...
58+			d58 = d57 + (p57xc57)	
<b>Carry Over (Stayers)</b>			d59 = d2 + ...+ d58	e59 = e2 + ...+ e58
<b>Total Caseload</b>		<b>c60 = c1 + ...+ c 54</b>	e60= d59 + d1	e60 = e59 + e1
<b>Exits</b>			d61 = c60 - d59	e61 = d60 - e59
<b>Exits to Outside</b>			d61 x transition matrix	e61 x transition matrix
<b>Exits to Other Programs</b>			d61 x transition matrix	e61 x transition matrix

### **Forecasts: October 2000 – June 2003**

The caseload forecasts resulting from this methodology appear to be generally consistent with the historical trends in each data series. The historical and forecasted totals are shown in Figure 32 (for larger programs) and Figure 33 (for smaller programs). No formal sensitivity analyses or simulation tests have been conducted at this time. The underlying components of the caseload totals are forecasted inflows, forecasted program transfers in, forecasted program transfers out and forecasted program exits. The historical and forecasted data for each of these components is shown for each program group in Figures 34 through 45. The data displayed in Figures 32 through 45 is also available in tabular format in Appendix E.

## Conclusions and Recommendations

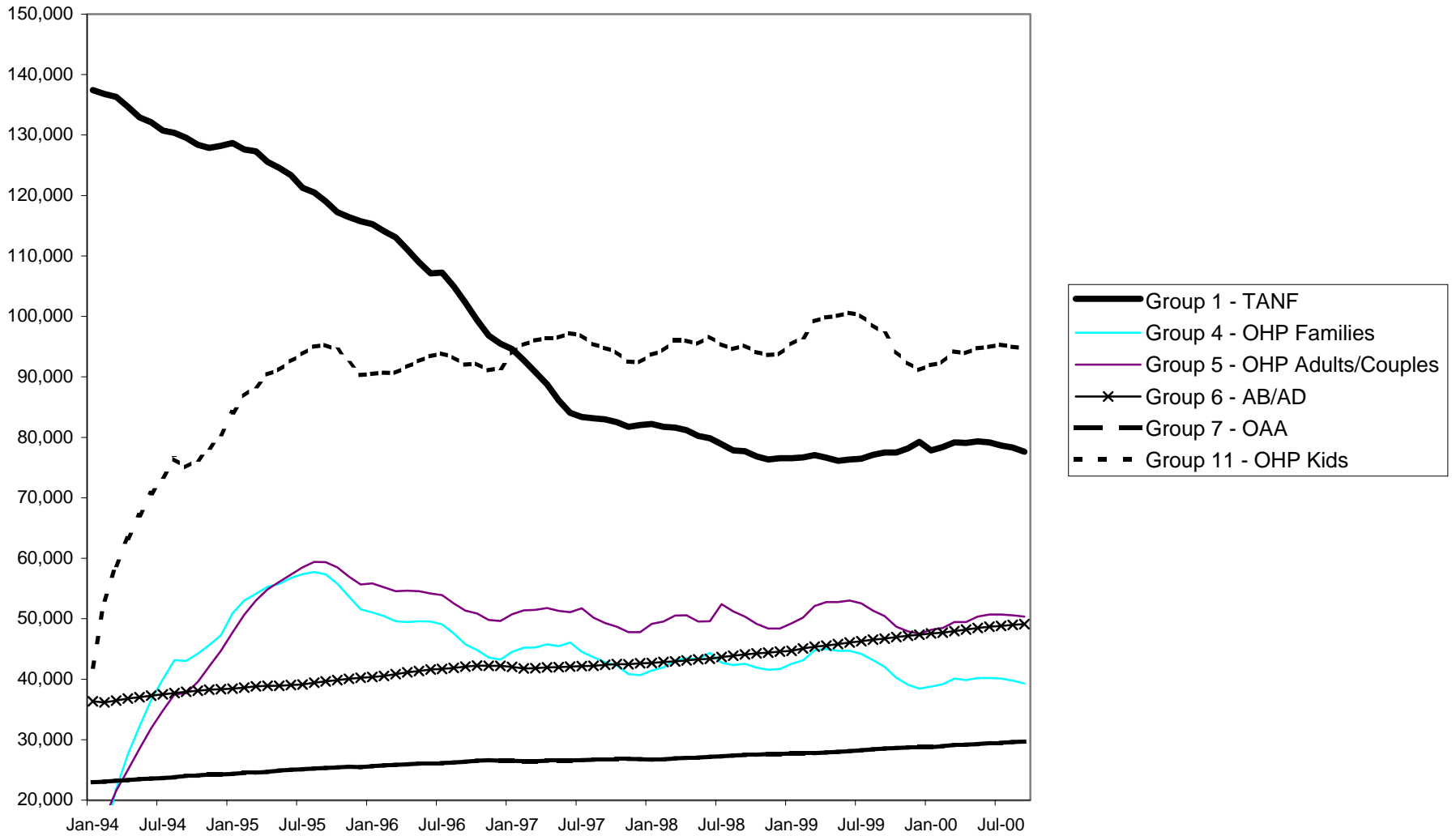
This project has made considerable progress in developing a working caseload forecasting methodology based on historical OMAP data. At this stage we have constructed a simple and workable forecasting methodology that appears to yield quite reasonable results. However, there are a number of ways that this work can be refined and improved in the future. In particular:

- As more historical data becomes available, the data sample should be split. The early portion should be used to forecast the later portion and the accuracy of the forecasts should be checked. The same technique should be used to test the efficacy of a number of possible improvements and variations of the model that are suggested here.
- All stages of this analysis rely on historical behavior as a basis for projecting future caseloads. In particular, in conducting the time series analysis used to project program inflows, the calculation of survival curves and the calculation of the transition matrix one must explicitly choose the historical time period to include in the analysis. Further research should examine the trade-off between using long historical series and using shorter series that are more reflective of current conditions. Decisions rules for selecting the appropriate historical period should be selected. Depending on conditions affecting particular programs, these choices might be made differently for different program groups.
  - As a start at such considerations, survival curves for each separate calendar year covered here (1994-2000) are included in Appendix D. As can be seen there, survival behavior in some program groups has changed considerably over time (e.g. Program Group 9 – Medically Needy), while it is relatively stable in others (e.g. Program Group 3 – Pregnant Women).
  - While the transition matrix shown in this report (Table 3, above) covers the time period January 1996-September 2000, a transition matrix covering any other grouping of months can easily be calculated from underlying data provided to the ODHS Director's Office.
- The time series analysis of program inflows here incorporates underlying explanatory variables that tie the forecasts to economic and demographic forecasts to the state. At this time, no other components of this methodology rely on actual or forecasted explanatory variables. Instead they simply base future forecasts on past patterns of program eligibility behavior. In particular, one might consider the following ways of embellishing the existing models:
  - Consider constructing time-series models of significant components of the transition matrix. These time-series might be modeled as a function of economic conditions.
  - Consider using available demographic characteristics as explanatory variables in constructing survival curves. Alternately, in programs where age or other demographic characteristics are central to explaining program survival, disaggregate survival curves by these characteristics and apply them separately to different demographic groups. As one start at this effort, we have provided survival curves disaggregated by age group for each program group in Figures 18 through 31.
- Finally, working with this methodology has revealed on logical inconsistency that should be further investigated. In determining the portion of the September 2000 caseload that remains in the program in October 2000, we apply the first months survival probability to the portion of the September caseload who have been in that program for 30 days or less

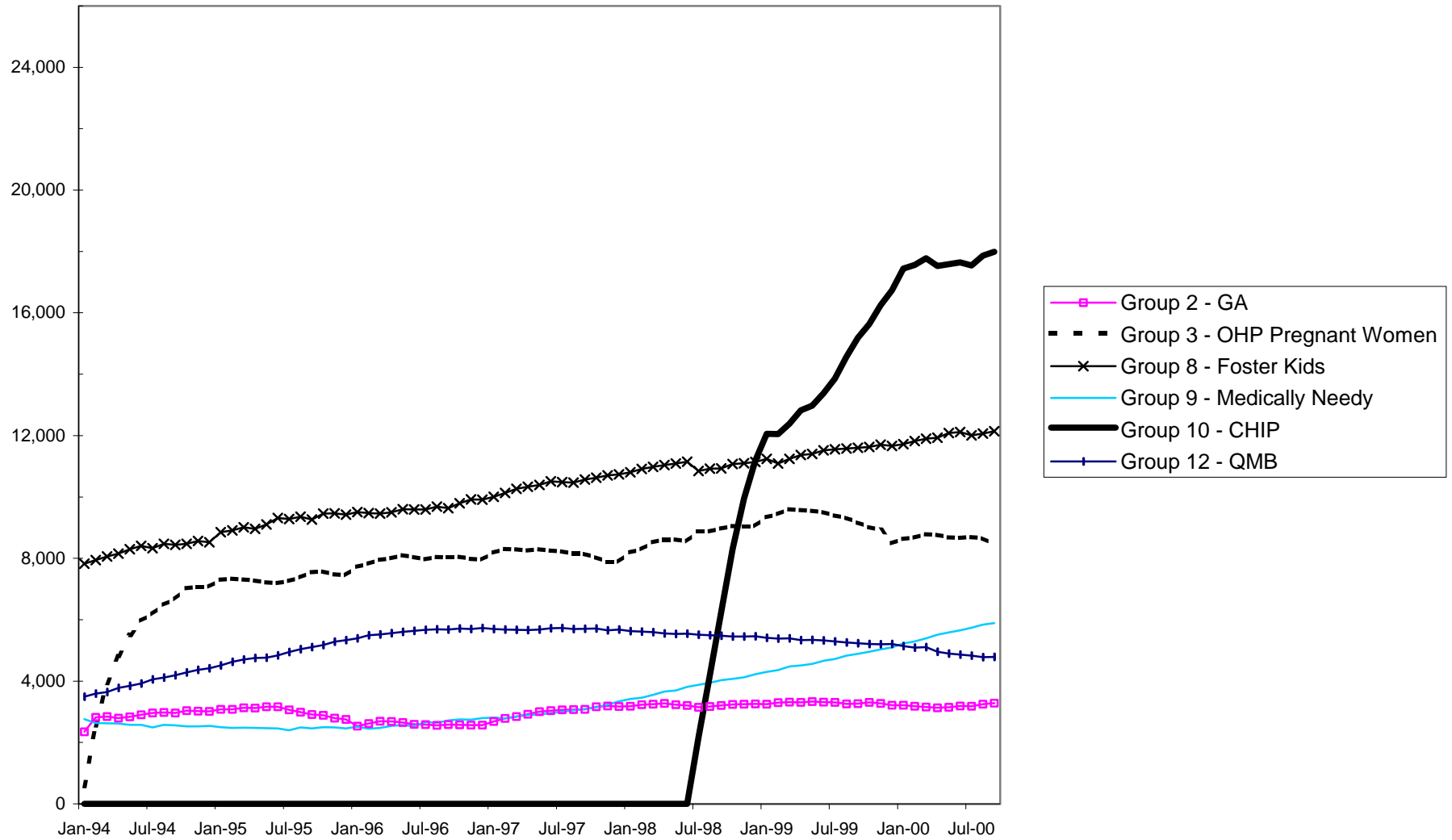
as of September 30<sup>th</sup>. An inconsistency arises because the survival probability applies to total pool of all individuals who ever began a program, no matter how short their initial spell. However, individuals who are counted on September 30<sup>th</sup> do not include those who may have begun a spell earlier in September and already exited the program. Thus, the initial months survival probability is lower than the true survival probability that should be applied to the September 30<sup>th</sup> caseload. However, because most program groups have relatively few spells that last less than 1 month on average, this inconsistency is likely to have only a small effect on those programs. The exception to this rule may be in Program Group 9 (Medically Needy), where because of the nature of the program eligibility rules very short spells are more the rule than the exception. It may be desirable to either think about ways of resolving this inconsistency more generally or to think about an alternate forecasting strategy for Program Group 9 alone. Because of the rather unique spell dynamics in Program Group 9, the latter strategy may prove to be a reasonable approach to the problem.

**Figures 1-45**

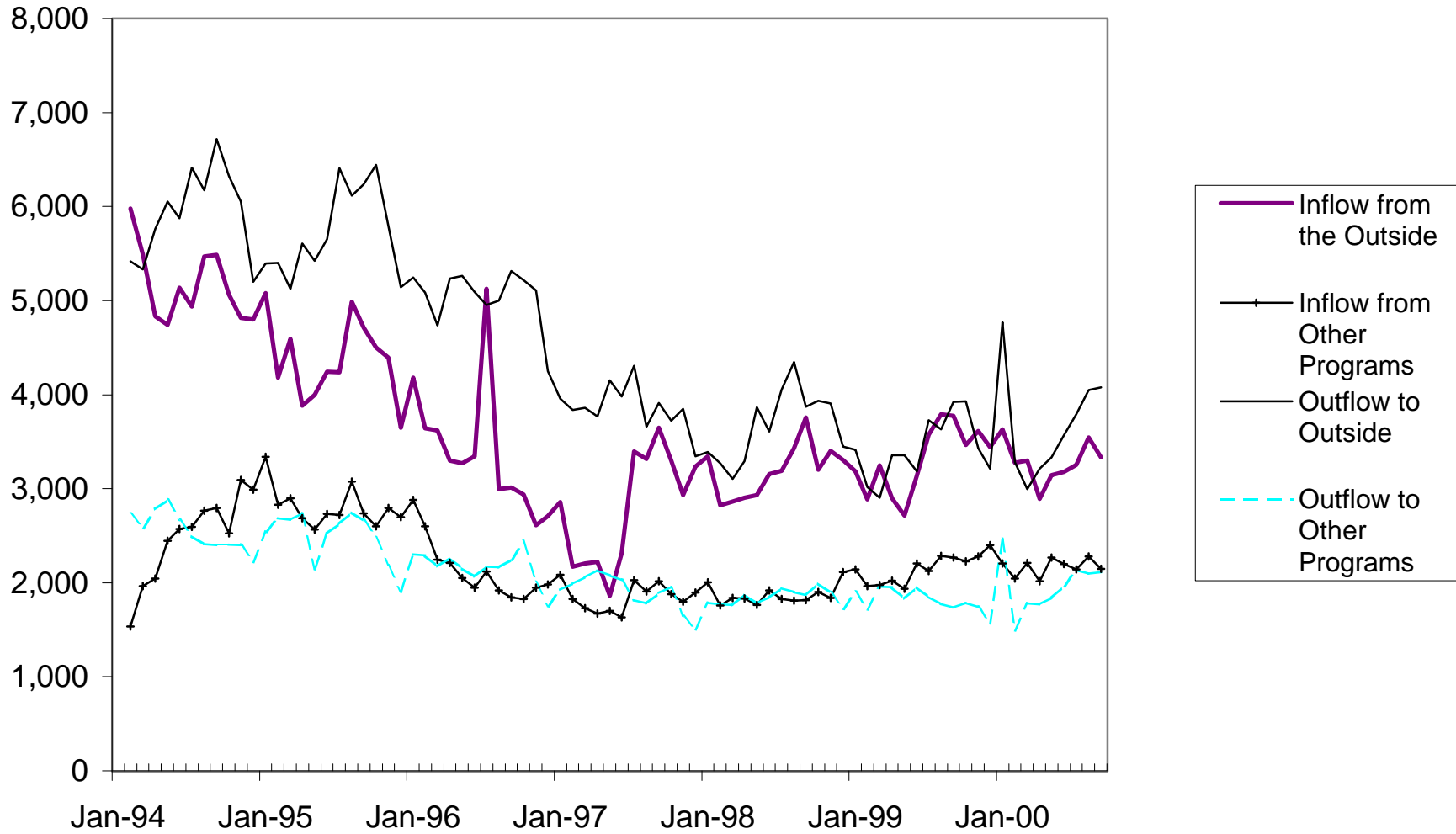
**Figure 1. Actual and Forecasted Caseloads OMAP Program Groups  
January 1994 to September 2000, (Program Groups 1, 4-7, 11)**



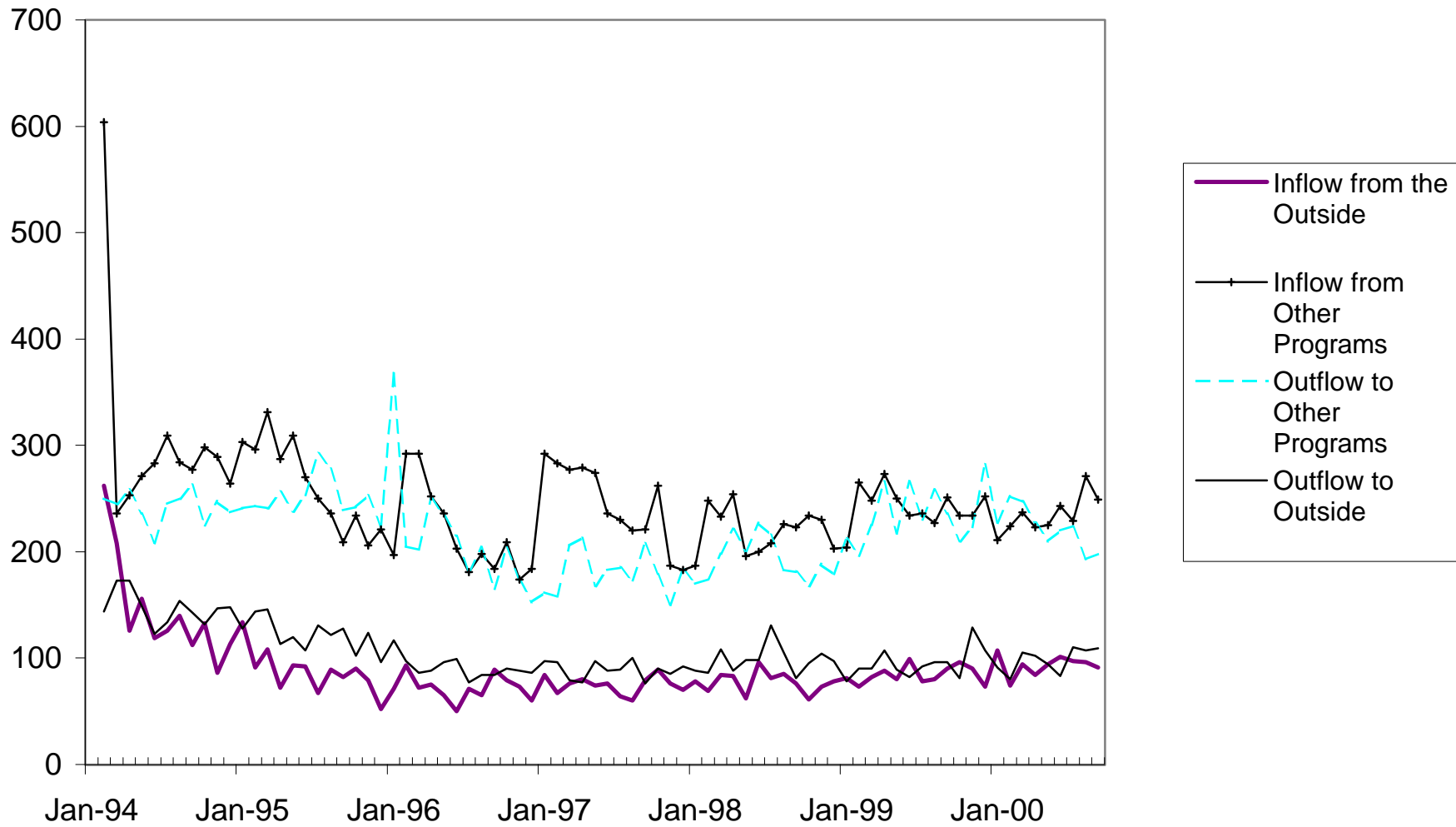
**Figure 2. Actual and Forecasted Caseloads OMAP Program Groups  
January 1994 to September 2000, (Program Groups 2, 3, 8-10, 12)**



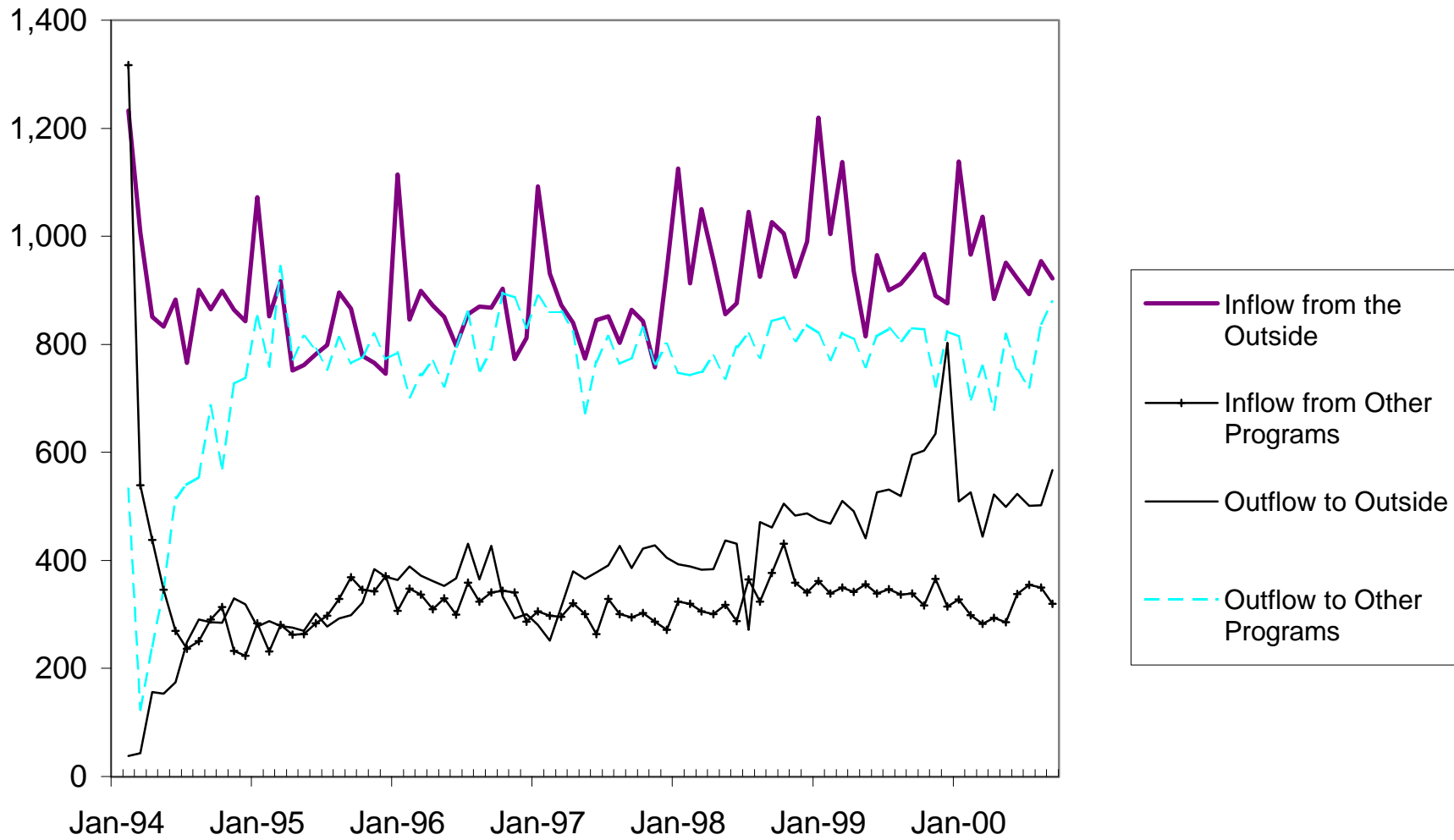
**Figure 3. Caseload Flows by Month  
Actual (Jan-94 to Sept-00), Group 1--TANF**



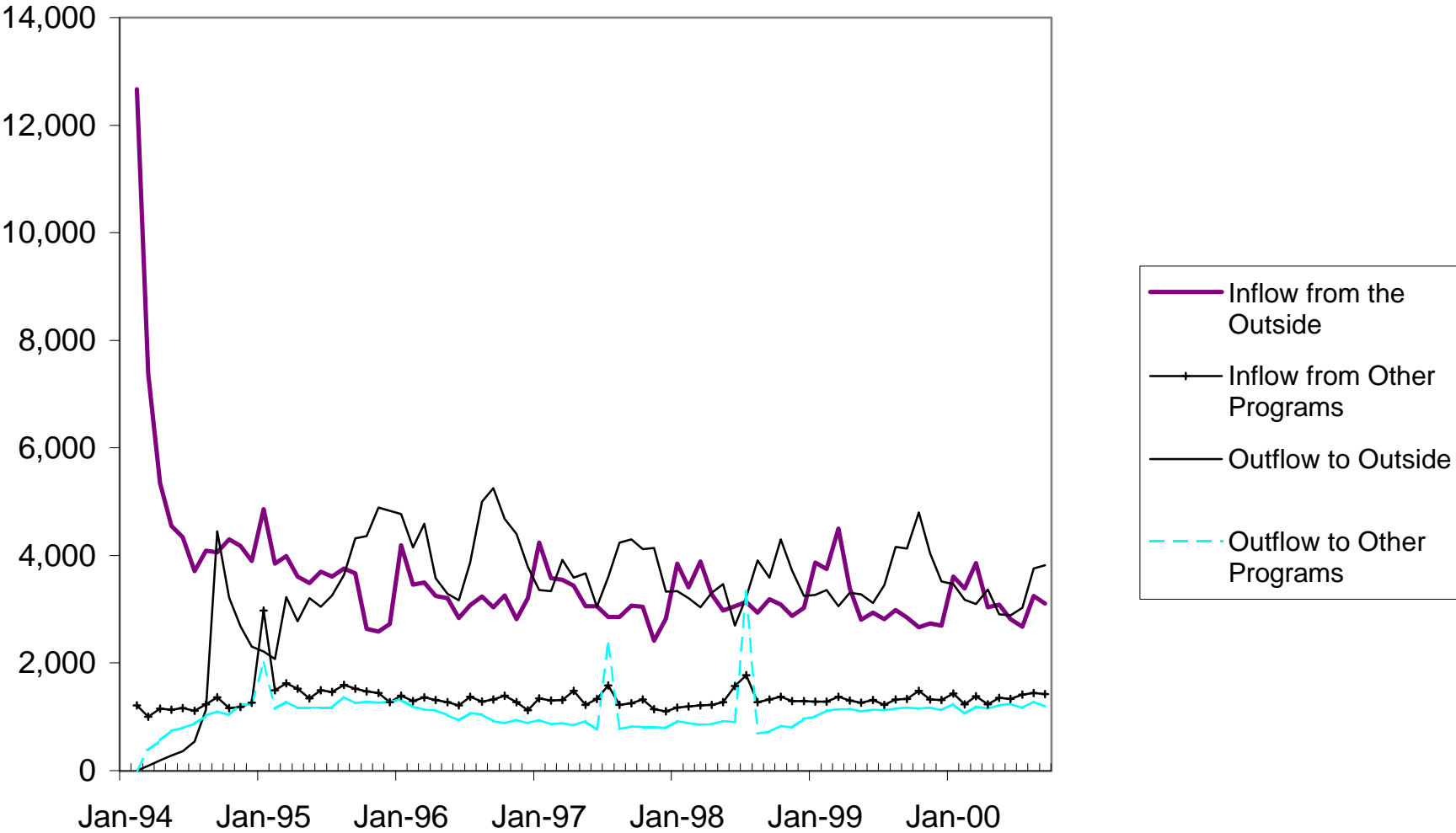
**Figure 4. Caseload Flows by Month  
Actual (Jan-94 to Sept-00), Group 2--GA**



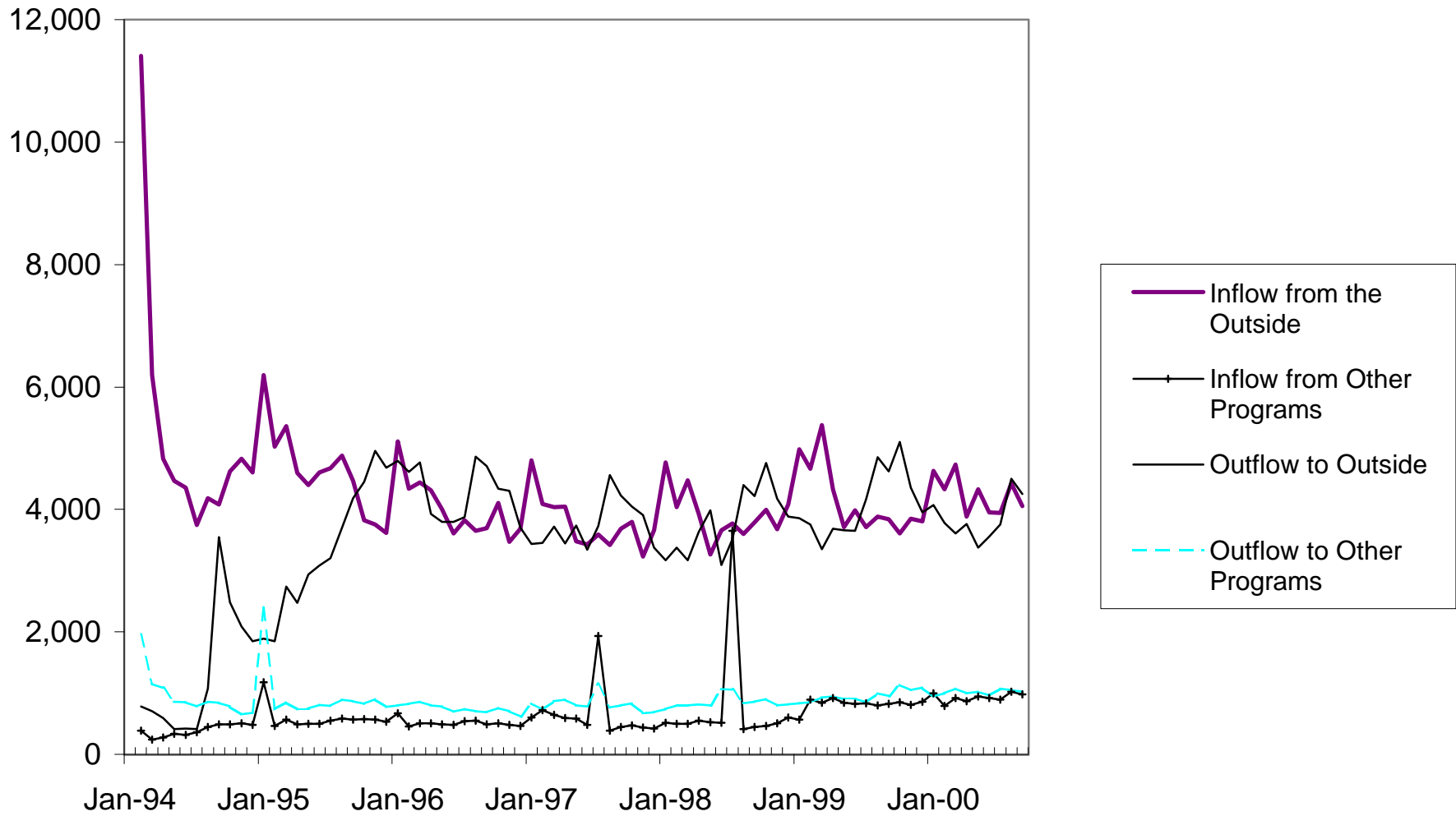
**Figure 5. Caseload Flows by Month  
Actual (Jan-94 to Sept-00), Group 3-- Pregnant Females**



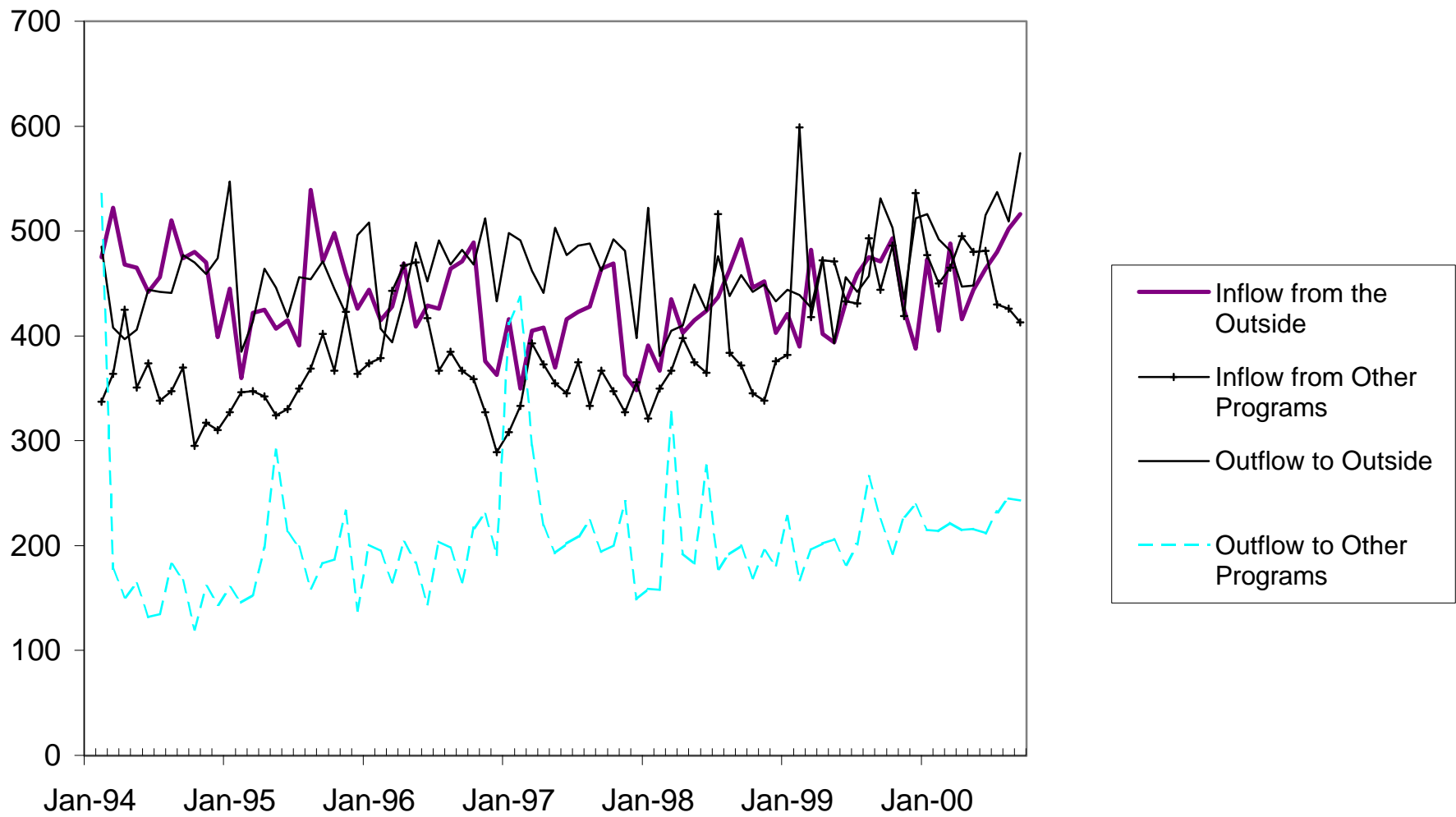
**Figure 6. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00), Group 4-- OHP Families (w/children)**



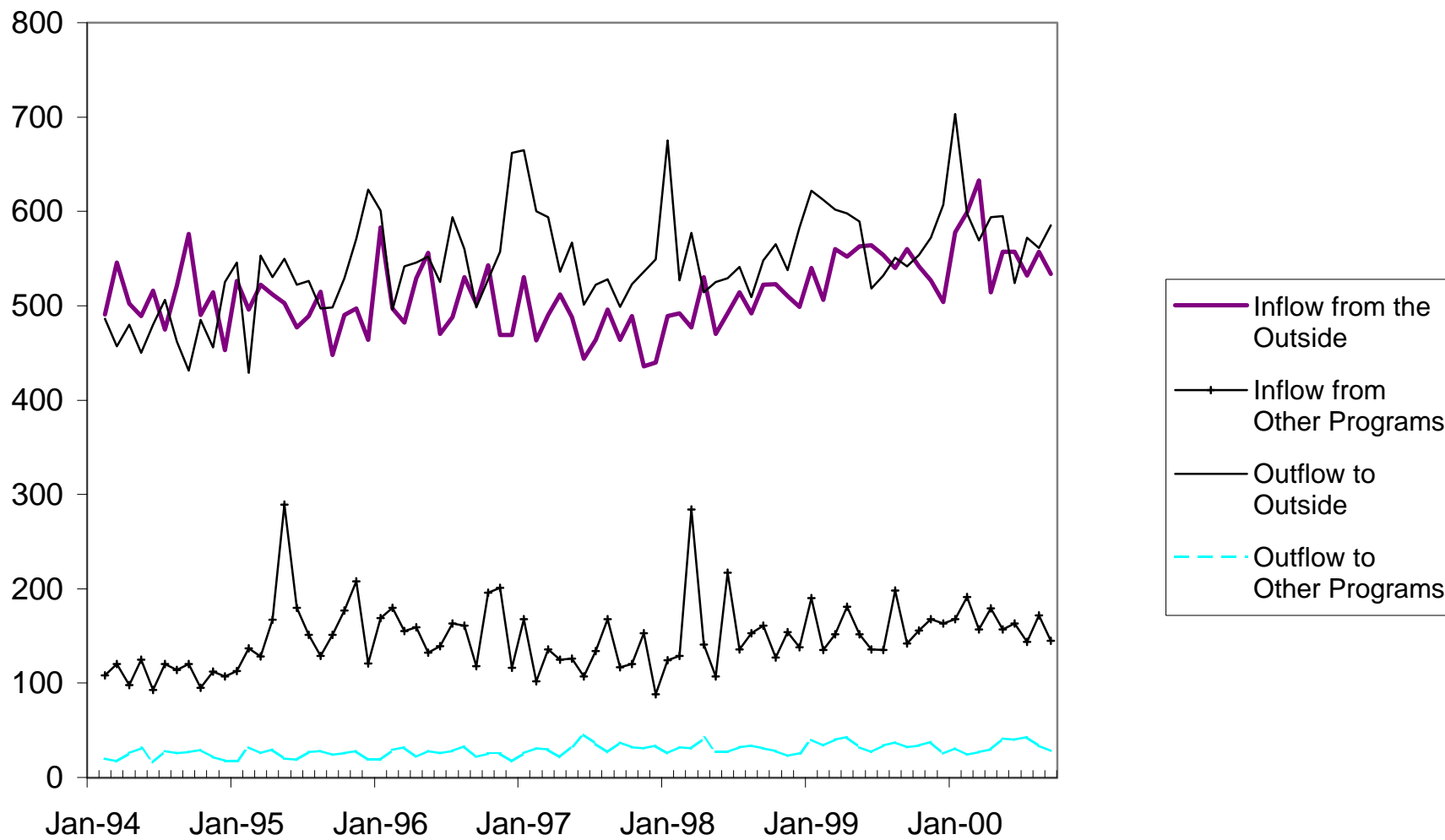
**Figure 7. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00), Group 5 -- OHP Adults (no children)**



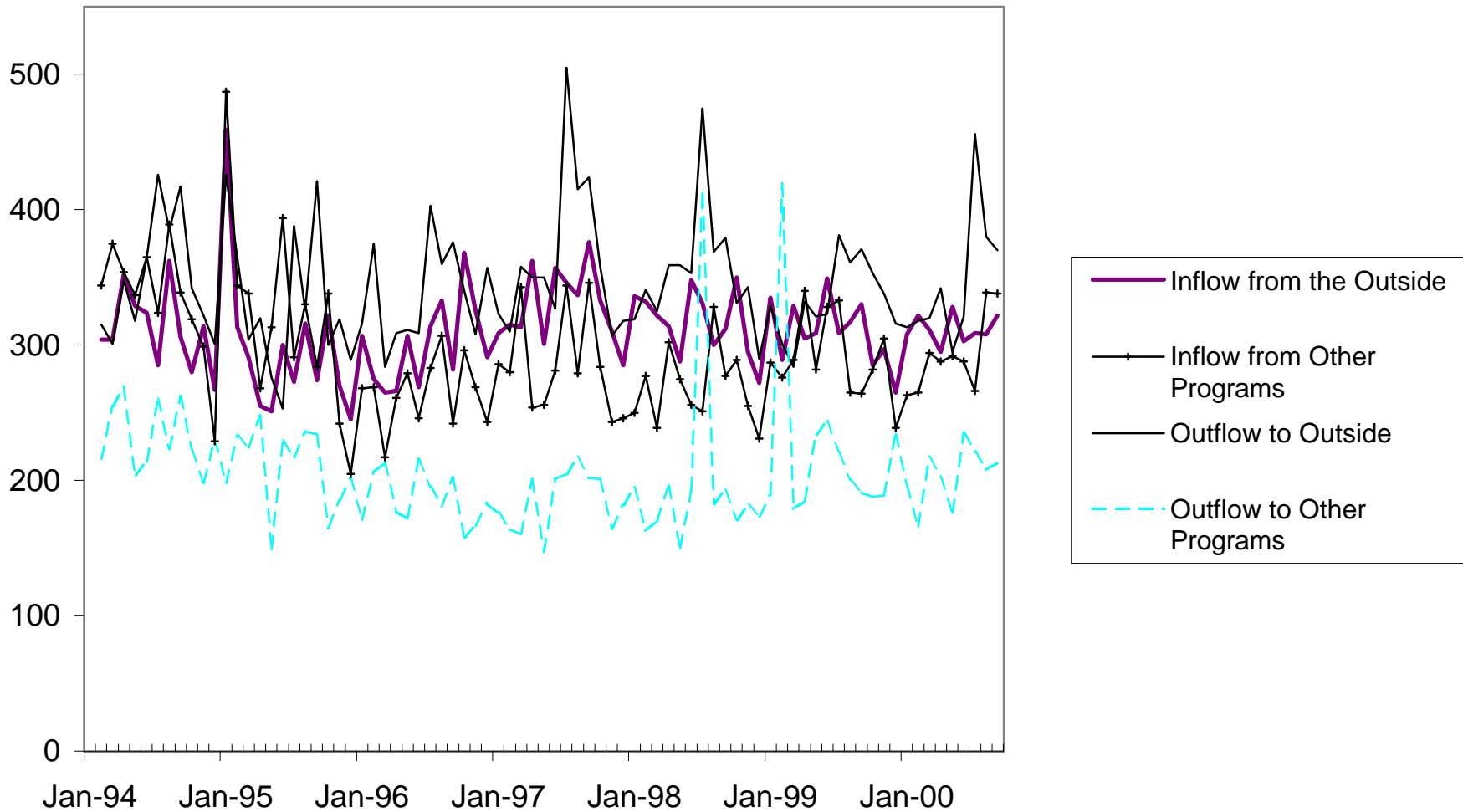
**Figure 8. Caseload Flows by Month  
Actual (Jan-94 to Sept-00), Group 6 -- AB/AD**



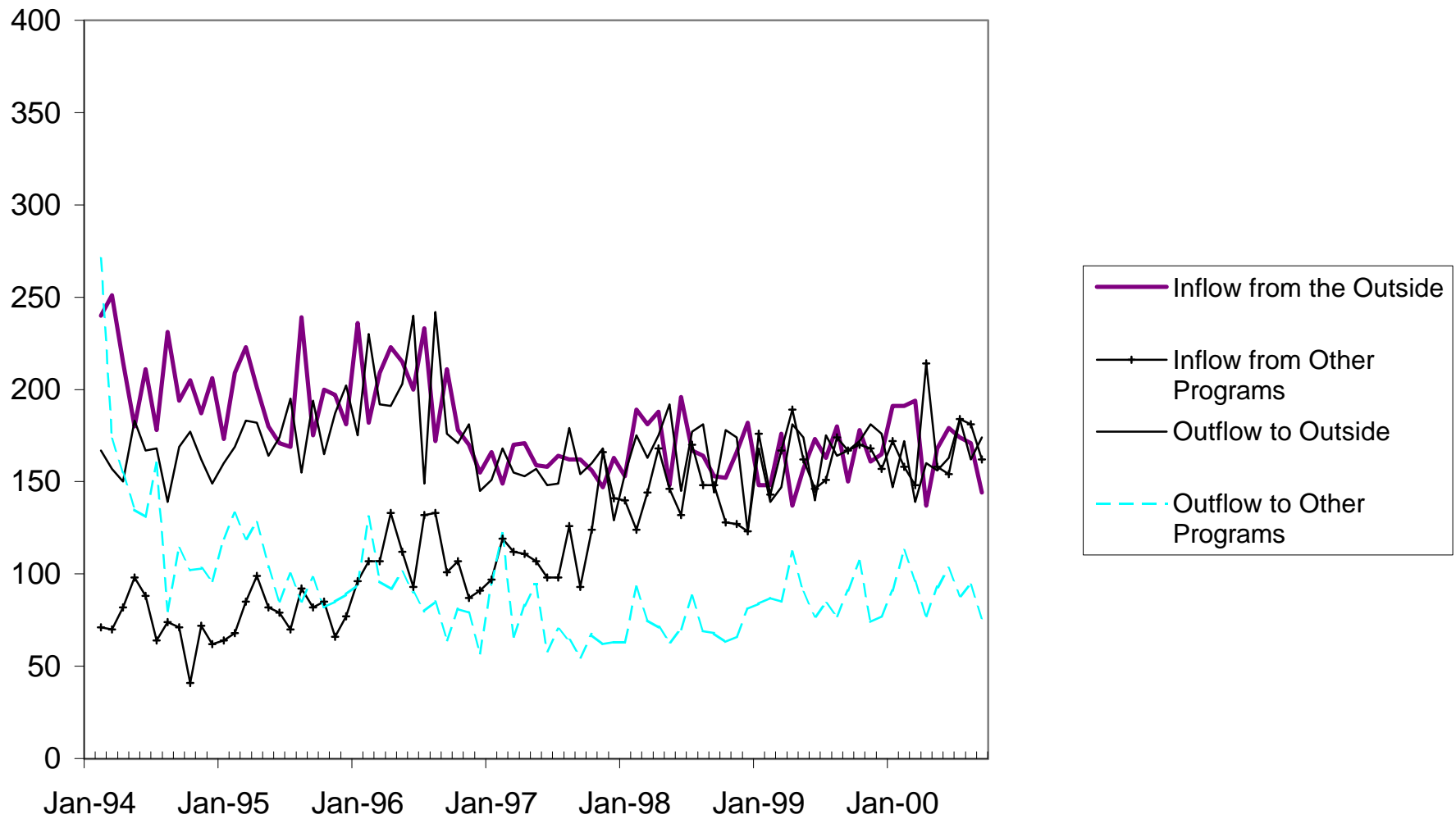
**Figure 9. Caseload Flows by Month  
Actual (Jan-94 to Sept-00), Group 7 -- OAA**



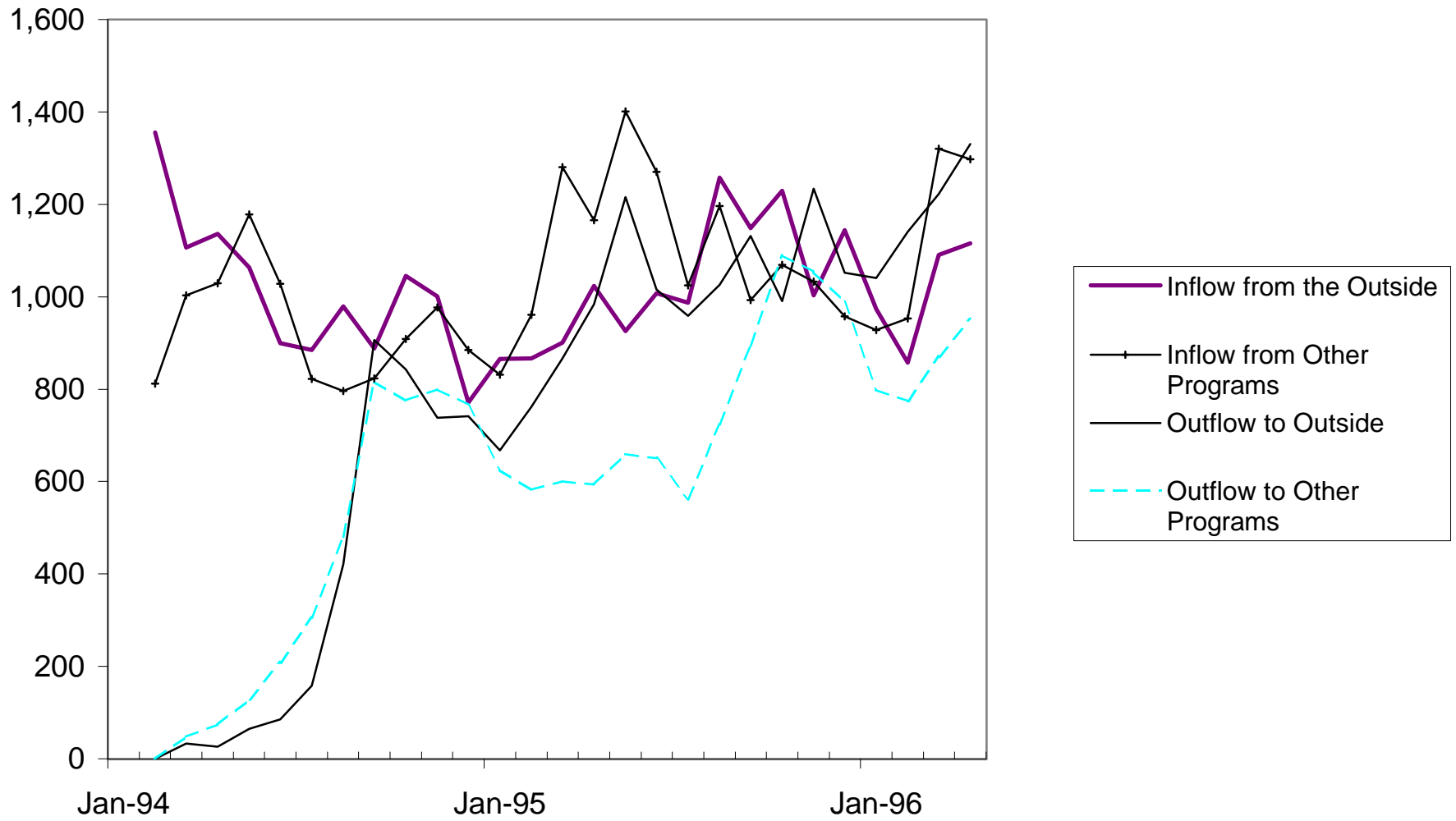
**Figure 10. Caseload Flows by Month  
Actual (Jan-94 to Sept-00), Group 8 -- Foster Children**



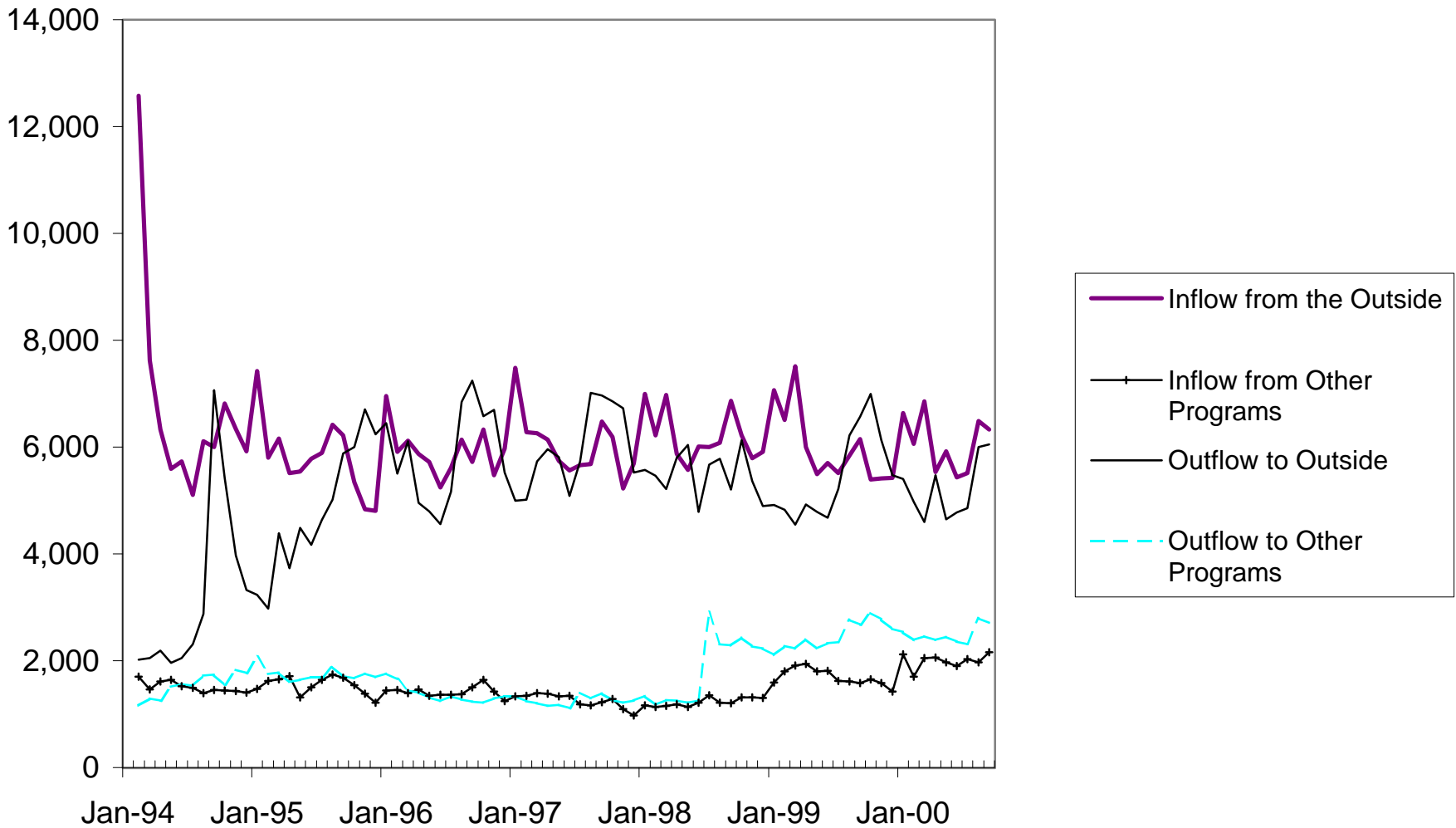
**Figure 11. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00), Group 9 -- Medically Needy**



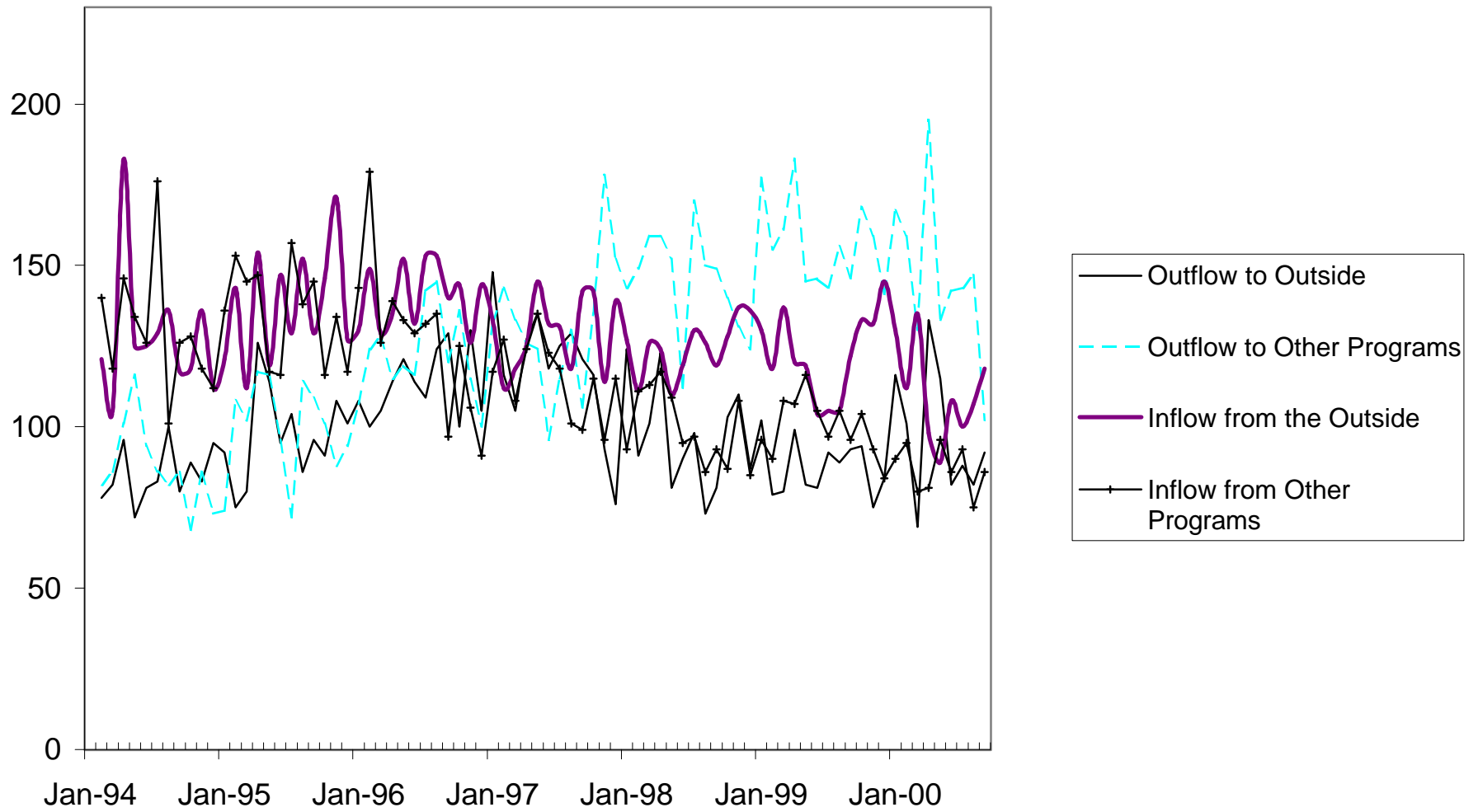
**Figure 12. Caseload Flows by Month  
Actual (July-98 to Sept-00), Group 10 -- CHIP**



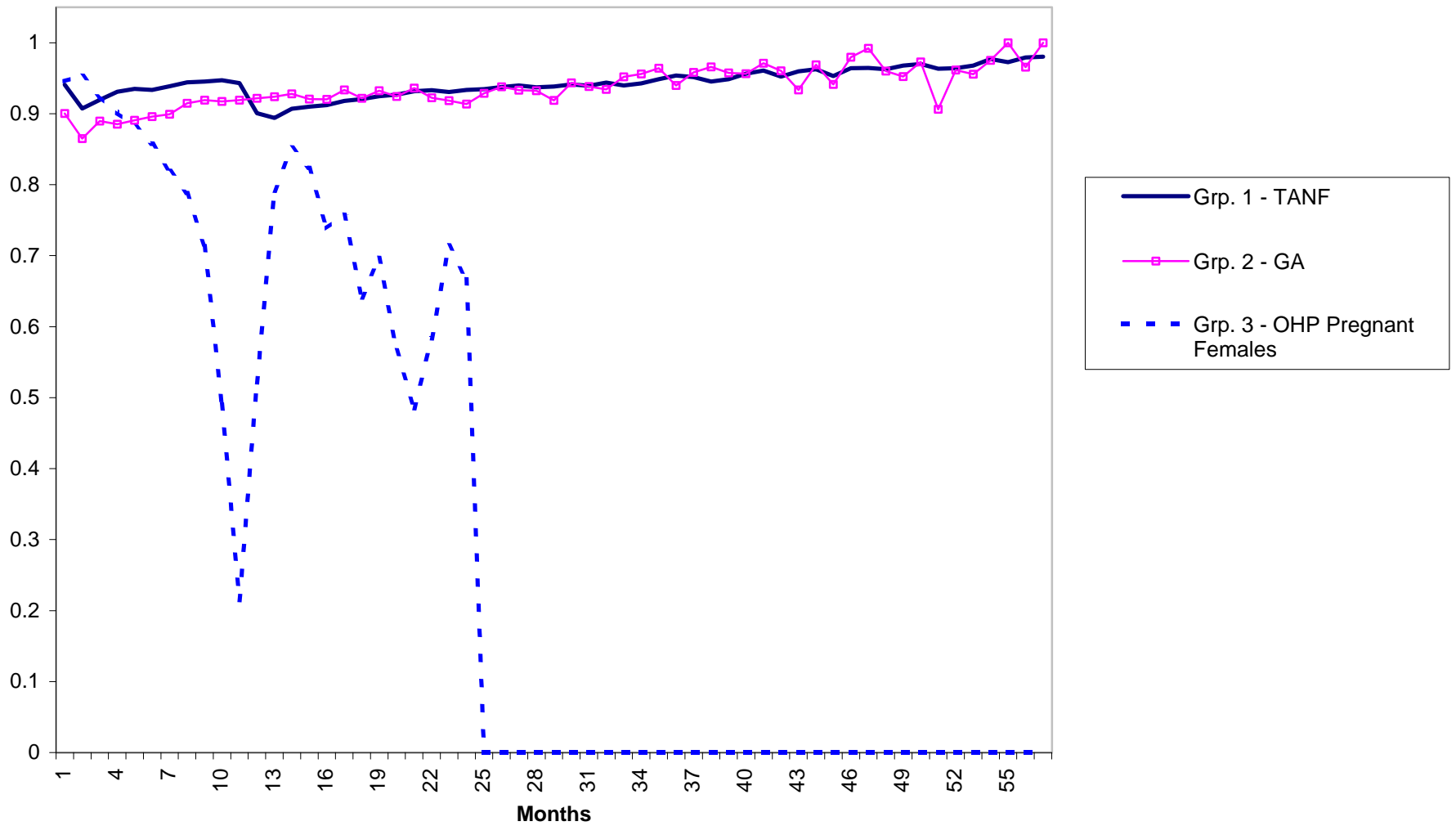
**Figure 13. Caseload Flows by Month  
Actual (Jan-94 to Sept-00), Group 11 -- OHP Kids**



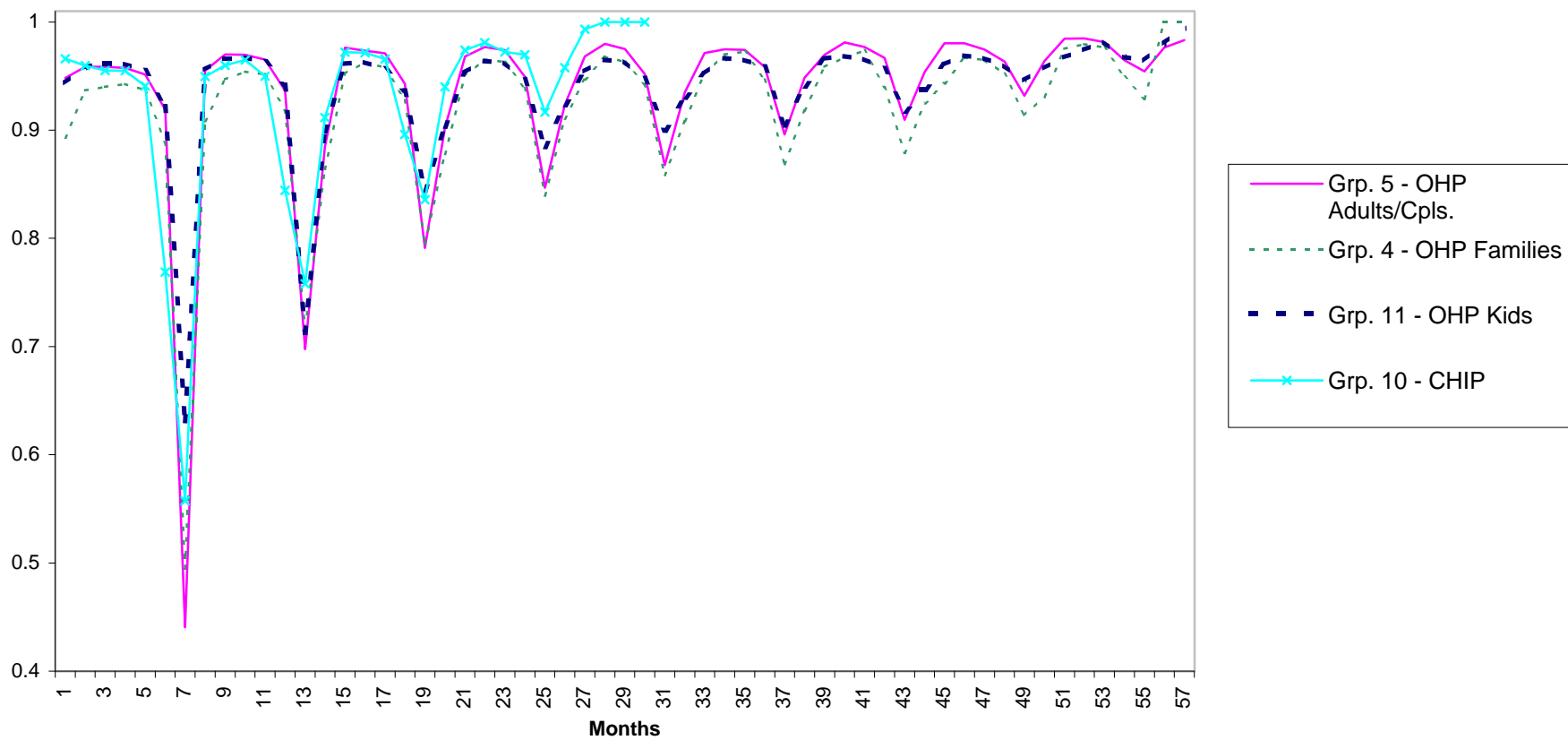
**Figure 14. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00), Group 12 -- Qualified Medicare Beneficiary (QMB)**



**Figure 15. Actual Conditional Survival Curves, January 1996 to September 2000  
(Program Groups 1,2, and 3)**



**Figure 16. Actual Conditional Survival Curves, January 1996 to September 2000  
(Program Groups 4, 5, 10 and 11)**



**Figure 17. Actual Conditional Survival Curves, January 1996 to September 2000  
(Program Groups 6 - 9, 12)**

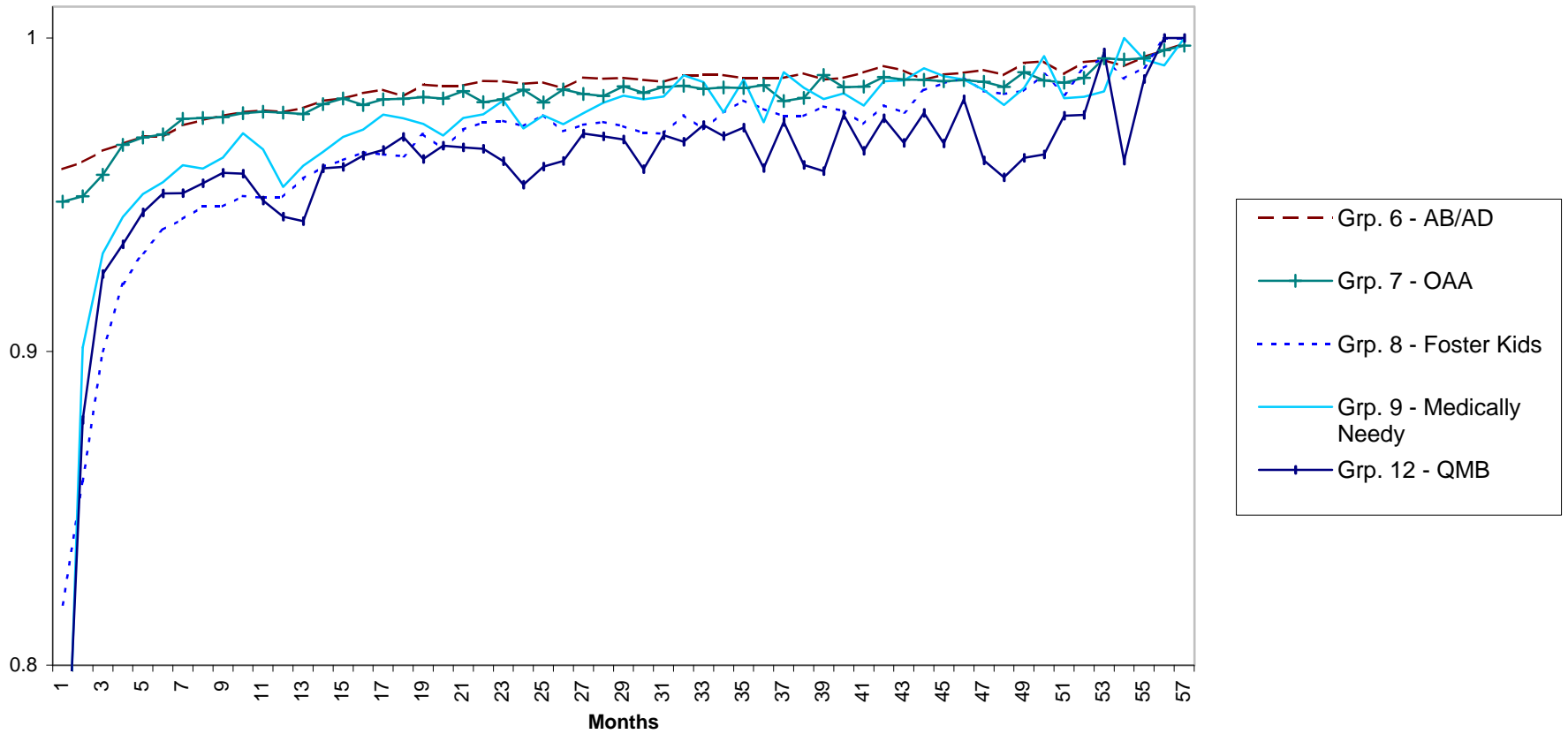
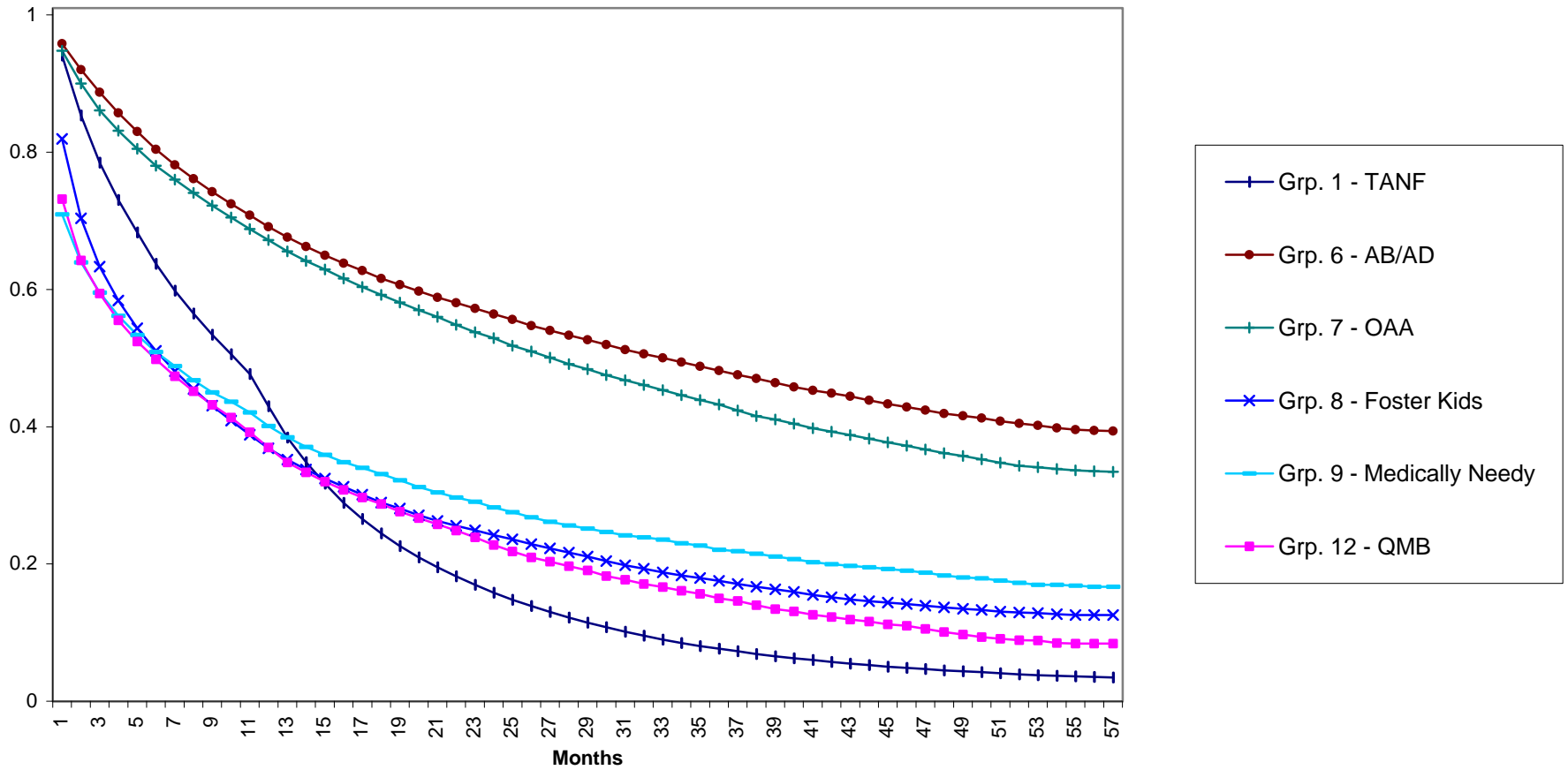
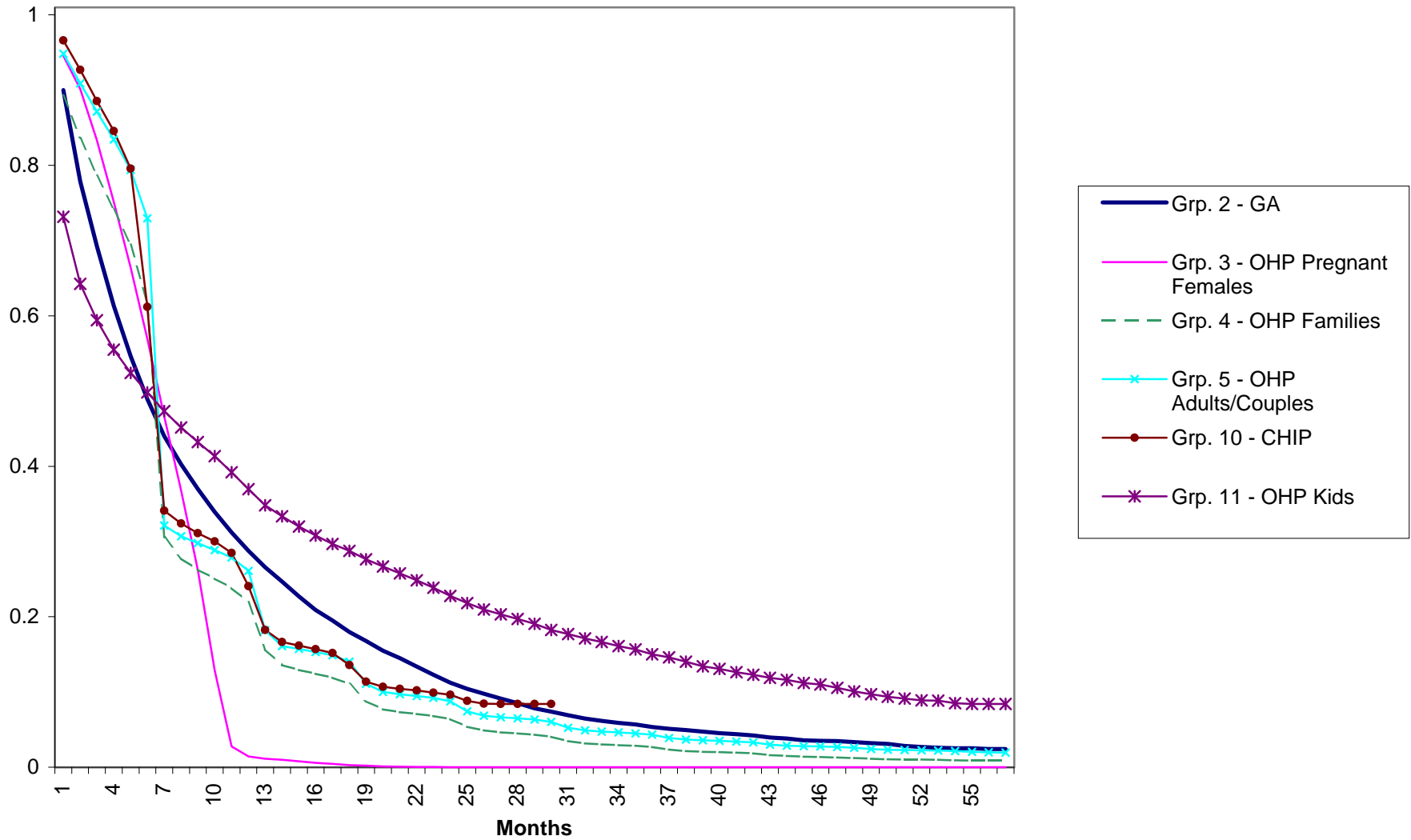


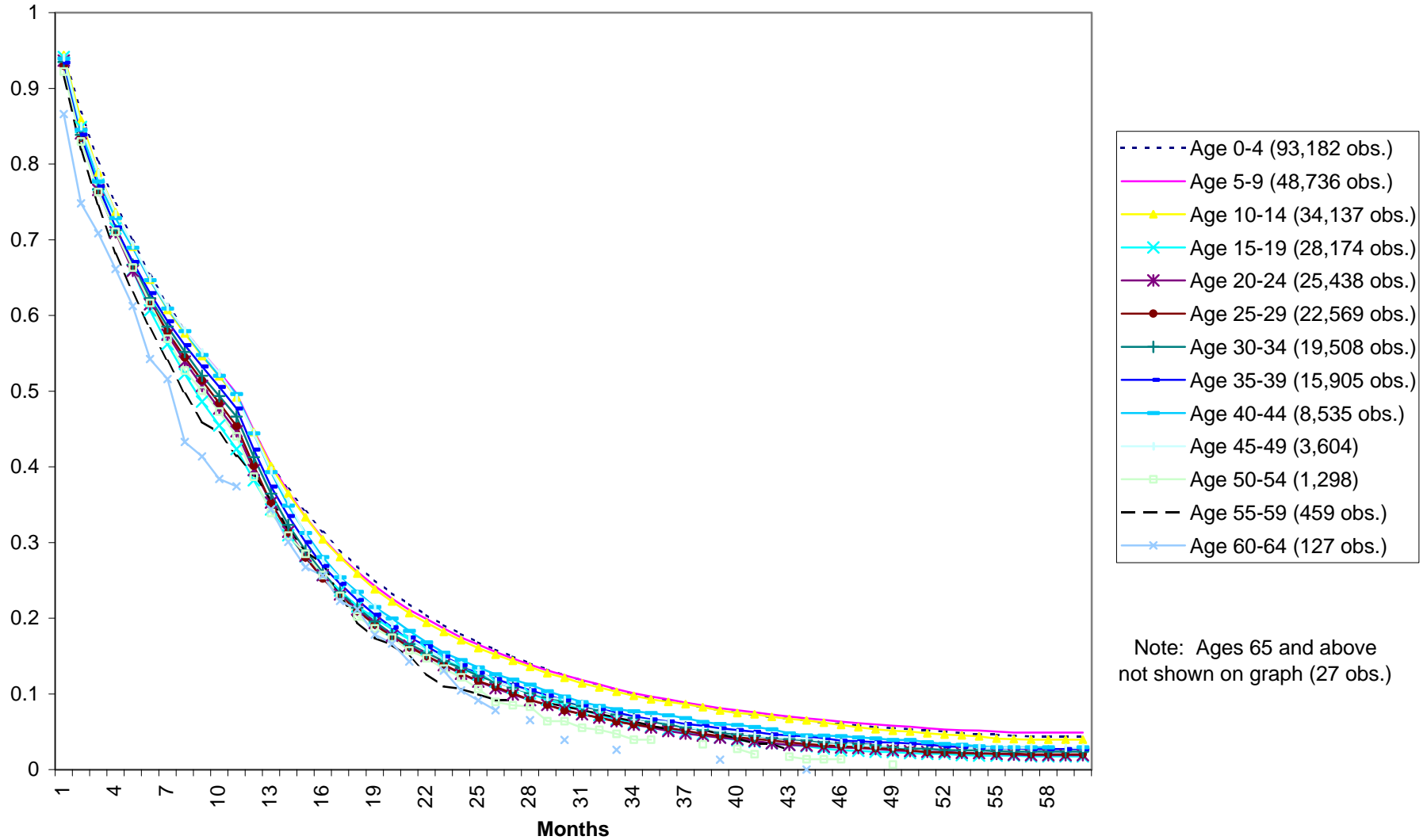
Figure 18. Unconditional Survival Curves, January 1996 to September 2000  
(Program Groups 1, 6 - 9 and 12)



**Figure 19. Unconditional Survival Curves, January 1996 to September 2000  
(Program Groups 2 - 5, 10, and 11)**

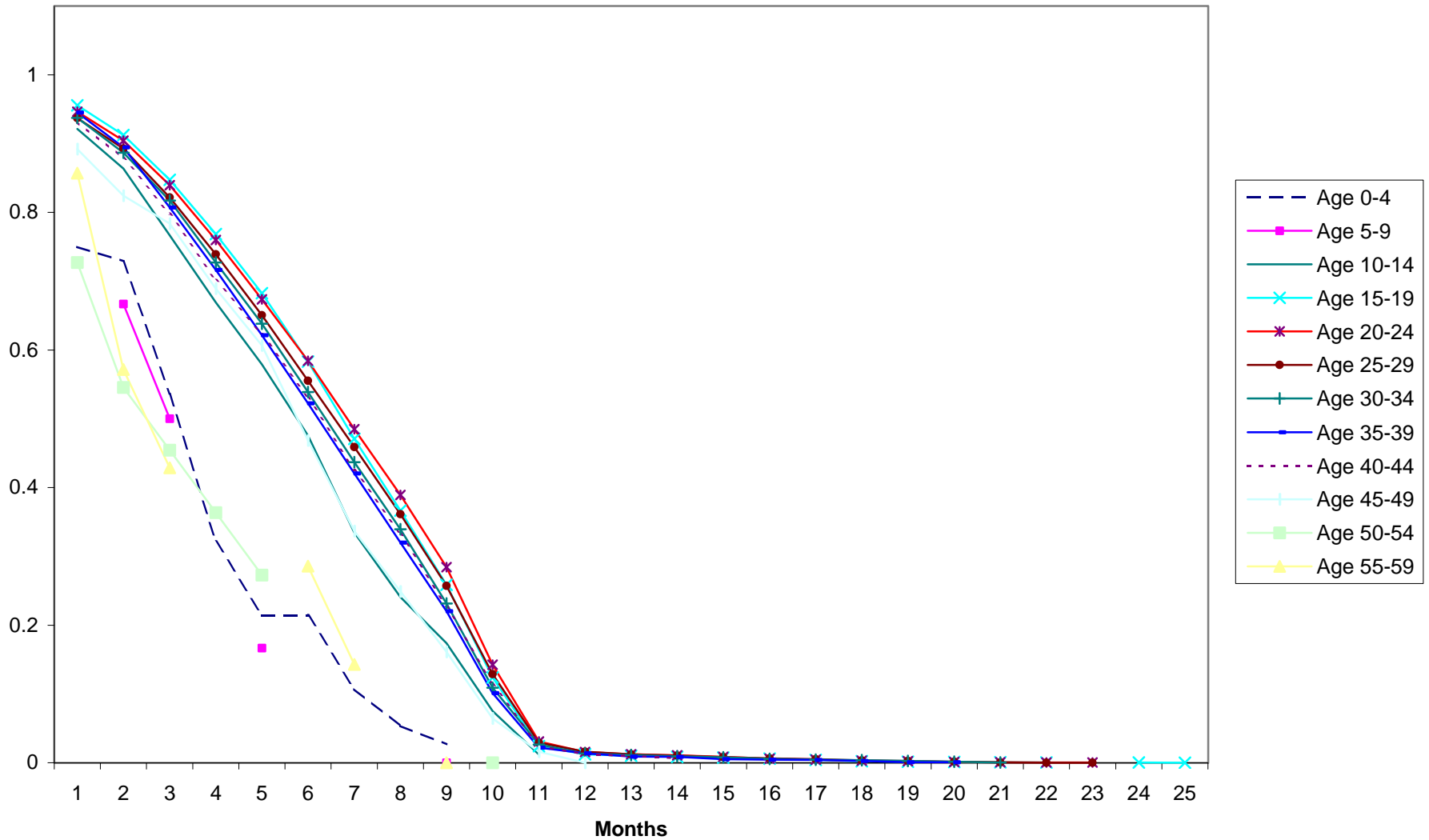


**Figure 20. Survival Rates Since 1996 by Age Group for Program Group 1 - TANF**

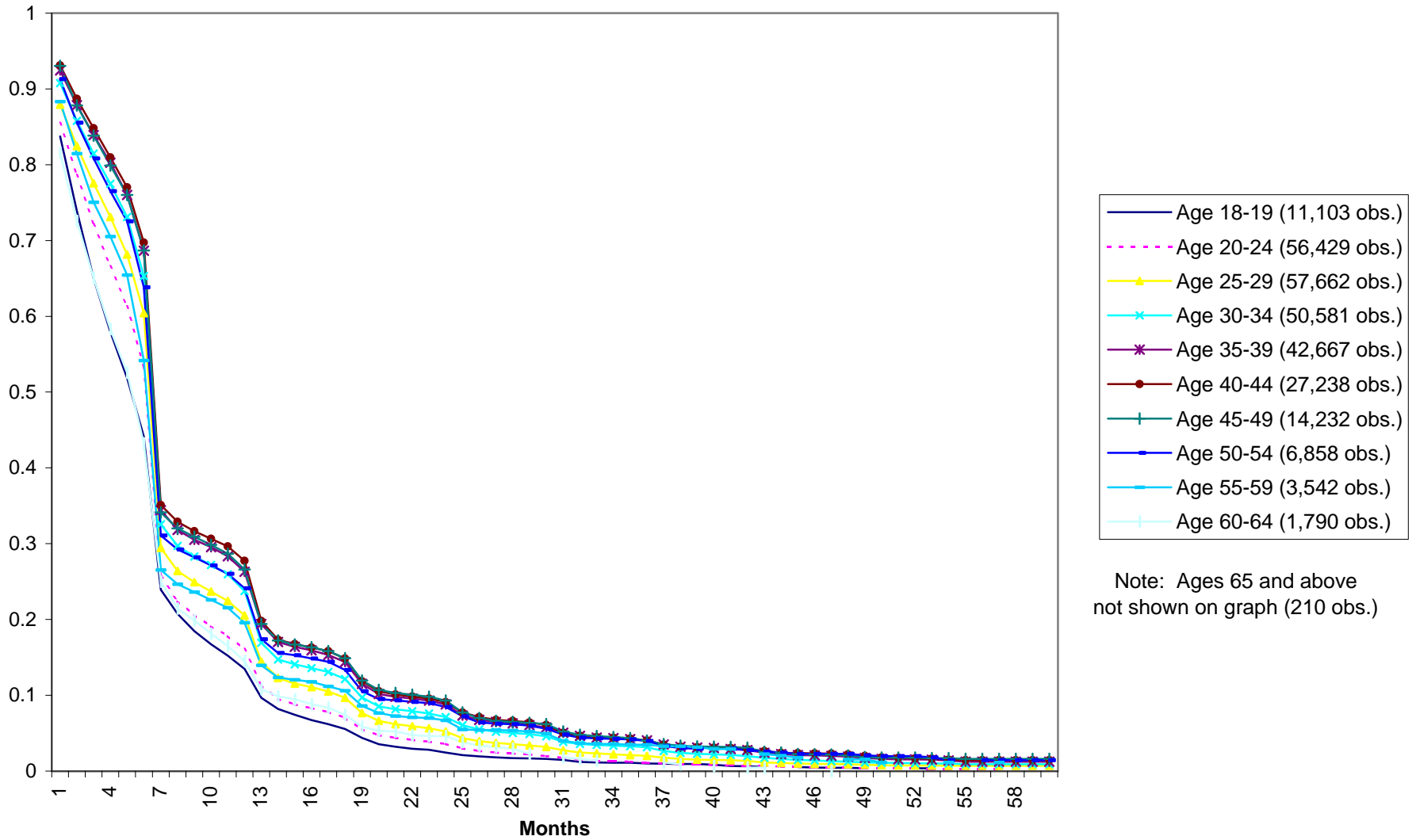




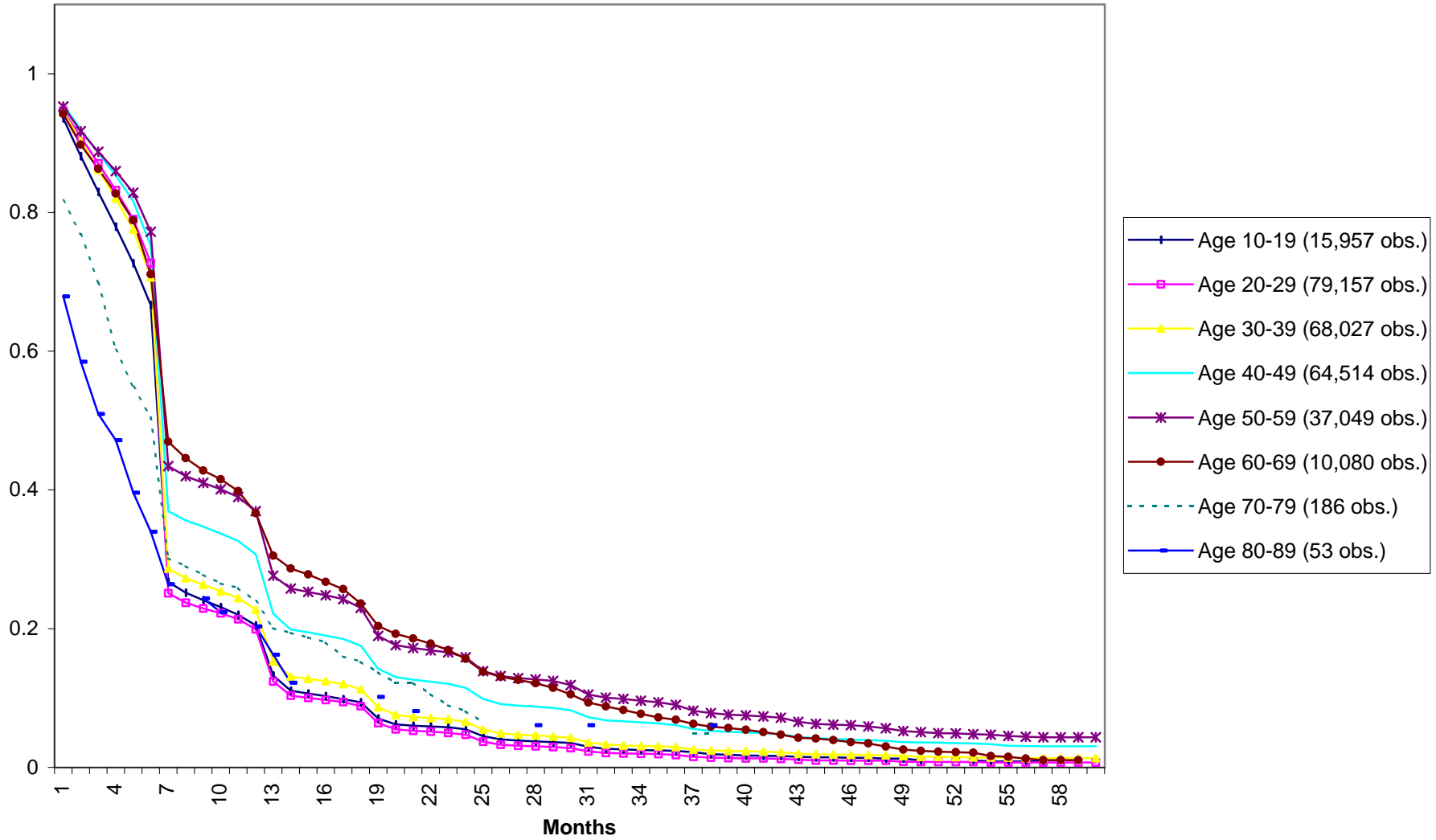
**Figure 22. Survival Rates by Age Group  
for Program Group 3 - OHP Pregnant Females**



**Figure 23. Survival Rates Since 1996 by Age Group for Program Group 4 - OHP Families**



**Figure 24. Survival Rates Since 1996 by Age Group for Program Group 5 - OHP Adults and Couples**



**Figure 25. Survival Rates Since 1996 by Age Group for Program Group 6 - Aid to the Blind/Aid to the Disabled**

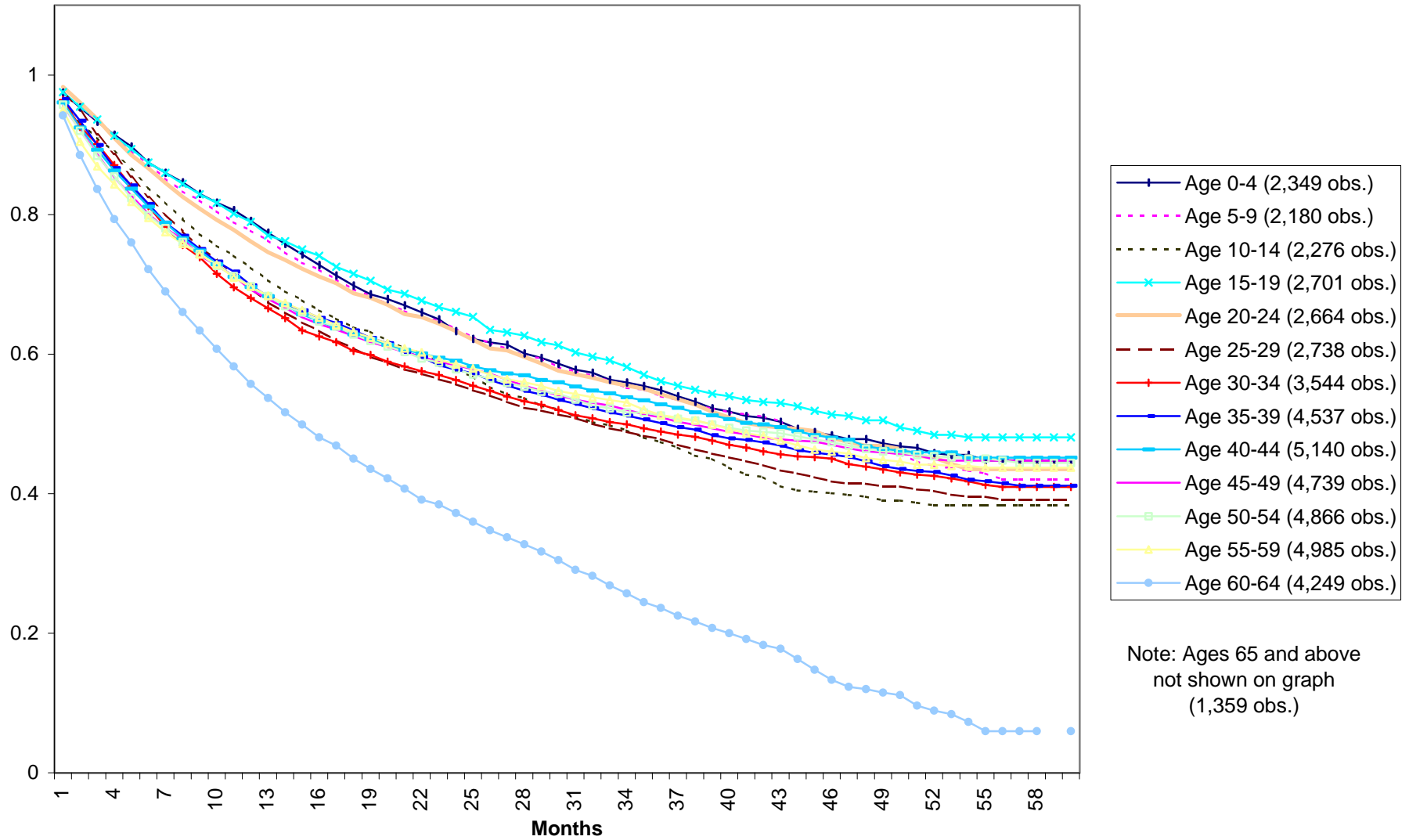
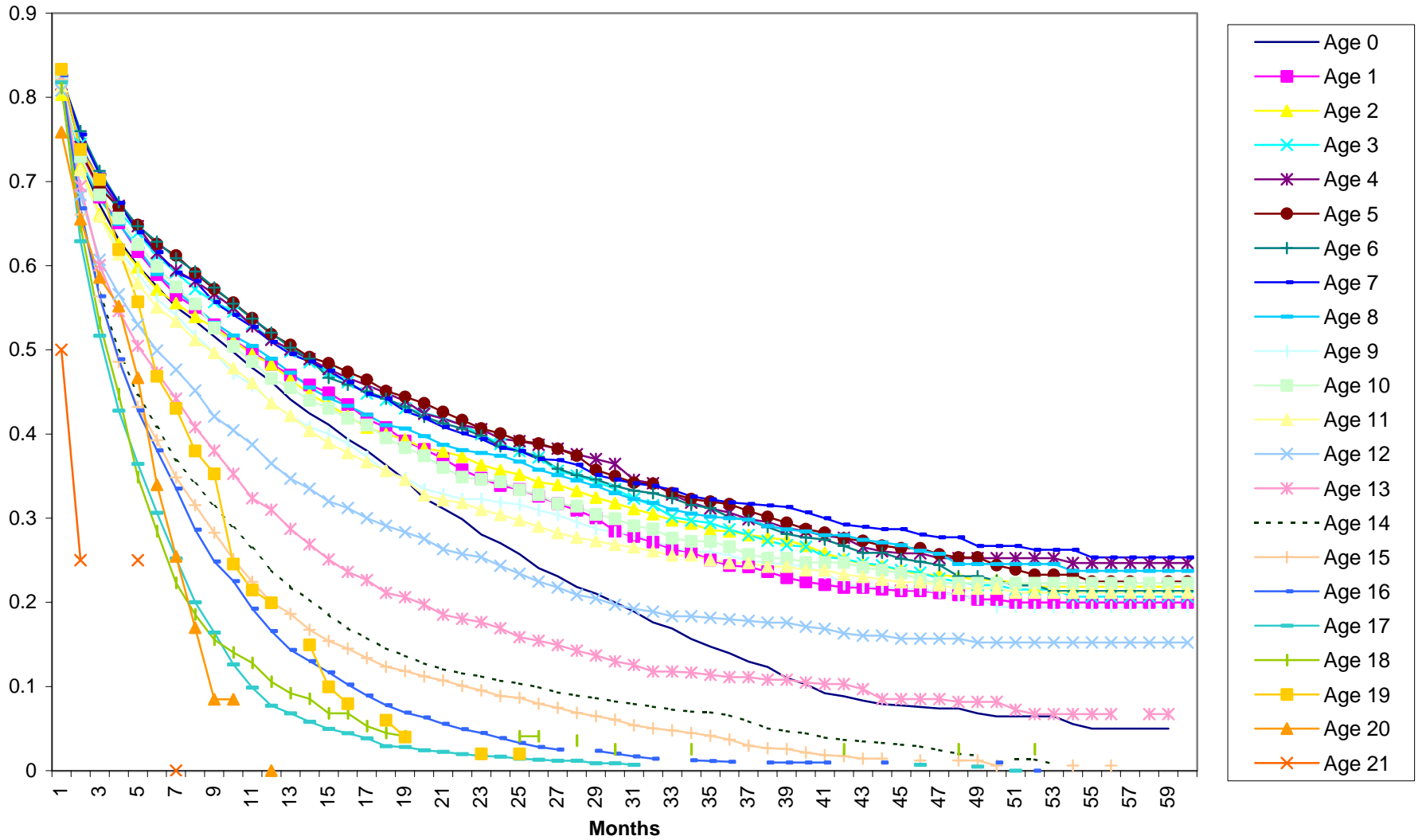
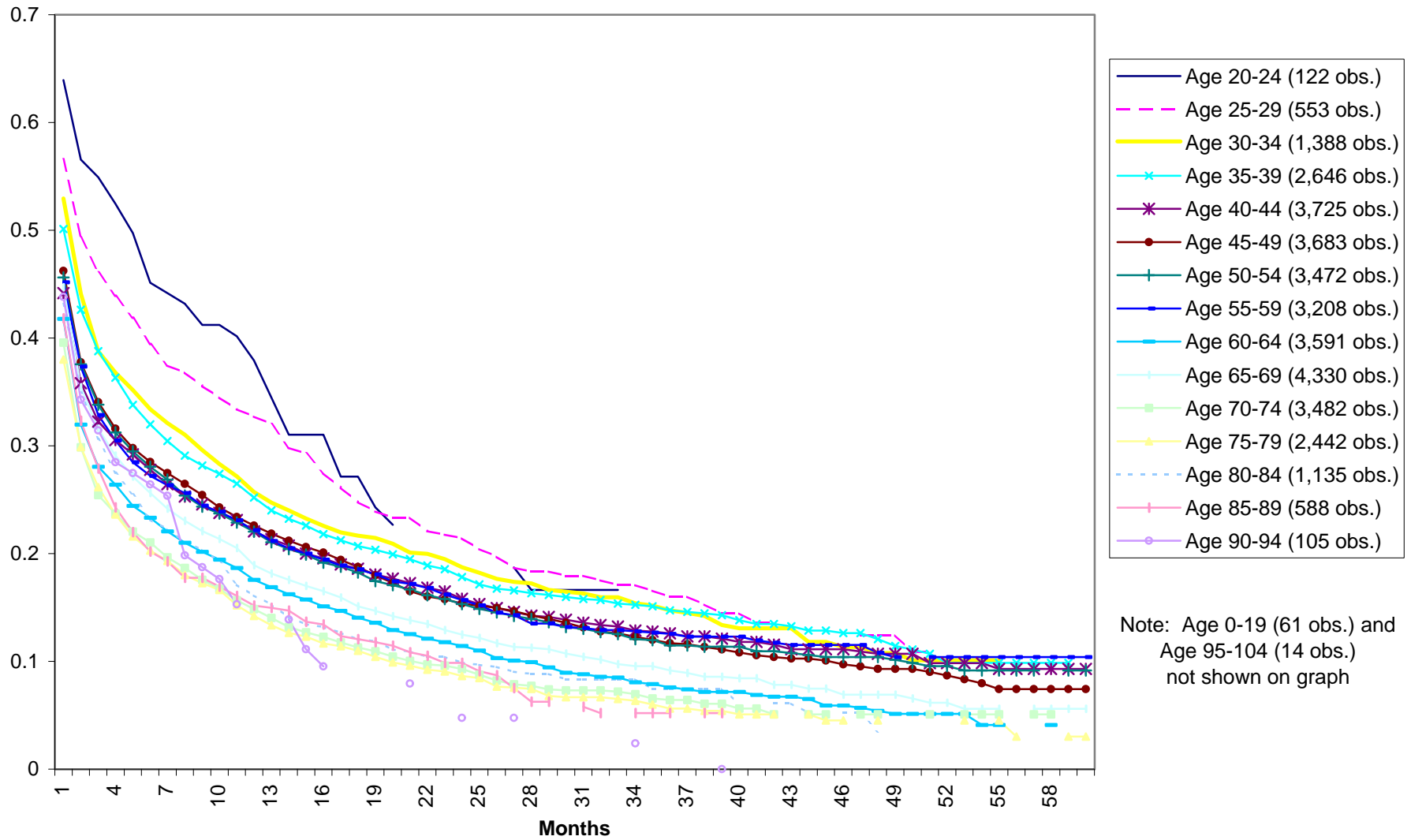




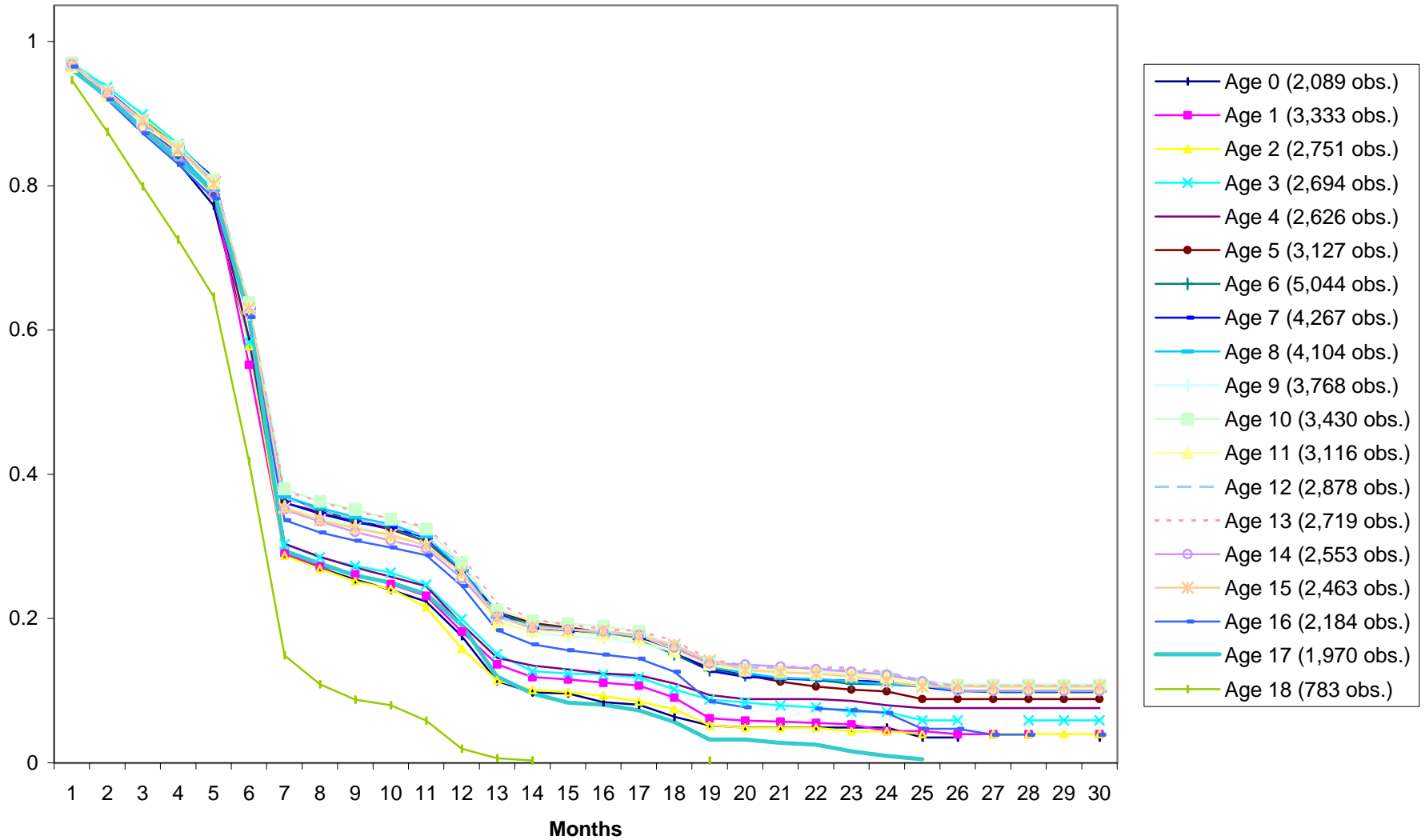
Figure 27. Survival Rates by Age  
for OMAP Program Group 8 - Foster Children



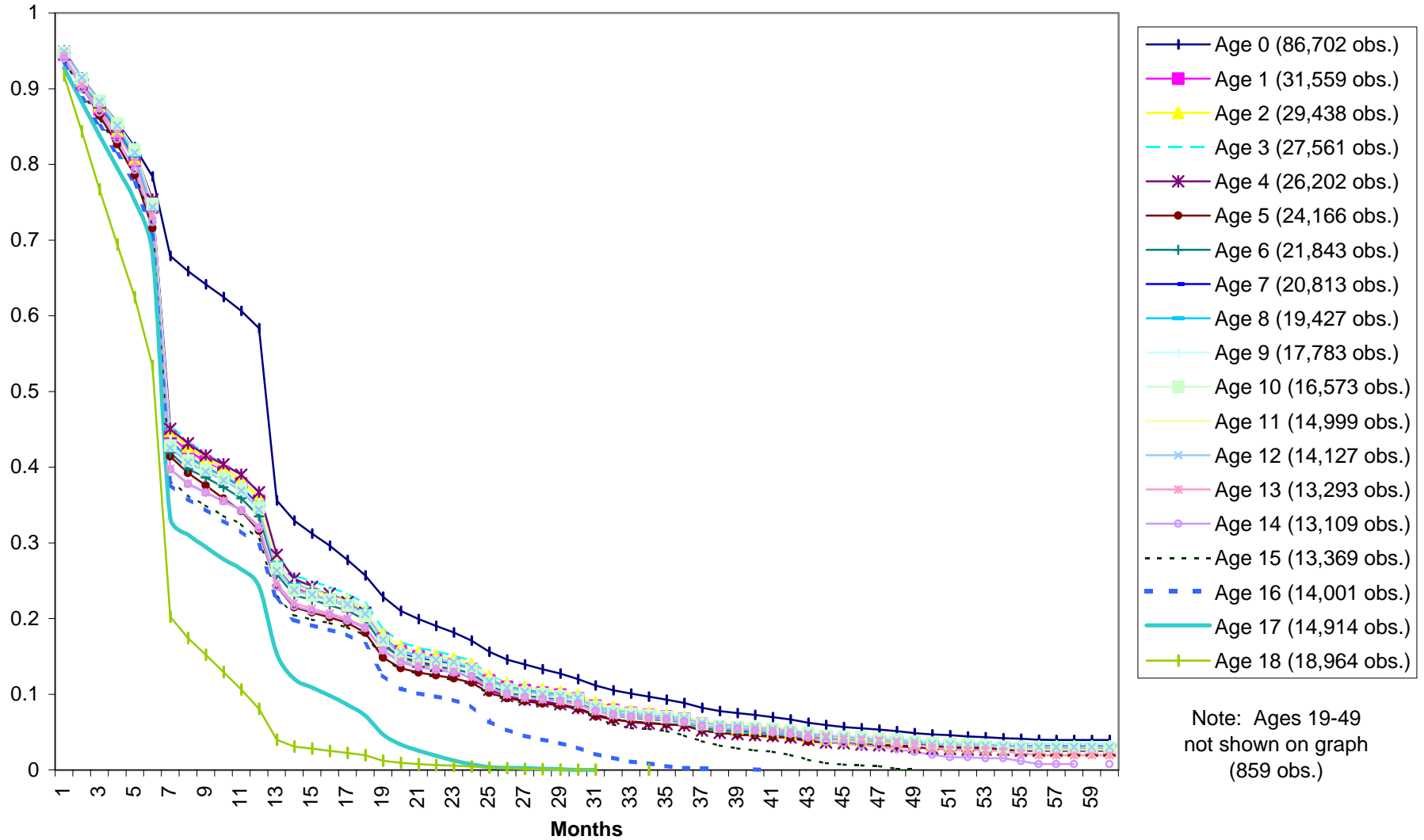
**Figure 28. Survival Rates by Age Group Since 1996  
for Program Group 9 - Medically Needy**



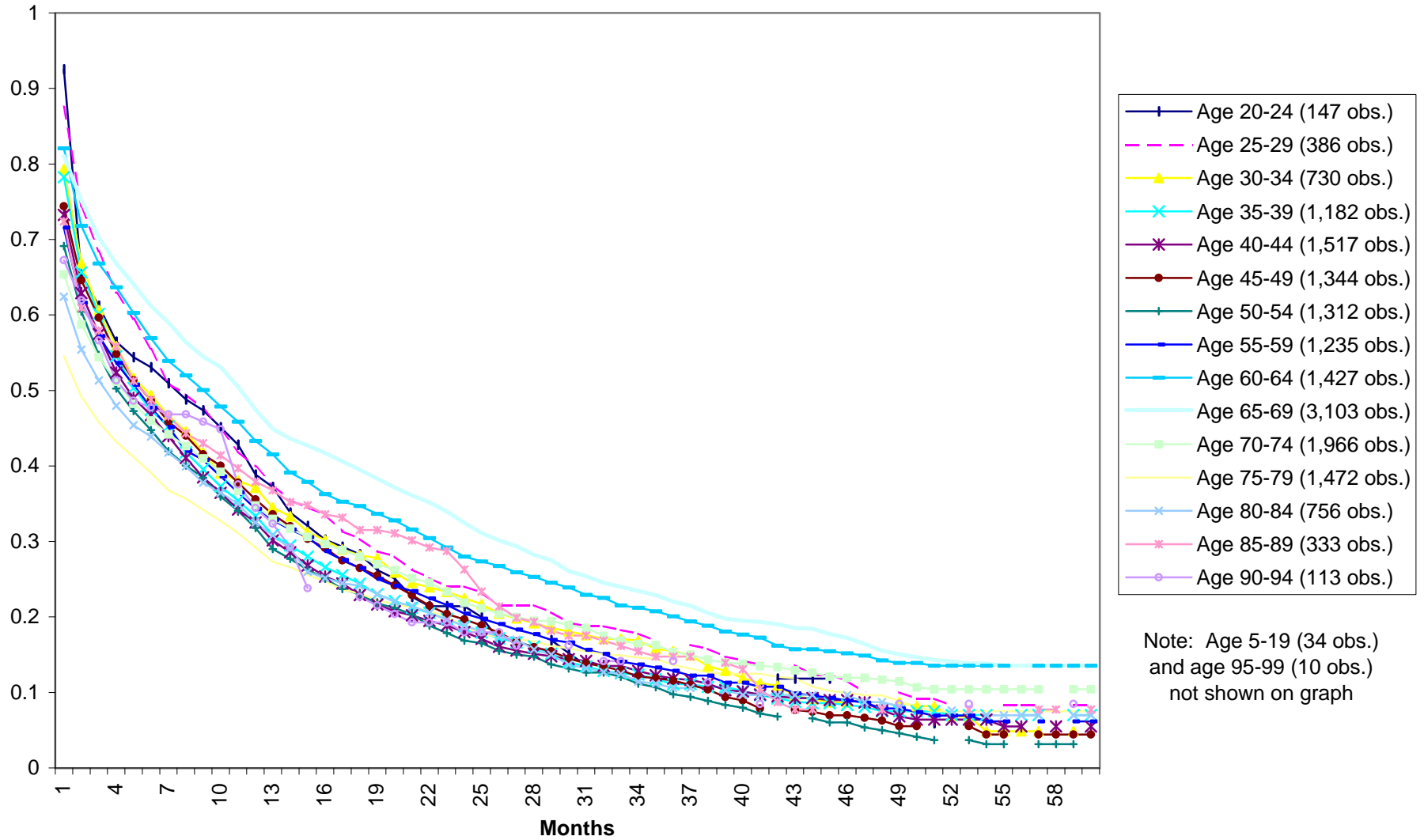
**Figure 29. Survival Rates by Age Group Since 1996  
for Program Group 10 - CHIP**



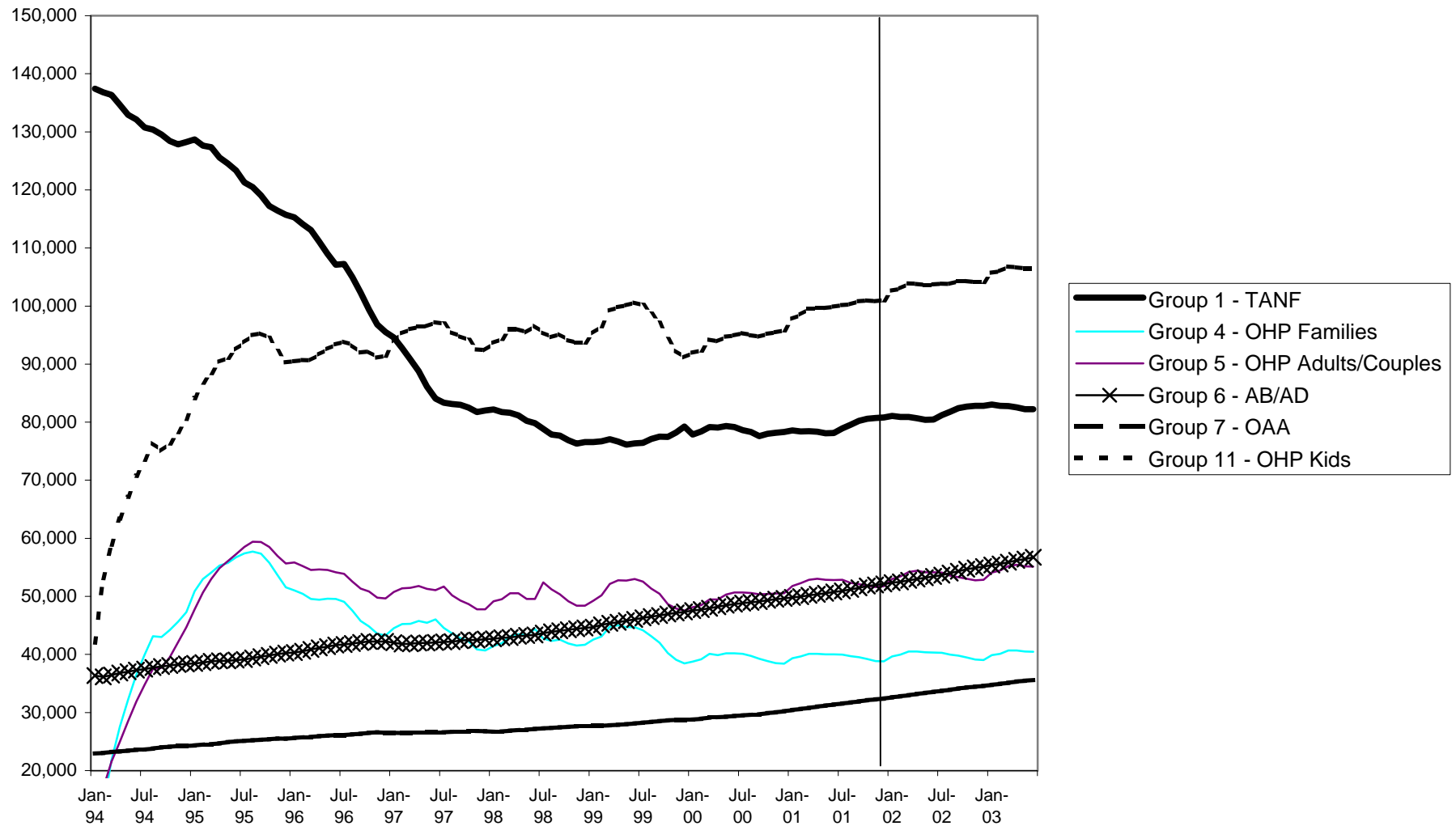
**Figure 30. Survival Rates Since 1996 by Age Group  
for Program Group 11 - OHP Children**



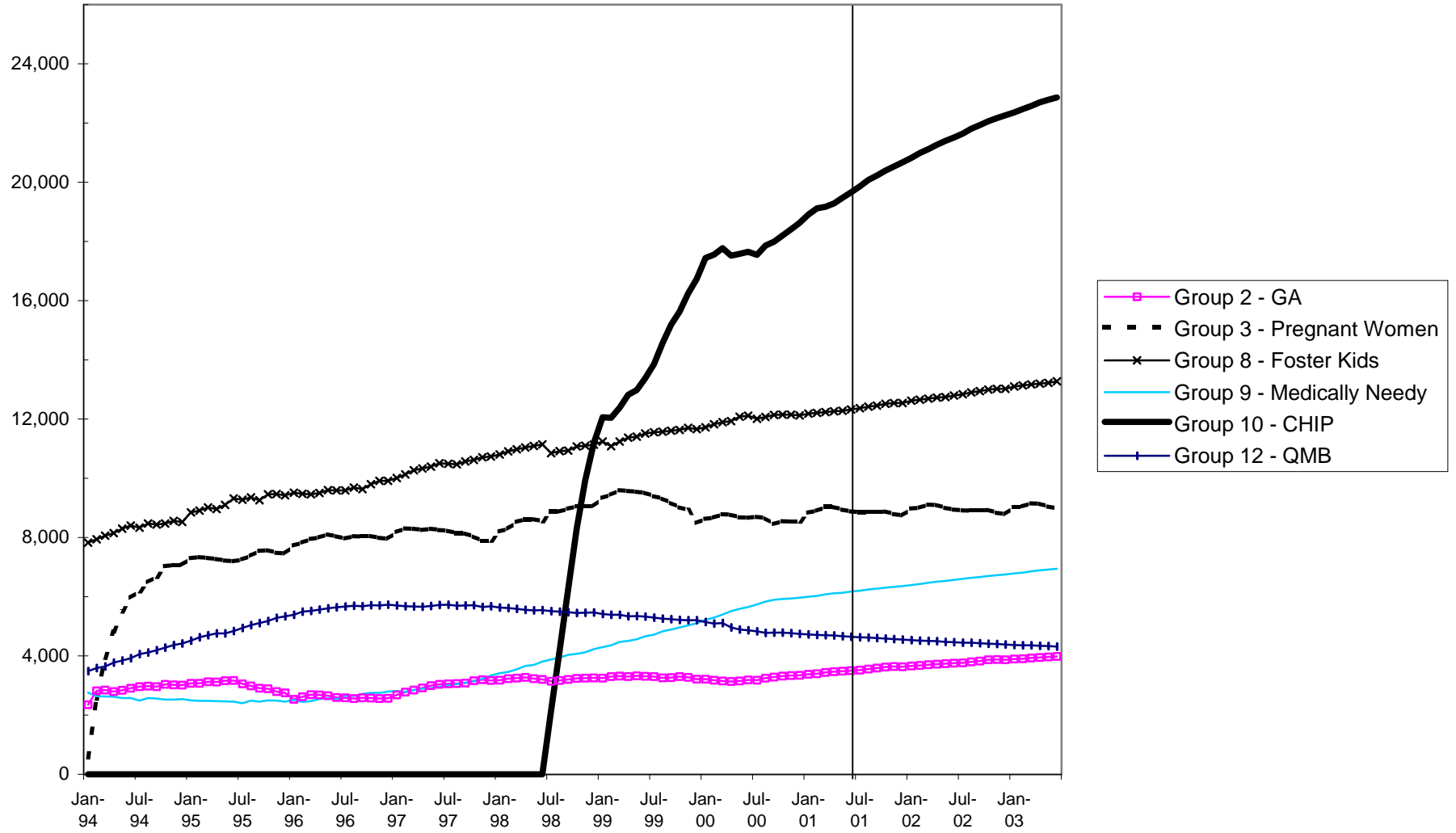
**Figure 31. Survival Rates Since 1996 by Age Group  
for Program Group 12 - QMB**



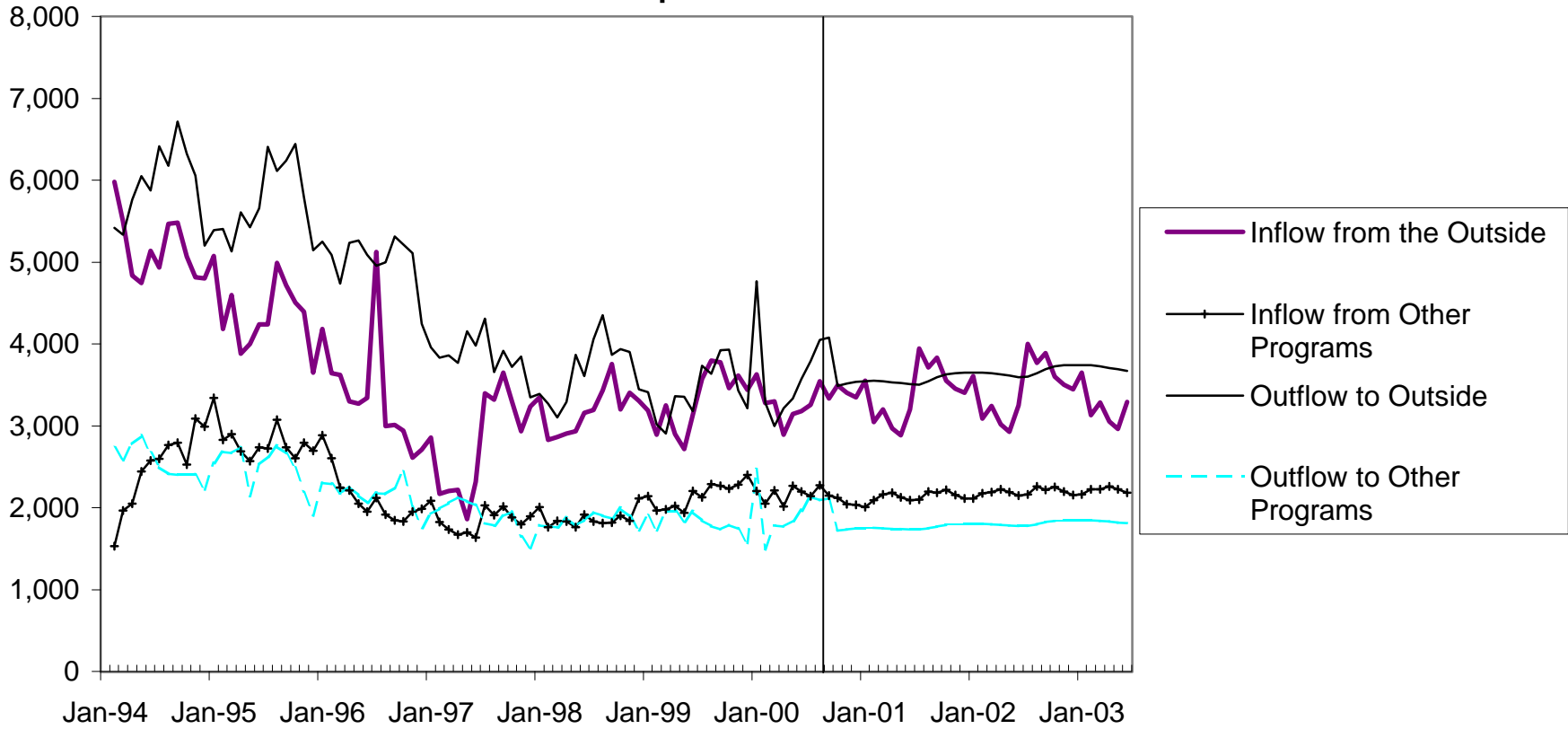
**Figure 32. Actual and Forecasted Caseloads OMAP Program Groups  
January 1994 to June 2003 (Program Groups 1, 4-7, 11)**



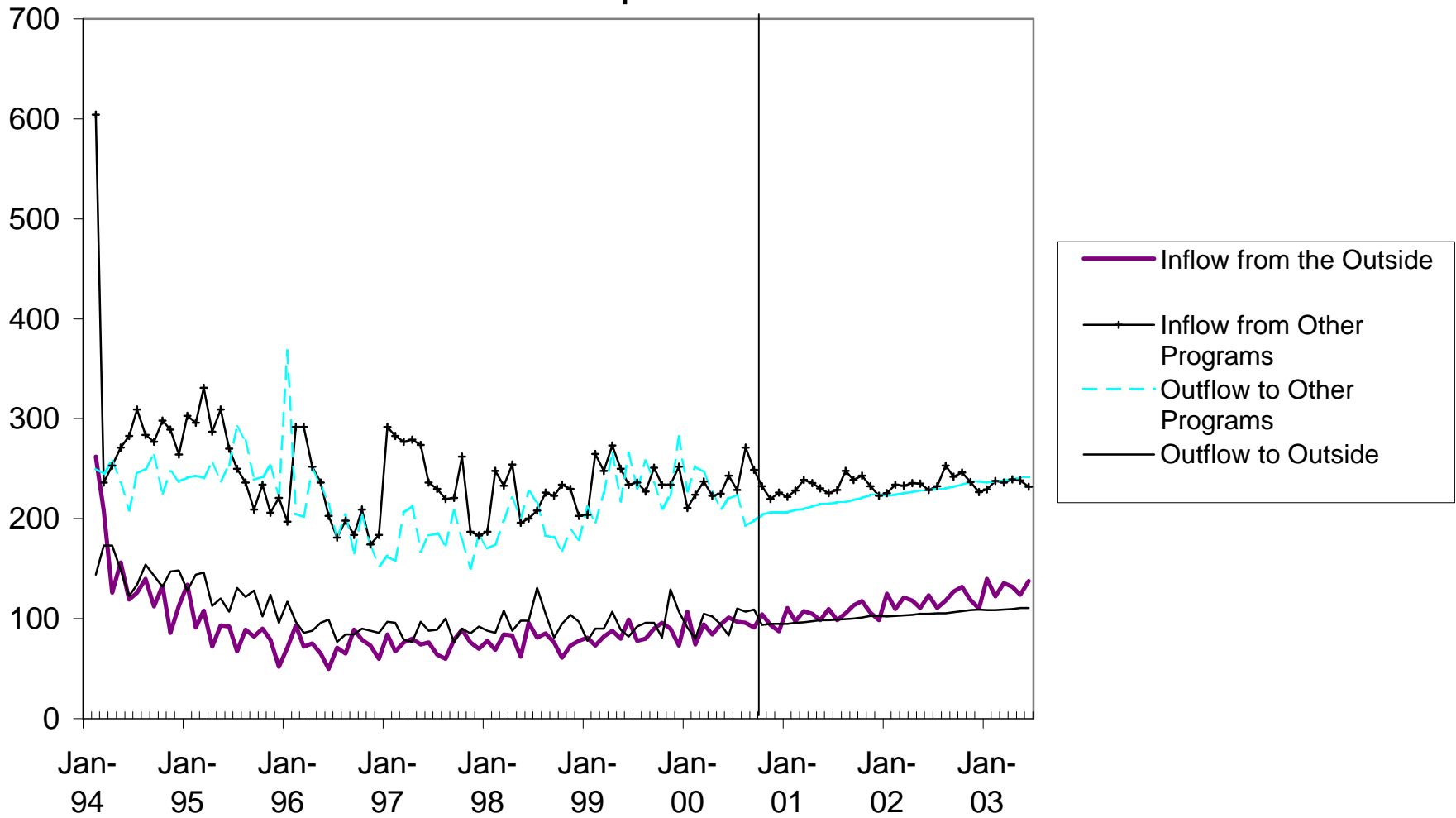
**Figure 33. Actual and Forecasted Caseloads OMAP Program Groups  
January 1994 to June 2003 (Program Groups 2, 3, 8-10, 12)**



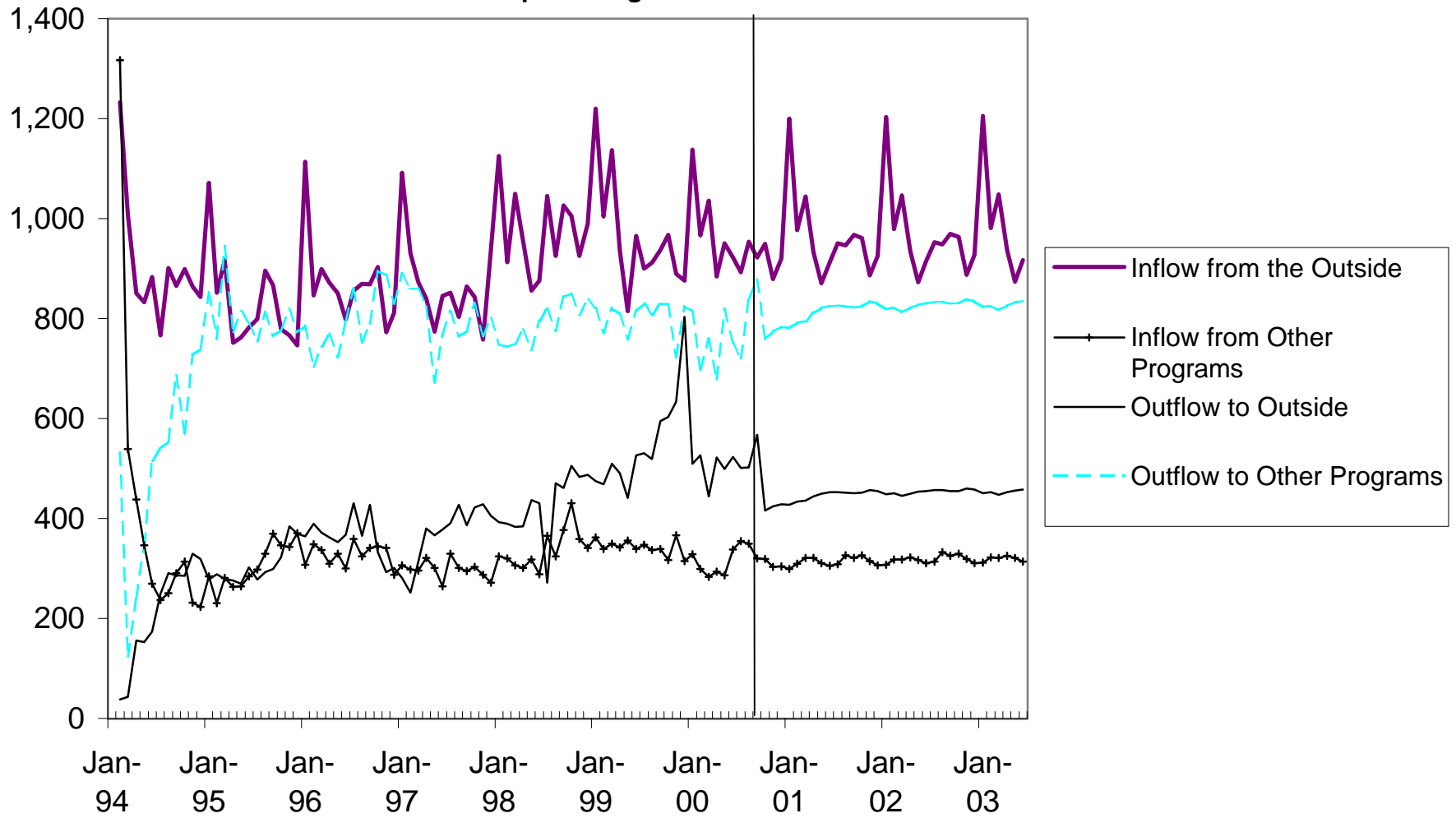
**Figure 34. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 1--TANF**



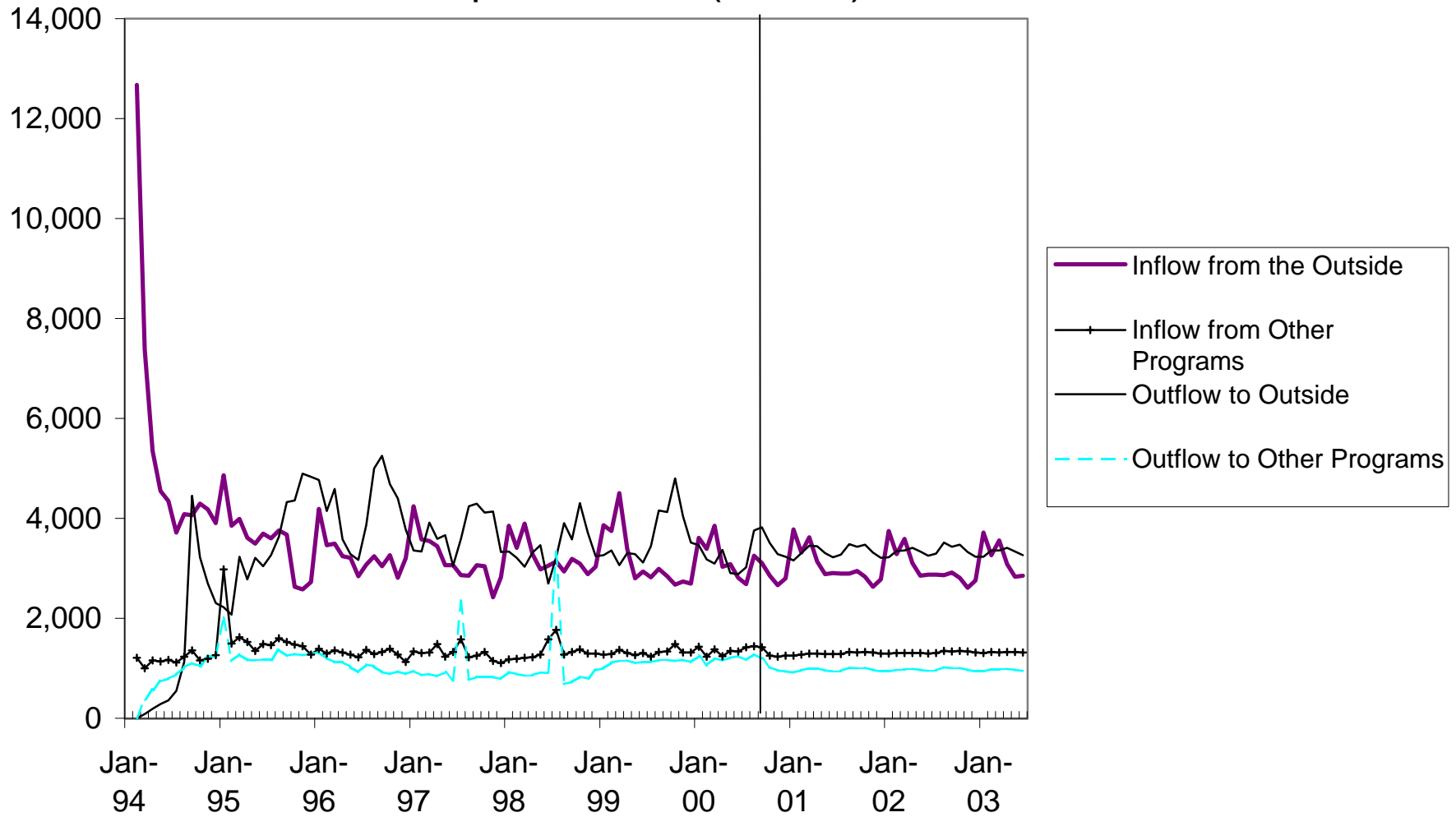
**Figure 35. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 2--GA**



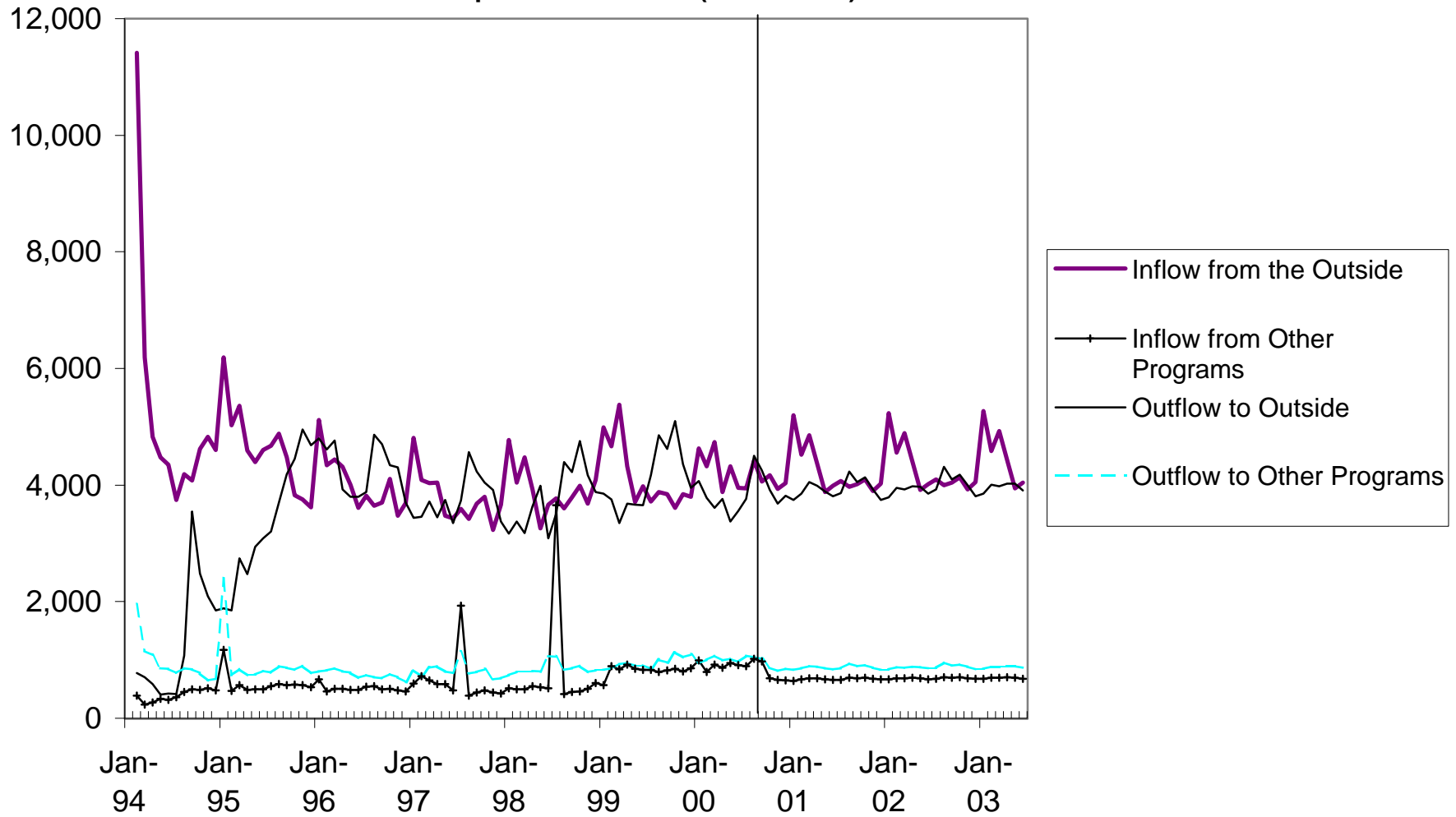
**Figure 36. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 3-- Pregnant Females**



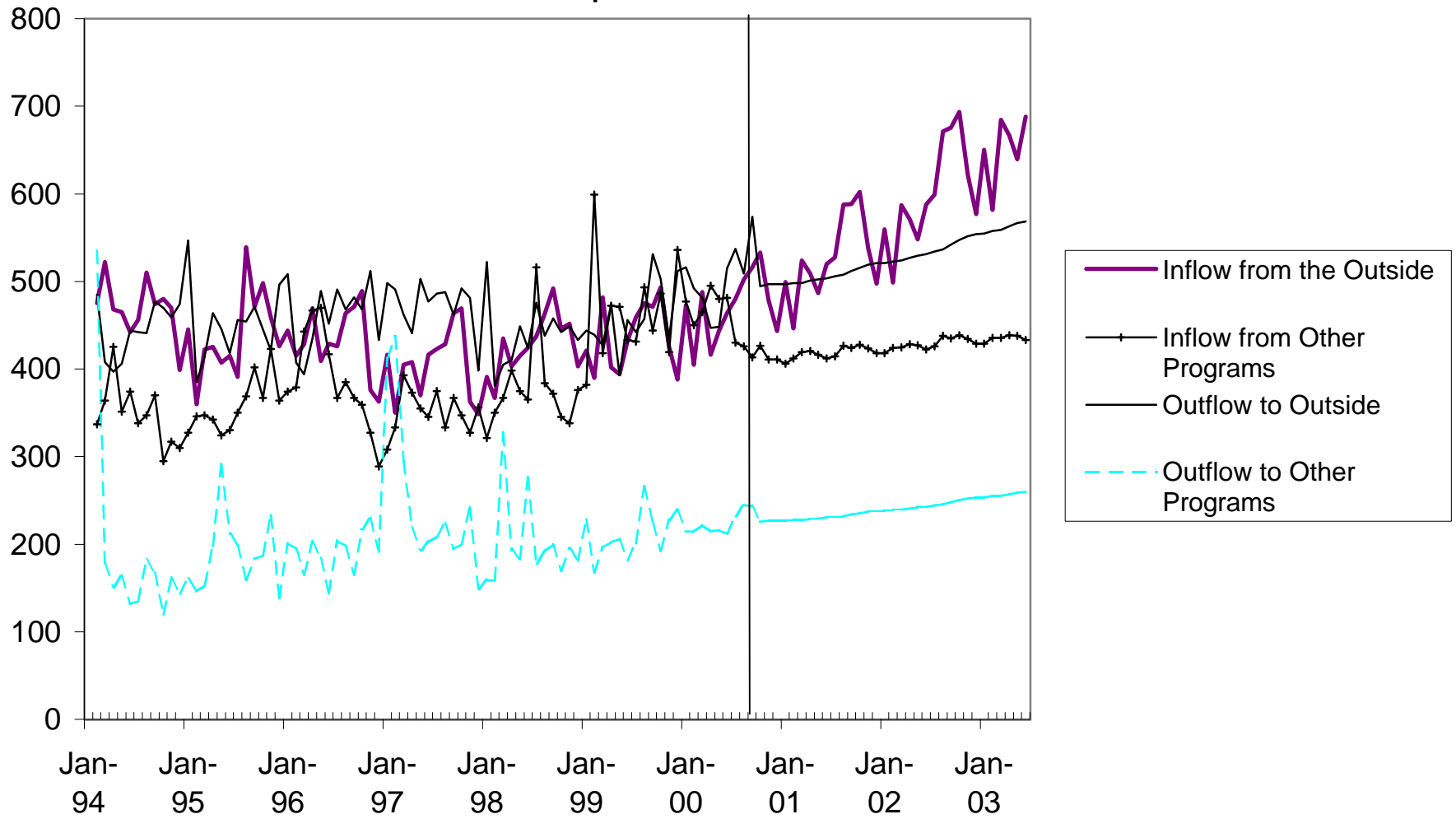
**Figure 37. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 4-- OHP Families (w/children)**



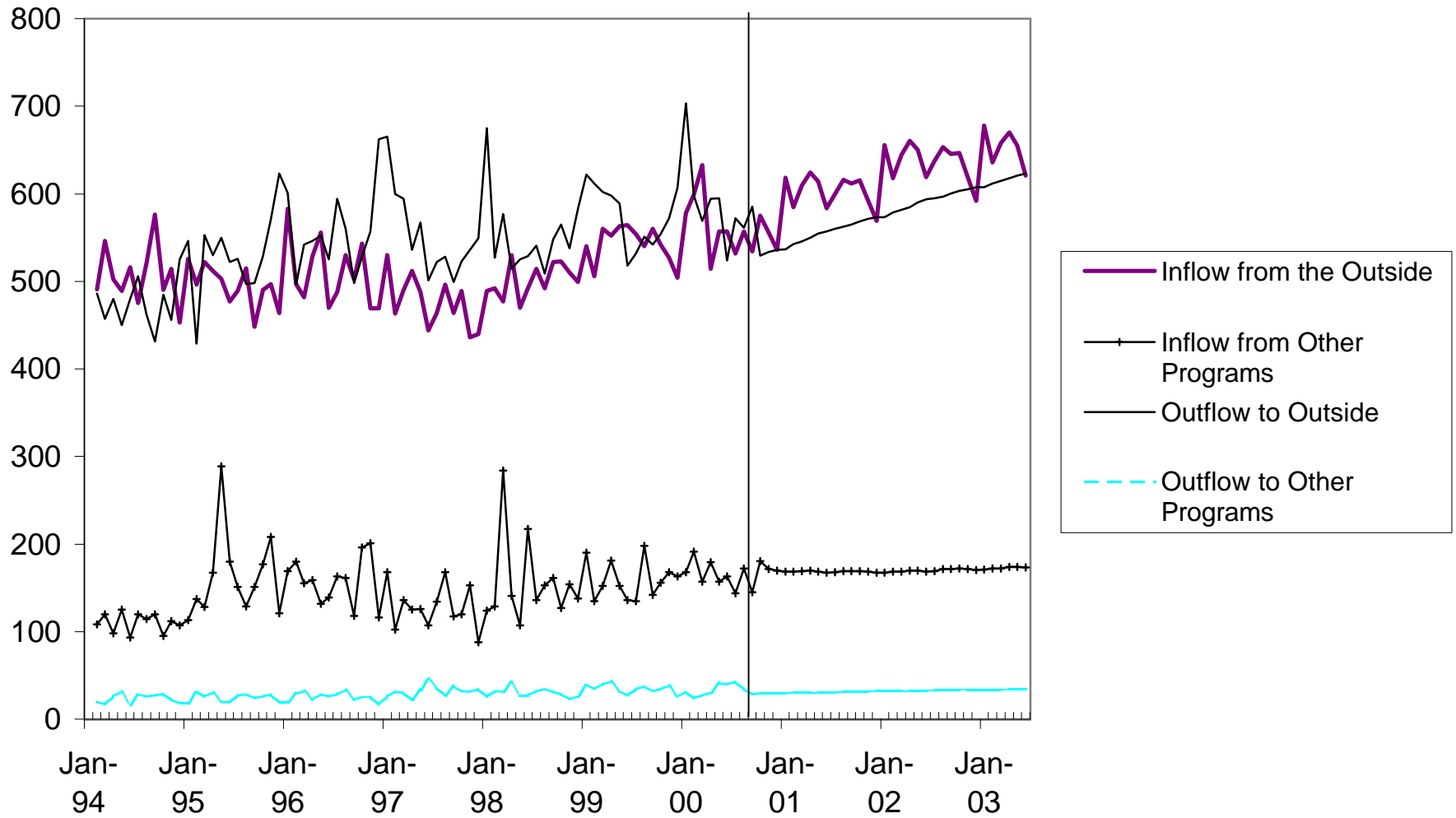
**Figure 38. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 5 -- OHP Adults (no children)**



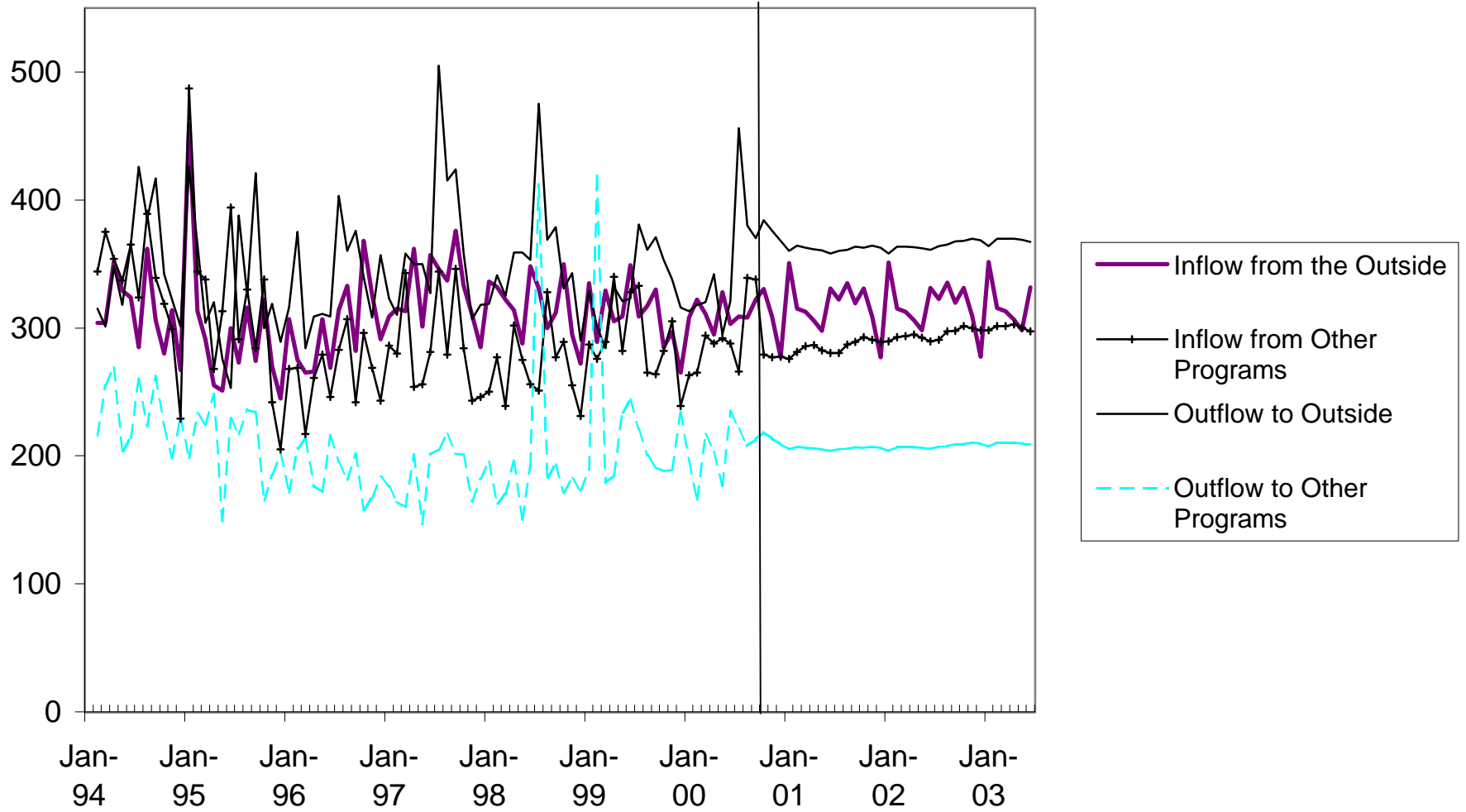
**Figure 39. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 6 -- AB/AD**



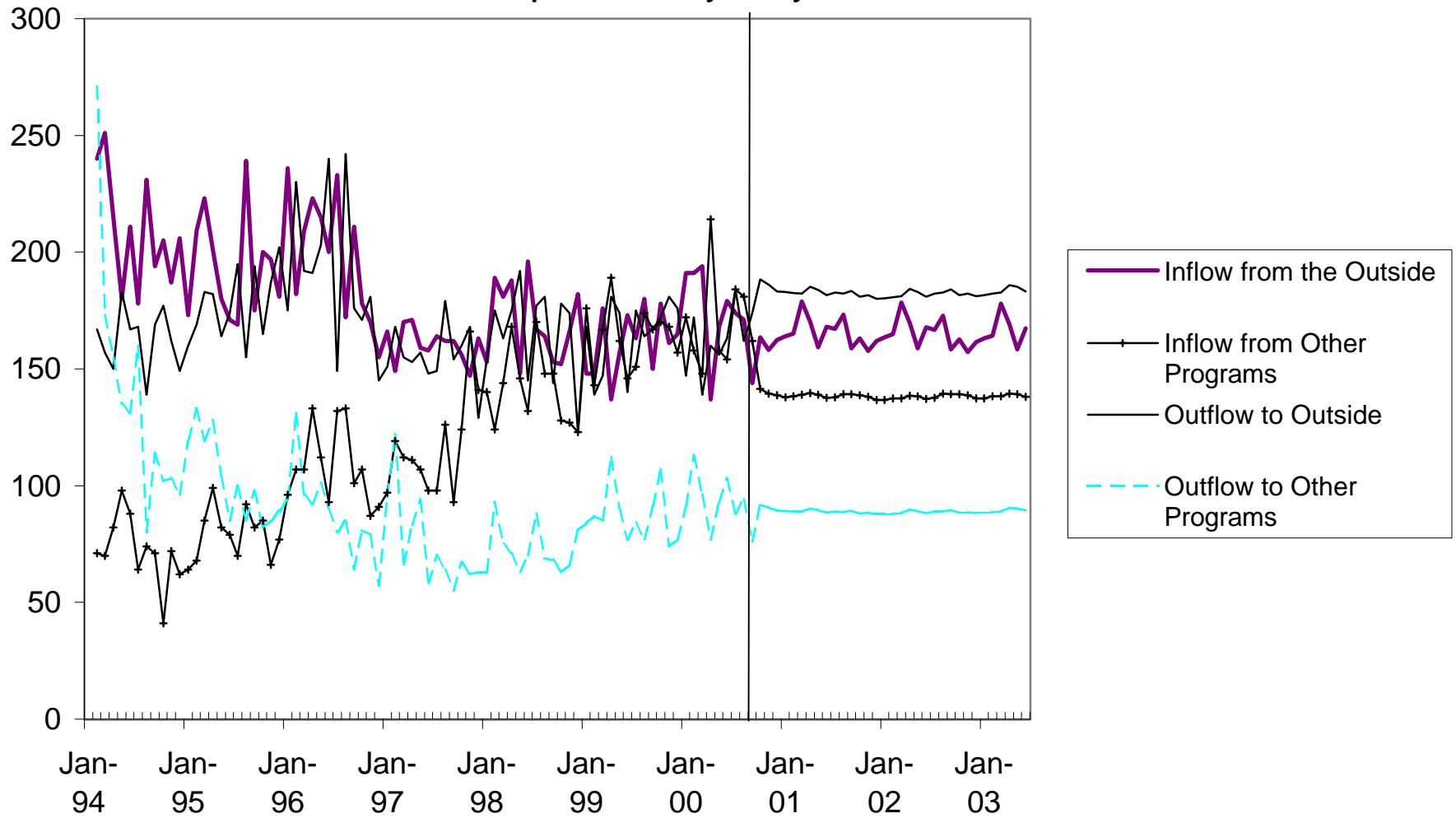
**Figure 40. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 7 -- OAA**



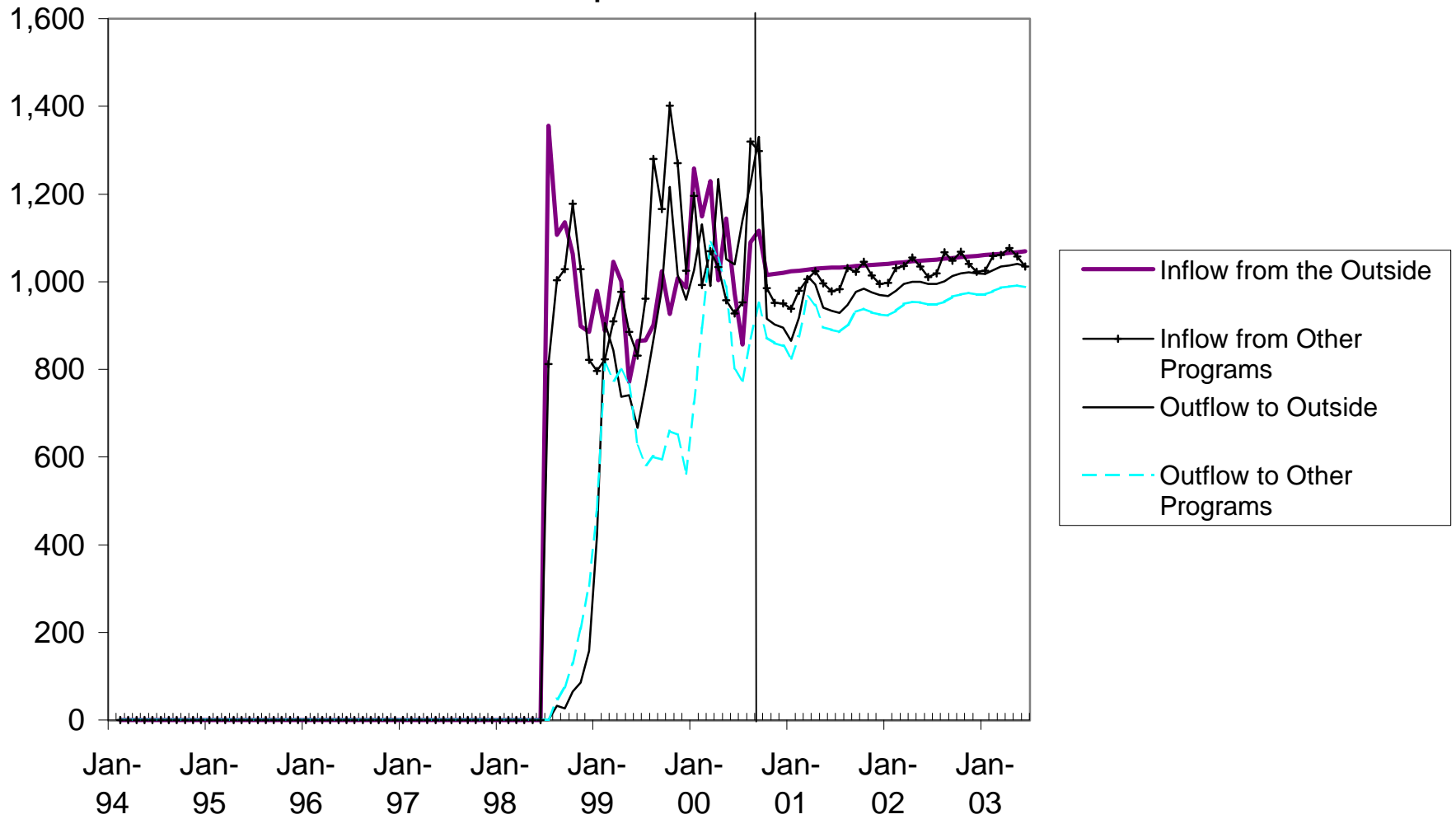
**Figure 41. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 8 -- Foster Children**



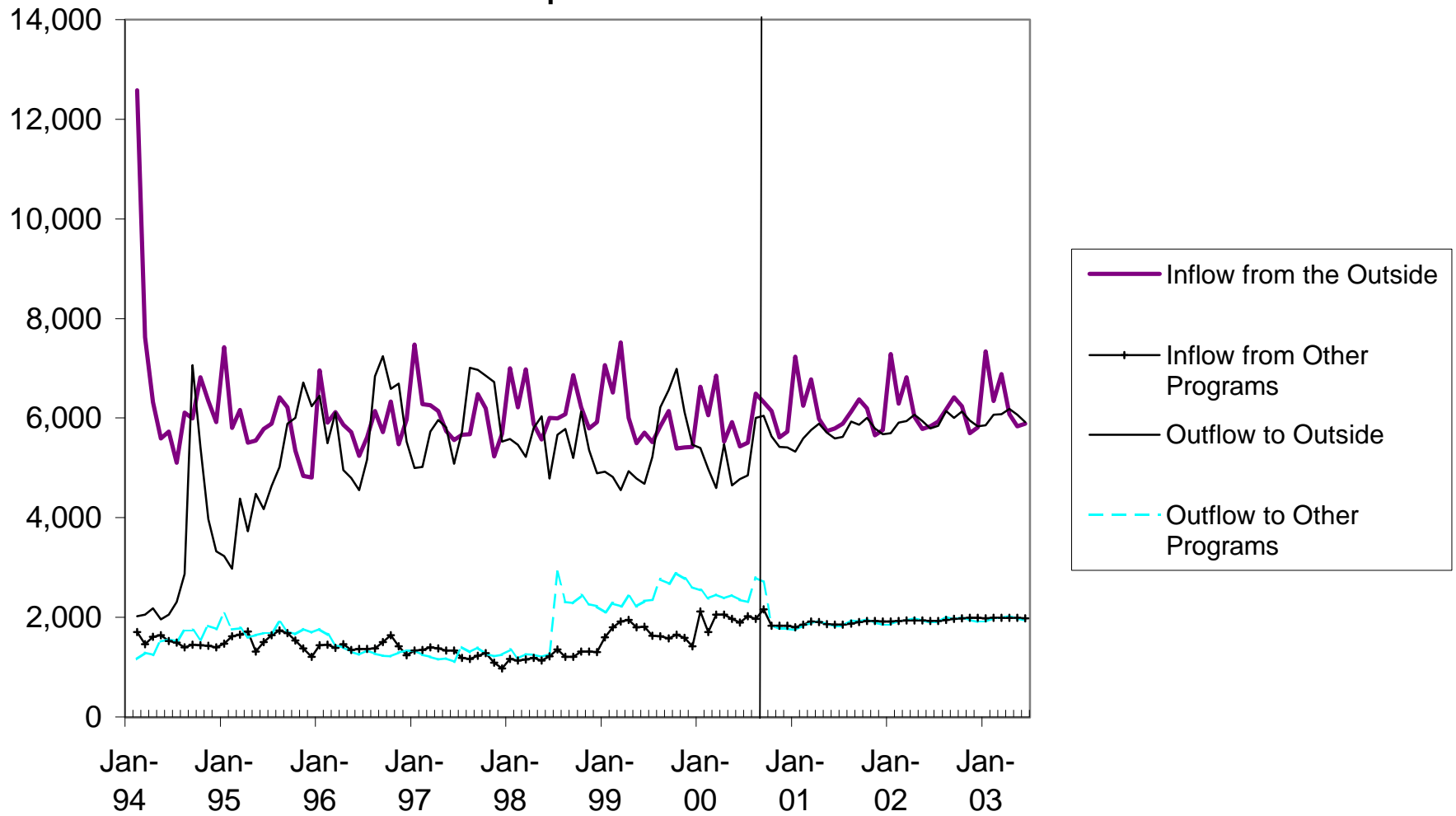
**Figure 42. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 9 -- Medically Needy**



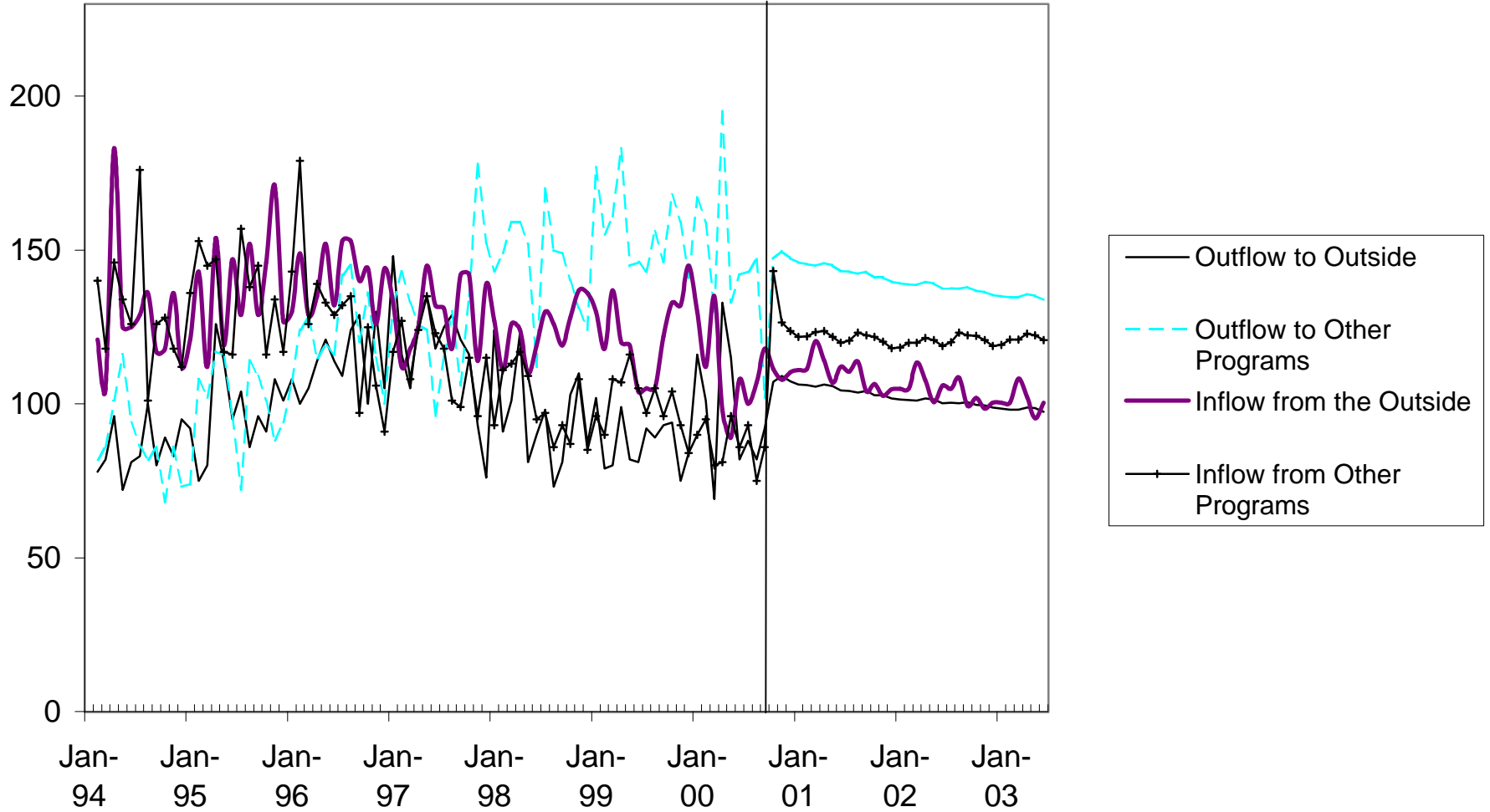
**Figure 43. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 10 -- CHIP**



**Figure 44. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 11 -- OHP Kids**



**Figure 45. Caseload Flows by Month**  
**Actual (Jan-94 to Sept-00) and Forecasted (Oct-00 to Jun-03)**  
**Group 12 -- Qualified Medicare Beneficiary (QMB)**



## Appendix A – Correspondence Between PERC codes and Program Groups

<b>PERC</b>	<b>Program Titles</b>
<b>PROGRAM GROUP 1 -- TANF</b>	
2	Temporary Assistance to Needy Families
82	TANF-Unemployed
E2	Emergency assistance w/30 days medical, TANF-UN
XE	TANF extended medical
XX	Aid to Dependent Children, extended medical with daycare
<b>PROGRAM GROUP 2 -- GENERAL ASSISTANCE</b>	
5	General Assistance (SDSD)
GA	General Assistance (SCF)
<b>PROGRAM GROUP 3 -- OHP PREGNANT FEMALE</b>	
L2	OHP pregnant female <FPL
L6	OHP pregnant female >=FPL
GP	OHP grandfather eligible, PLM Pregnant
GT	Pregnant, Pending Disability
<b>PROGRAM GROUP 4 -- OHP FAMILIES</b>	
L3	Age < 19, >=19 OHP non-pregnant adult w/ child &/or unborn
J1	OHP non-pregnant age >=19 w/ child &/or unborn
<b>PROGRAM GROUP 5 -- OHP ADULTS AND COUPLES</b>	
L4	Age < 19, >= 19, OHP single adult or childless couple < FPL
PP	Poverty Level Medical Adult
J2	OHP single adult or childless couple, age >=19,<FPL
<b>NOTE: ALL L3 and L4 &lt; 19 WILL BE MOVED TO GROUP 10 FOR ANALYSIS.</b>	
<b>PROGRAM GROUP 6 -- AID TO BLIND/AID TO DISABLED (AB/AD)</b>	
3	TPR, Medicare/not, Aid to the Blind
4	TPR, Medicare/not, Aid to the Disabled
B3	TPR, not Medicare, Aid to the Blind, medical only
D4	TPR, Medicare, Aid to the Disabled, medical only
<b>PROGRAM GROUP 7 -- OLD AGE ASSISTANCE (OAA)</b>	
1	TPR, Medicare A or B, Old Age Assistance
A1	TPR, Medicare A or B/not, Old Age Assistance, medical only
<b>PROGRAM GROUP 8 -- FOSTER CHILDREN</b>	
19	Foster Children (CSD)
62	Refugee Children
C5	Medical only, under age 21

<b>PERC</b>	<b>Program Titles</b>
<b>PROGRAM GROUP 9 -- Medically Needy</b>	
NG	Medically Needy, OAA, no spend-down
NH	Medically Needy, Disabled, no spend-down
NI	Medically Needy, Blind, no spend-down
NJ	Medically Needy, OAA, with spend-down
NK	Medically Needy, Disabled, with spend-down
NL	Medically Needy, Blind, with spend-down
<b>PROGRAM GROUP 10 -- CHIP</b>	
Z1	Z1-Chip eligible, age <1
Z2	Z2-Chip eligible, age 1-5
Z3	Z3-Chip eligible, age 6-12
Z4	Z4-Chip eligible, age 13-18
<b>PROGRAM GROUP 11 -- OHP KIDS</b>	
L1	Age <1, >=1,<6, >=6; OHP child DOB after 9-30--83,<FPL
L5	Age < 1, >=1,<6; OHP child> FPL
KM	PLM Child with Daycare
KP	Poverty Level Children
GK	OHP Grandfather eligible, PLMC
PM	Poverty Level Medical with Daycare
H1	OHP child, age <1,<FPL
H2	OHP child, age 1-5, <FPL
H3	OHP child, age 6-12, <FPL
H4	OHP child, age 13-18, < FPL
L7	OHP child, age < 19, DOB< 10/1/83, <FPL
HA	OHP child, age <1,>=FPL
HB	OHP child, age 1-5,>=FPL
<b>PROGRAM GROUP 12 -- QMB</b>	
QB	Medicare beneficiary before spend-down
QS	Medicare beneficiary when spend-down met
SF	MHD client I/P & O/P services only, no ID Card
<b>DROPPED PROGRAMS (not included in any program group)</b>	
V2	Refugee (families) < 8 months in U.S.
GF	OHP Grandfather Eligible, ADCM/MN Medically needy
MC	Medically Needy Aid to Dependent Children, no spend-down
MD	Medically Needy Aid to Dependent Children with spend-down
MQ	Medically Needy Aid to Dependent Children, no spend-down w/Dependent children
MR	Medically Needy Aid to Dependent Children w/spend-down and Dependent Children
NR	Medically Needy Disabled, with spend-down

## Appendix B – Data Processing Issues

This appendix provides technical information and detail relating to the data processing required to prepare original OMAP datafiles for use in this study. It addresses the following topics:

- Datasets
- Basic Data Processing
- Records with Short-Term Gaps
- Program Specific Data Notes

### Datasets

The data used in this project covered the time period January 1994 thru December 2000. However, for the forecasting purposes we only used information on eligibility spells covering January 1994 through September 2000. This was in response to a recommendation from ODHS that the data for October-December 2000 was still incomplete. The data was provided in two datasets: EligPatternsDHS9400.txt and EligDemo9400.txt.

'EligPatternsDHS9400' contains the records describing each 'eligibility segment' for each individual who was covered sometime during the time period covered by the dataset. An 'eligibility segment' is a period of time spent either off of program assistance or in a particular program. Thus, each time an individual begins or ends assistance or changes medical assistance programs, a new segment is created. Each eligibility segment has a start date and end date defining the time period it covers and a PERC code (when applicable) specifying the program enrolled in. Each record for an individual also includes an individual identification code that can be used to link individual's information over time or across datasets.

'EligDemo9400' contains basic demographic information for each individual included in the corresponding 'EligPatternsDHS9400' dataset. For the purposes of this work we used only an individual's birth date.

### Basic Data Processing

The dataset 'EligPatternsDHS9400' was used and basic variable changes and recodes were made as follows:

- The following variables were dropped: dtrepprn dtperbeg dtperend nmbrbccn coderepn nmblnsgn cdvldhrn dtperend dtperbeg dtrepprn nmbreven

Observations with PERC codes "—" or "\*\*\*" and PERC codes: "GF", "MC", "MD", "MQ", "MR", "NR", and "V2" were dropped; these represent programs that have either been dropped or will not be forecasted.

- Each eligibility segment for an individual is merged with their individual demographic data available on the data set 'EligDemo9400'.
- Create participant age variable for each month as follows:  $age = (current\ date - birth\ date) / 365.5$ , where "current date" is the last day of the month.
- Programs codes (PERC codes) are recoded into 12 groups as designated in Appendix A.

These codes reflect PERC codes before and after changes where made to the coding system on July 1, 1998. Note that in the case of program groups 4 (OHP Families), 5 (OHP Adults and Couples) all individuals with a current age of 18 or less are recoded to be in program group 11 (OHP Kids). This is done in order to create historical consistency in the coding of juveniles in the OHP programs. In the earlier years of the data set, under certain conditions, juveniles were coded under either the OHP Adult and Couples or OHP Families categories. Over time, this

practice was changed, relegating all individuals age 18 or under to the 'OHP Kids' categories. Recoding the data in this fashion creates historical consistency in counting the number of children on the programs that is essential to the analysis.

Because no data was available from the system prior to January 1, 1994, we are unable to correctly identify the beginning of spells that were coded (and thus, in progress) on January 1, 1994. While some continuing spells are identified, the dataset nevertheless identifies an inordinate number of spells beginning on January 1, 1994 as compared with the first of any month or even other January firsts. For this reason, when we perform a hazard analysis to measure the duration of program participation and its decay over time, we use techniques that are not sensitive to this start date.

### **Records with Short-Term Gaps**

There are multiple instances of individuals in a program that become ineligible and then are reinstated in the same program group in a period of less than 31 days. In some cases, these are eligibility spells under the same PERC code which simply end and begin again, sometimes with no gap between the end of one spell and the beginning of the next (contiguous end and begin dates). In other cases, eligibility under one PERC code ends and eligibility under another PERC code begins within a short period of time, but both PERC codes are captured within one program group.

Two elements of our forecasting methodology rely on measures of spell length for calculation. First, survival curves are estimated based on the length of completed spells within program groups. Second, the breakdown of the last actual months caseload (in this case September 2000) by number of months since entering the program is also based on length of current spell in this program group. Since all caseload counts are based on the end-of-month count, the inclusion of short-term gaps in spells within a given program group that do not cross the last day of the month would result in underestimates of survival probability and skew then breakdown of the September 2000 caseload count. To fix this problem, we recode begin and end dates to 'reconnect' occurrences and eliminate gaps that are inconsistent with the rest of our methodology.

There are 2 methods for 'reconnecting' the kinds of gaps discussed here and make the data internally consistent. The first is to reconnect any spells that are separated by 31 days or less. The second method is to reconnect spells that are separated by 31 days or less and do not cross into another calendar month. The second method reconnects fewer spells, as it applies a more restrictive standard and is likely to produce results more precisely consistent with the rest of the methodology used here. This method is used for all program groups, with the exception of program group 9 (Medically Needy)

Program group 9 (Medically Needy) represents special challenges. Because of the nature of spend down requirements, participants in program group 9 routinely receive eligibility under one PERC code for one portion of a month and under another PERC code for the remainder of the month. These PERC code spells are sometimes contiguous (a gap of 0 days between them) or are sometimes separated by 1 or more days. Of 35,092 spells begun in program group 9 between January 1, 1996 and September 30, 2000, 19,591 (56 percent) of these spells lasted for 1 month or less. This contrasts with program group 1 (TANF) for example, in which only 13 percent of all spells begun during the same time period ended in 1 month or less. As a result of this constant PERC code churning in program group 9, the second method of 'reconnecting' spells is yields too conservative result. Survival curves based on this method yield exit rates that are inconsistent with historical averages. More realistic survival rates result from using the first method, which is the basis for all further work on program group 9 here. These special complications in program group 9 bear further examination. In particular, the special difficulties in dealing with this program group may highlight some other inconsistencies in the methodology. The data structure of most program groups may be robust to these

inconsistencies, but group 9 may not be because of the special nature of the repeated PERC code changes there. This issue is discussed further in the conclusion of this report.

### **Program Specific Data Notes**

In addition to the expansion of a number of programs in early 1994 with the advent of the Oregon Health Plan, we noted the following programmatic changes that affected observed data.

- **December 1994:** Program XX (ADC extended medical with day care) is discontinued and individuals are transferred to program XE (TANF extended medical), program 2 (TANF) or program group 8 (foster children) on January 1, 1995. Since XX, XE and 2 are all subsumed in program group 1, this only creates a larger than normal inflow into group 8 (and corresponding outflow from group 1).
- **March 1998:** Coverage for OHP pregnant women expanded to cover those with incomes of 133-170 percent of the federal poverty level.
- **July 1998:** Expansion of the OHP extended coverage of kids from age 6 to age 18; Increased coverage of all kids to 133-170% of poverty line; New laws effecting domestic violence victims possibly created increase in eligible applicants for TANF; CHIP program established.
- **Sept/Oct 1999:** All children publicly adopted from out-of-state are now eligible for OHP. Increases coverage by an estimated 200-300 per year.

## Appendix C – Detailed Description of Inflow Time-Series Regression Models

### Independent Variables Used

Four different types of explanatory or independent variables – the variables that drive changes in program External Inflows -- were used in the models. Following is a description of each.

**Exogenous Variables.** Exogenous variables are gross statewide economic or demographic measures. They were selected on the basis of two criteria: 1) they measured conditions that might logically be expected to affect Inflows, and 2) reliable historical measures and forecasts at reasonable frequencies were available. Exogenous variables, which were obtained from the Oregon Office of Economic Analysis, were interpolated, when necessary, to match the monthly frequency of the Inflow data and forecasts. They are listed below.

1. (OVER65) Population of Oregonians aged 65 and older
2. (OVER75) Population of Oregonians aged 75 and older
3. (OVER85) Population of Oregonians aged 85 and older
4. (BIRTHS) Number of births (seasonally adjusted)
5. (FETEENS) Females, aged 10 to 19
6. (YWOM) Females, aged 20 to 30
7. (KIDS) The number of Oregonians aged 0 to 18
8. (POP) Oregon population
9. (REALPI) Total real Oregon personal income
10. (CONCENTRIC) This variable is defined as the logarithm of the seasonally adjusted monthly unemployment level divided by real personal income in millions of dollars. For a given unemployment level, CONCENTRIC declines *at a decreasing rate* as real personal income increases, but it declines faster as unemployment levels decline.

One interpretation of the variable is that it models a growing economy's ability to absorb the unemployed. An increase in CONCENTRIC (unemployment growing faster than real personal income) suggests that increases in personal income are concentrated among higher income workers. A decline suggests that the benefits of personal income increases are being diffused throughout the entire labor spectrum. For this reason and for lack of a better term, I call it Concentration.

11. (MO) An index variable for month in the time series. Used to create a linear trend, or when logarithmically transformed, a non-linear trend. January 1994 = # 1

**Endogenous/Program Variables.** A second group of explanatory variables comprises programmatic indicator or dummy variables. Indicator variables, which have values of either zero or one, were used to model major policy or administrative changes that were hypothesized to affect various Inflows. Such variables can alter Inflows in two ways: 1) by creating a positive or negative "spike" (S) only in the month when the change occurred, or 2) by effecting a "level shift" (L), in which the programmatic change is assumed to affect the magnitude of inflows in all subsequent months. Programmatic variables included in the analysis, listed by date of occurrence, are as follows. The number of models in which each was included is shown in parentheses.

OHP                                      January 1995-June 1995: OHP linear ramp up period, assuming 20% per month.  
Completed by June 1, 1994 (3 models).

XX	Program XX (ADC extended medical with day care) is discontinued on December 31, 1994. Level shift indicator variable, having a value of 1 beginning January 1995, and all subsequent months. (1 model)
WAIVERL	Oregon's Welfare Reform. Level shift indicator variable, having a value 1 beginning July 1996, and all subsequent months.
WAIVERS	July '96, one month only. (4 models)
JUL'97	Level shift. Early in the modeling process a profound and discontinuous change in Inflows for several programs, most notably TANF, was observed to have occurred in July 1997 -- the beginning, incidentally, of a new biennium.  While no formal policy or procedural change that might account for the discontinuity has been identified, it has been included as a level shift variable in several models. The indicator variable has a value of 1 in July 1997 and all subsequent months.  A second discontinuity, which appears to occur in October 1995, had similar effects. It, however, was not modeled.
OHPProg	March 1998, level shift: Coverage expanded for OHP pregnant women between 133-170% of the FPL. (1 model)

**Autoregressive/Moving Average Variables.** The third and final set of independent variables was used to eliminate or reduce the degree of serial correlation in a given model's errors. They are either autoregressive (AR) or moving average (MA) variables, which are best explained as modeling the "momentum" that may build up in a trend over time.

While such terms can dramatically improve a model's fit (as measured by  $R^2$ ), they are but "black boxes", which provide little real explanatory value. Therefore, they were used sparingly and only in cases when serially correlated error terms threatened to undermine a model's stability and predictive reliability.

Table C.2 provides a summary of the models' evaluative measures ( $R^2$ , Durbin-Watson Statistic, and the maximum P-value found in the equation. The table also provides a summary of the explanatory variables used.

**Models and Modeling Transforms.** Most of the models describe non-linear relationships. These are identifiable by a logarithmic transformation of either External Inflow (Y), and/or one or more independent variables. In cases where the sign of an independent variable in such an equation is negative – the vast majority of cases – External Inflows follow the shape of a "decline curve". That is, Inflows will gradually decline in response to an increase in an independent variable. They will do so, however, at a declining rate, eventually reaching some lower limit.

A number of models include so-called "interactive" variables, which are created by either multiplying or dividing one independent variable by another. Interactive variables are useful in cases where Inflows respond to simultaneous or joint changes in two or more independent variables. For example, the unemployment level may affect Inflows in some groups, but it may affect them differently in the mid-90s than they do in 2000. If so, a useful interactive variable – sometimes called a "slope shift" variable -- may in this case be created by multiplying the monthly unemployment level by the month in which it occurred. Slope shift variables – which account for the change in slope before and after a change -- may also be used in conjunction with programmatic indicator variables.

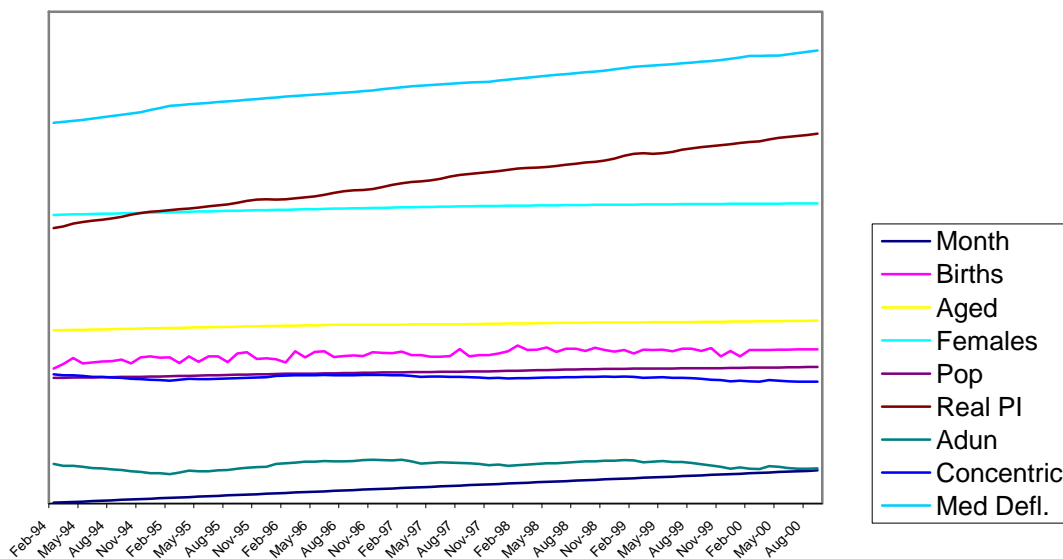
**Seasonality.** Significant seasonal variation in Inflows was present in all program groupings except CHIP, for which there was insufficient data to reliably evaluate seasonality. In several groupings, seasonality may account for half the explained variation in Inflows over the period evaluated. Inflows were seasonally adjusted using the ratio of actual-to-centered moving average method. Once an Inflow model was finalized, seasonality was restored in its forecasts.

## Modeling

The idea of OLS regression modeling is to attribute variability in Inflows to known, ideally predictable, sources. Other than “momentum” attributable to auto-regressive and moving average terms, (which is hardly explainable), three sources of variability affected the models: 1) seasonality, 2) programmatic or administrative changes, and 3) exogenous variables.

Of the three, exogenous variables provide by far the least explanatory power, and Figure 1 helps explain why. If Inflows for any of the program groupings (shown in the following section) are compared with Figure C.1, it’s easily seen that – except for any long- term trend -- Inflows are far more variable than are exogenous variables.

**Figure C.1: Exogenous Variables**



Since the most consistent source of variation is seasonality, this associative effect is picked up first and then removed from the time series. In a typical Inflow model, about 25 percent of explained variability is attributable to seasonality alone.

Another major source of variation is programmatic change. This is modeled using indicator variables (value of either 0 or 1), which typically account for about half the explained variability in Inflows. When plotted, the indicator variables are either sharp spikes or steps. Thus, they pick up sharp spikes or step changes in Inflows. (As it goes from 0 to 1 over a period of four months, the OHP ramp up variable is a slightly less steep, but still pronounced step).

Amidst variability attributable to periodic and programmatic change, *may* lurk the bigger-picture longer-term associations with exogenous variables. I say *may* lurk, because the effect of any source of variability is only evaluated *ceteris paribus*, or “all else held equal”. So the association between Inflows and larger economic and demographic variables is made with seasonality held constant and programmatic change held constant. Some – like the association between the number of births and Inflows to the Pregnant Female grouping or the size of the Elderly population and Old Age Assistance Inflows – are pretty obvious. Happily, the statistical modeling process picks up these quite nicely, but other associations are less clear. So in a typical model, the best we can really say is that roughly 25% of explained Inflow variability *might* be the result of variability in the exogenous variables used.

Figure C.1 illustrates a second issue. Except for the steepness of slope (not an important in regression modeling), the exogenous variables behave more or less the same over the historical period evaluated. If you mentally eliminate the trends, you can see that Adjusted Unemployment (Adun) is the most

variable, followed by Births, the latter providing good explanatory power for the Pregnant Female program group but nothing else. The synthetic variable, ADREAL, is also relatively dynamic, and among all exogenous variables employed, is the only one with a negative slope. It is also the only variable that decreases at a declining rate, a behavior that characterizes many Inflows during the early part of the time series.

This means in many cases that any one may be substituted for any other with very little effect on a model's overall explanatory power. Further evidence for their similarity is provided in Table C.1, which shows the correlation among the exogenous variables used.

The high degree of correlation among exogenous variables means that -- unless transformed using logarithms or interacted with other variables -- it's generally not possible to use more than one at a time in a model (this no-no is called multi-collinearity). So in the end, we chose exogenous variables as carefully as possible, using measures of fit and reasonableness in regard to the direction of the relationship.

**Table C.1 Correlation Table of Exogenous Variables**

	<i>SABirths</i>	<i>Deaths</i>	<i>Ywom</i>	<i>FeTeens</i>	<i>Over65</i>	<i>Over75</i>	<i>Over85</i>	<i>Females</i>	<i>Under20</i>	<i>Kids</i>
<i>SABirths</i>	1.00									
<i>Deaths</i>	0.86	1.00								
<i>Ywom</i>	0.89	0.90	1.00							
<i>FeTeens</i>	0.83	0.95	0.78	1.00						
<i>Over65</i>	0.88	0.99	0.90	0.97	1.00					
<i>Over75</i>	0.89	0.97	0.95	0.91	0.98	1.00				
<i>Over85</i>	0.87	0.98	0.90	0.96	0.99	0.99	1.00			
<i>Females</i>	0.89	0.90	1.00	0.79	0.90	0.95	0.90	1.00		
<i>Under20</i>	0.91	0.96	0.98	0.90	0.97	0.99	0.97	0.98	1.00	
<i>Kids</i>	0.91	0.94	0.98	0.87	0.95	0.97	0.94	0.98	0.99	1.00
<i>OrPop(M)</i>	0.89	0.98	0.91	0.96	1.00	0.99	1.00	0.92	0.97	0.95

## Model Summaries

A summary of the External Inflow models is shown in Table C.2. The Evaluation Summary shows  $R^2$ ; the largest of a model's P-values and therefore the least significant of its coefficients; and the Durbin-Watson statistic. External Inflows for all models are seasonally adjusted, as are all exogenous variables employed. Even casual perusal of Table C.2 indicates that External Inflow models vary significantly from one program group to another. It's seen that no program group shares a common model with any other.

A brief summary of each individual model is provided below. Each description is accompanied by a graph that shows: The actual monthly Inflows throughout the historical time period (symbols); seasonally adjusted model predictions through the end of 2003 (dotted line); and non-seasonally adjusted predictions through 2003 (solid line).

**Table C.2: Inflow Model Summary**

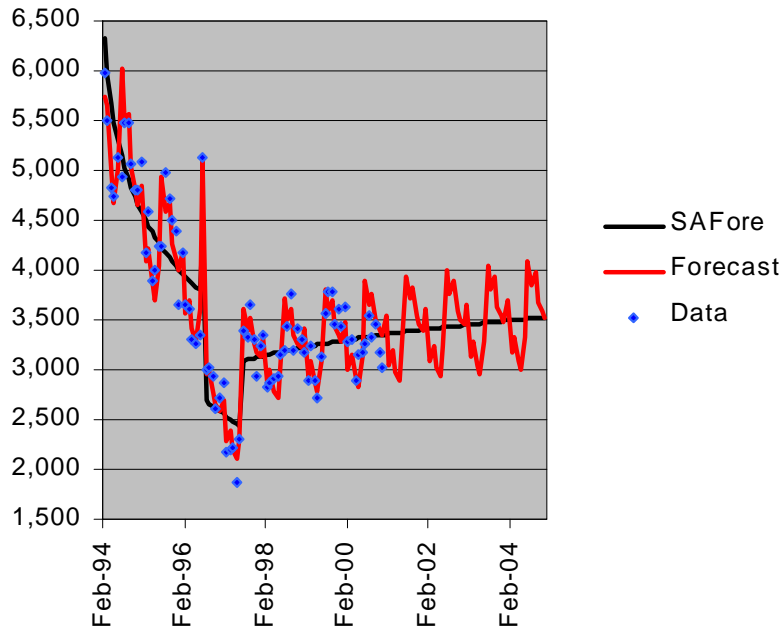
<i>Program Grouping</i>	TANF	GA	Pregnant Women	OHP Adults w/Kids	OHP Adults – no Kids	AB/AD	OAA.	Foster Kids	Med Needy	CHIP	OHP Kids	QMB
#	1	2	3	4	5	6	7	8	9	10	11	12
R <sup>2</sup>	94%	90%	62%	85%	79%	55%	56%	34%	53%	62%	73%	44%
Pmax	0%	0%	2%	0%	5%	1%	2%	0%	0%	0%	1%	0%
D-W	1.94	2.30	2.18	1.80	2.58	2.10	1.90	1.95	1.91	2.00	2.00	2.05
<b>Percentage Points of R<sup>2</sup> Attributable to Seasonality</b>												
	7%	4%	30%	14%	23%	32%	6%	10%	7%	N/A	16%	6%
<b>Exogenous Variables</b>												
Under 20				X	X					X		
Concentric												
Pop				X	X	X	X	X	X	X	X	
Real P.I.		X										X
Births			X									
Over 65												
Over 75						X	X					
Over 85						X	X					
Ywom			X									
Feteens											X	
Adun			X									
<b>Endogenous/Program Variables</b>												
WaiverL	X					X		X	X			
WaiverS	X								X			
Mo	X	X		X	X							X
OHP		X				X					X	
July'97	X						X					
OHPPreg			X									
XXS								X				X
<b>Autoregressive/Moving Average Terms</b>												
AR				X		X				X		X
MA	X	X	X		X	X	X	X		X	X	X

**Group 1 - TANF**

Seven percentage points of explained variability in TANF inflows is attributable to seasonality; July and September averaging 17 and 13 percent respectively higher than the average month.

Except for a negative logarithmic trend, which is responsible for forecasts leveling as they approach 3,500, inflows were almost completely driven by programmatic variables. Receipt of Oregon's Welfare Reform Federal Waiver in July '96 accounts for a one-time spike, followed by a dramatic level reduction. The July 1997 discontinuity causes both a level increase and a reversal of slope from negative to positive.

**Group 1 - TANF Monthly Inflows**

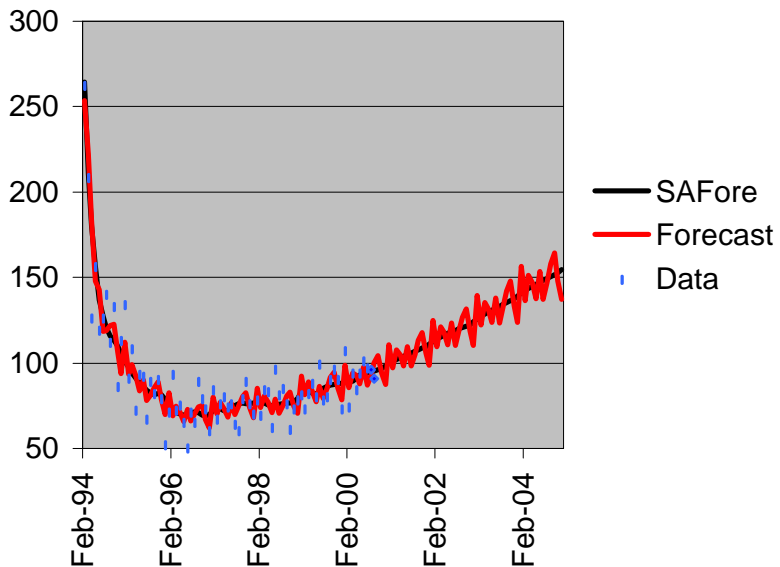


**Group 2 - General Assistance**

Four percentage points of explained Inflow variability are attributable to seasonality; January averaging 11% higher and July 7% lower than the typical month.

Paradoxically, seasonally adjusted Inflows to the General Assistance group were found increase with real personal income, although at a declining rate over time. This is either the result of more funds being made available for GA, or the fact that those with lower incomes did not share in the real personal income increase over the period studied. Because real personal income is expected to continue its increase, the trend of increased GA inflows is expected to continue.

**Group 2 - General Assistance Monthly Inflows**



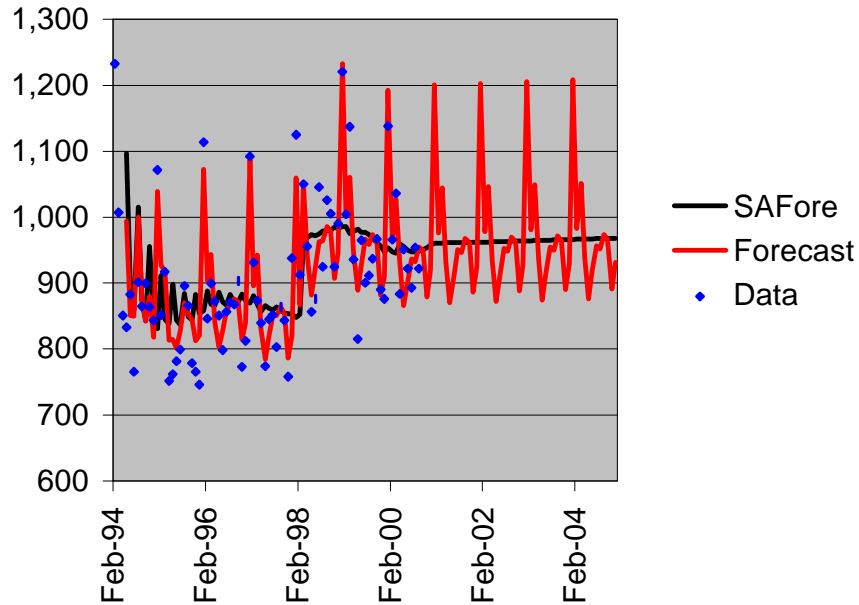
**Group 3 - Pregnant Women**

Nearly 30 percentage points of explained Inflow variability is attributable to seasonality, January inflows averaging 25% higher than a typical month.

Inflows to the Pregnant grouping were exponentially related to predictor variables. The primary exogenous driver was the interaction of adjusted unemployment and the number of

women <25 years of age in the population; when both are positive, the combination of the two generates higher inflows. Expanded coverage for OHP women in March 1998 accounts for a sustained 13% increase in monthly Inflow.

**Group 3 - Pregnant Women Monthly Inflows**



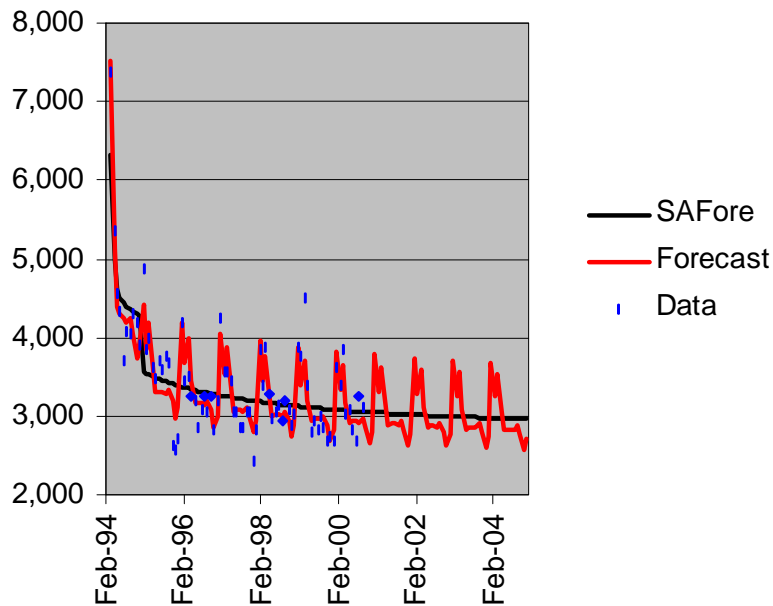
**Group 4 - OHP Adults w/ Kids**

Seasonality accounts for 14 percentage points of explained Inflow variability; January has 24% and March 19% higher average Inflows than a typical month. By contrast, November inflows are 13% lower than the typical month.

Two primary factors account for a decline into this program over the period studied. The discontinuance of Program XX in December'94, accounted for a monthly decline of almost 700 clients into this program. The

steady decline toward inflows of 3,000 near the end of the forecasting horizon is the result of a predicted decline in the under 20 years of age cohort as a percentage of total Oregon population. (Yes, we're getting older!)

**Group 4 - OHP Adults with Kids Monthly Inflows**

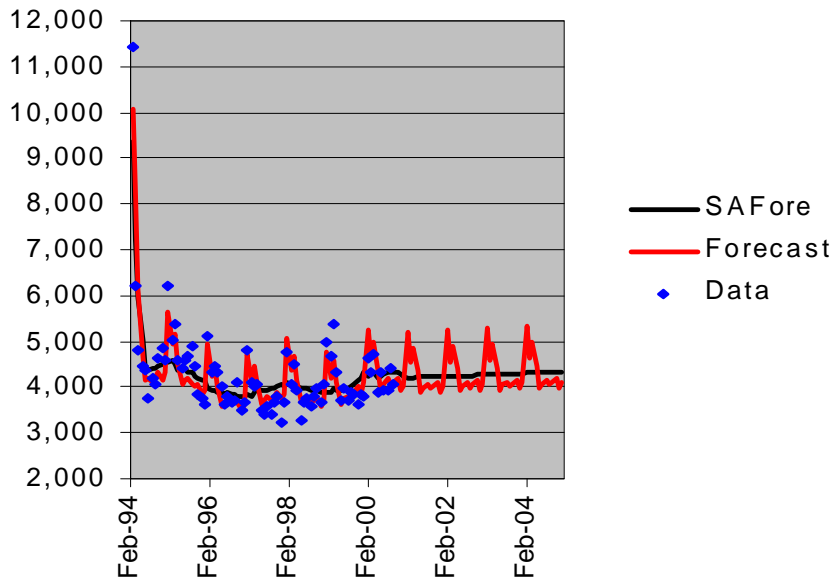


**Group 5 - OHP Adults, no Kids**

Seasonality accounts for 23 percentage points of explained Inflow variability -- with January, February and March being 24, 7, and 15 percent higher respectively -- and November, 8% lower than a typical month.

Like its "with Children" companion group, Inflows decline as the proportion of the population comprising those under 20 years of age declines. Inflows also decrease as CONCENTRIC declines. Together, these two factors lead to a leveling of inflows at about 4,300 per month.

**Group 5 - OHP Adults, no Kids Monthly Inflows**



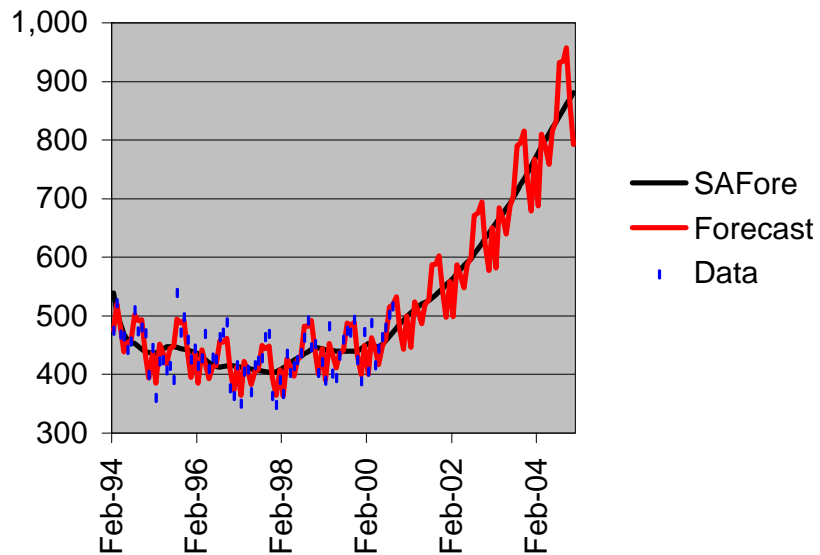
**Group 6 - AB-AD**

Seasonality accounts for 32 percentage points of explained Inflow variability -- with August, September, and October each averaging about 11% higher than a typical month -- and December and February about 11% lower.

Following an initial decline triggered by the implementation of the Oregon Health Plan, inflows have been driven and will continue to be

driven, not surprisingly, by general population increases. Perhaps because they are subsumed under different programs, inflows decline all else equal, although at a declining rate, as the over 75 years of age cohort increases.

**Group 6 - Aid to Blind – Aid to Disabled Monthly Inflows**

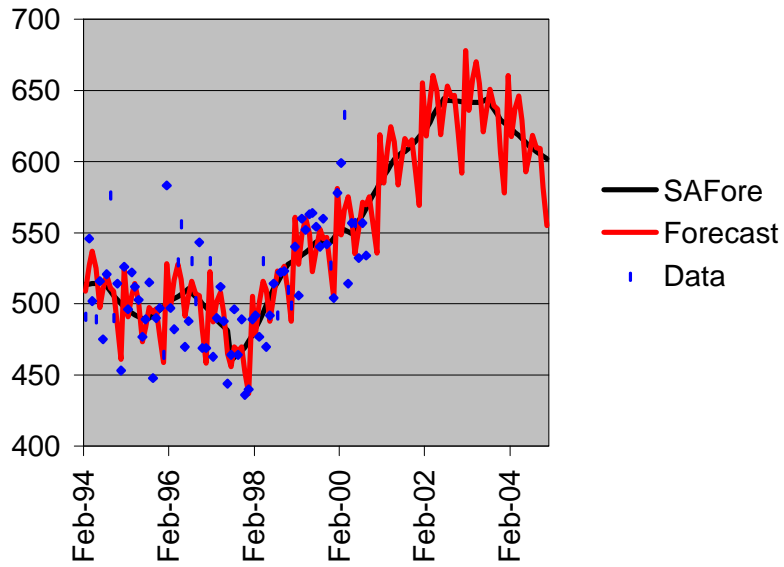


**Group 7 - Old Age Assistance**

Seasonality accounts for but 6 percentage points of explained Inflow variability, with January 6% higher and December 8% lower than a typical month.

After relatively flat inflows through July, '97, the July '97 triggered a sharp increase in inflows that appears closely correlated with the over 85 years of age cohort. This, combined with predicted increases in the overall Oregon population, are largely responsible for predicted increases in this program. The trend reversal in 2003 is unexplainable, so I would level the forecast to about 650 inflows per month thereafter.

**Group 7 - Old Age Assistance Monthly Inflows**

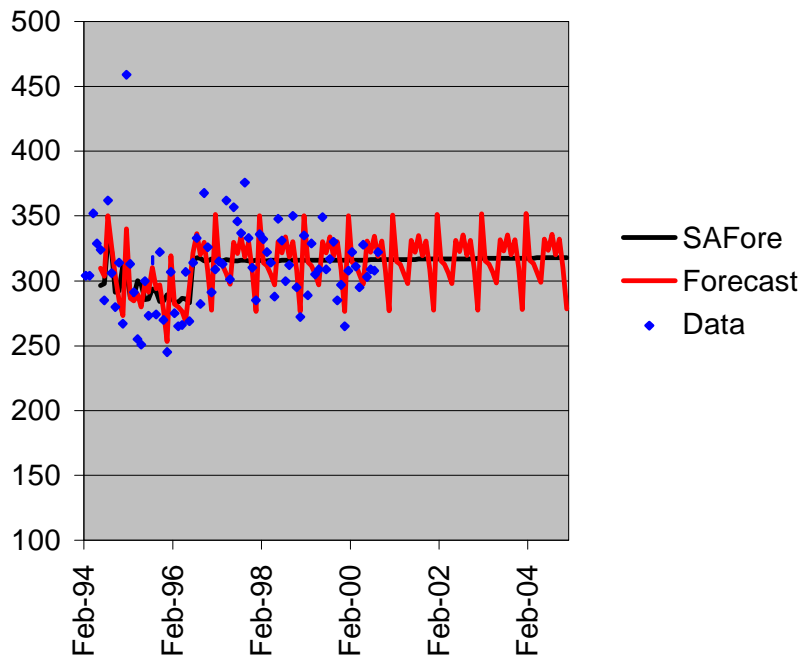


**Group 8 - Foster Children**

Seasonality accounts for 10 percentage points of explained Inflow variability – January 11% higher and December 12% lower than a typical month.

Following receipt of Oregon's Welfare Reform Federal Waiver in July 1996, which triggered a trend reversal, inflows thereafter have remained relatively steady. There is evidence that inflows are loosely tied to Oregon's general population. Despite this, the influence of population growth appears to be quite small, so future inflows are projected to remain roughly at today's levels over the forecast period.

**Group 8 - Foster Children Monthly Inflows**

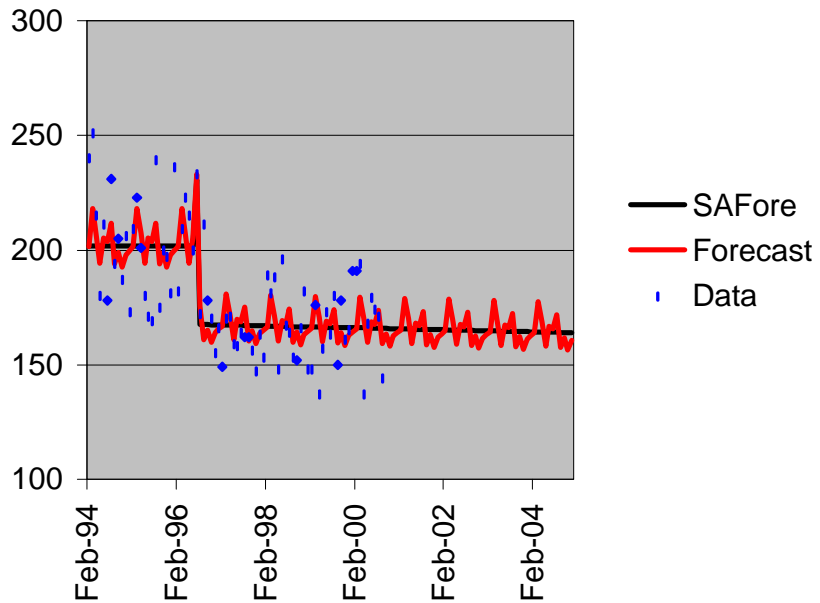


**Group 9 - Medically Needy**

Seasonality accounts for 7 percentage points of explained Inflow variability, March being about 8% higher and November, 5% lower than a typical month.

Seasonally adjusted Inflows are driven largely by programmatic variables. The OHP ramp up and Receipt of Oregon's Welfare Reform Federal Waiver in July 1996 cause a sharp decline and then a positive spike respectively. After the Waiver, inflows are predicted to decline slightly as Oregon's population increases.

**Group 9 - Medically Needy Monthly Inflows**

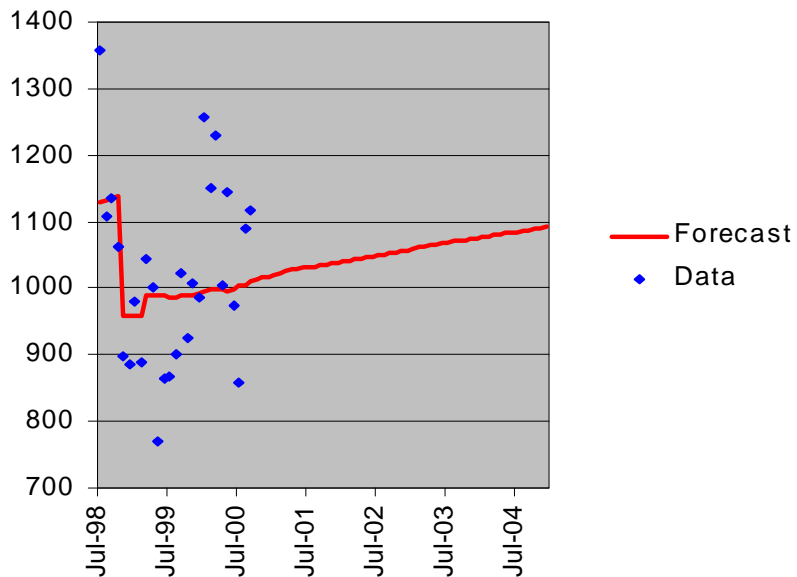


**Group 10 - CHIP**

Because only 30 months of data were available, seasonality was not evaluated for the CHIP program grouping.

Although highly influential statistically, the proportion of the cohort under 20 years of age has a *negative* impact on inflows, which obviously doesn't make sense. Beyond this, projections are largely driven by ARIMA (momentum) factors. I suspect that once sufficient data are available to adjust for what appears to be high levels of seasonality, the model will improve.

**Group 10 - CHIP Monthly Inflows**

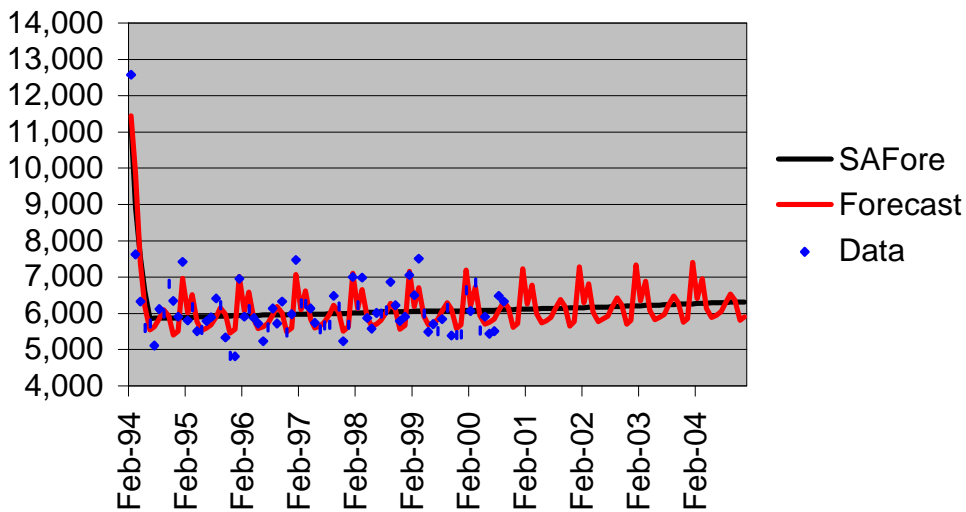


### Group 11 - OHP Kids

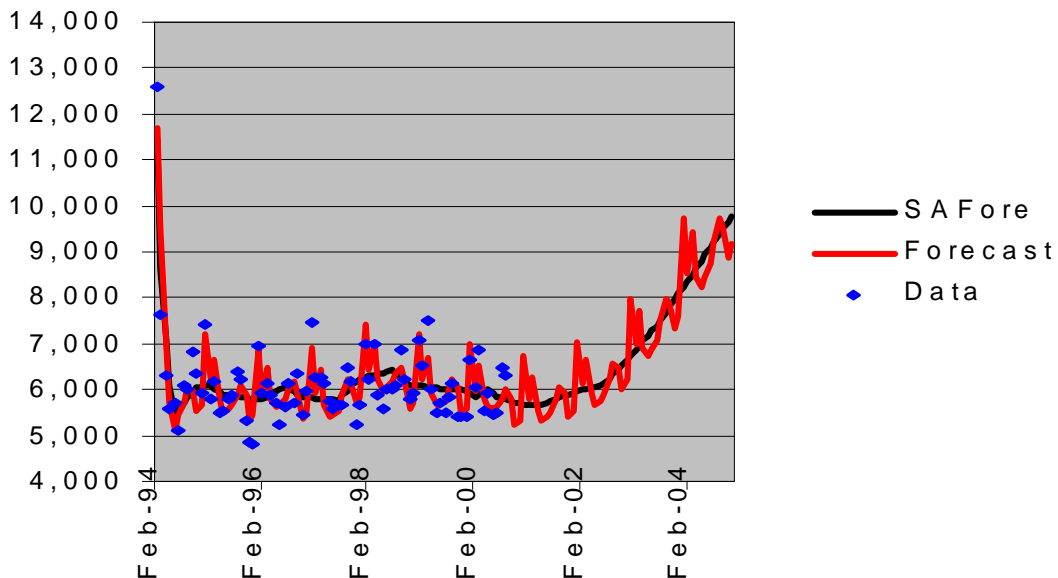
Seasonality accounts for 16 percentage points of explained Inflow variability, January and March being 18% and 11% higher respectively than a typical month. November is about 8% lower.

These remain among the most troublesome inflows to forecast, so I've included two models. Both models show that inflows were significantly affected during the OHP ramp up period. Beyond that, the female teens and young women cohorts, together with Oregon population, conspire to produce radically different results. Both models are logical, with coefficient signs being consistent with expectations. One model shows a gradual increase in inflows culminating in values in the mid-6,000s by the end of the forecast period. The better model in terms of fit, however, shows a sharp increase, with inflows reaching nearly 10,000 by the end of the forecast period; this is nearly what they were prior to the Oregon Health Plan.

#### Group 11 - OHP Kids Monthly Inflows: Model 1



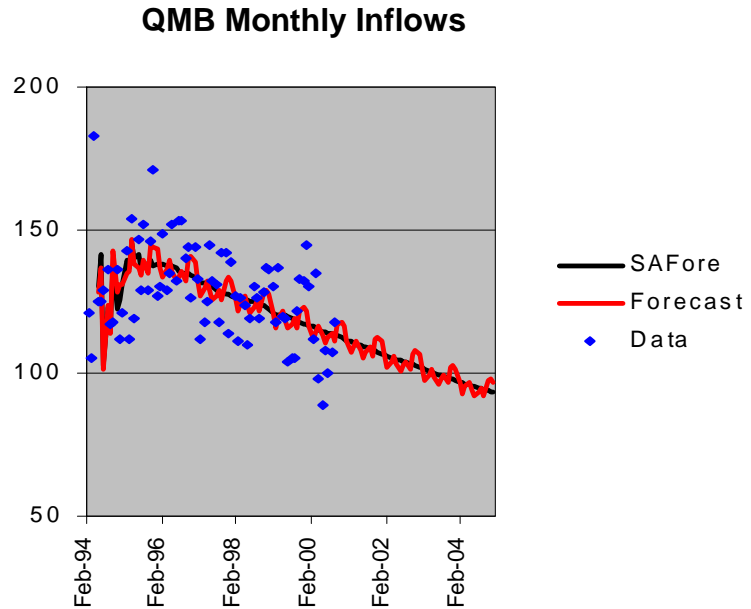
#### Group 11 - OHP Kids Monthly Inflows: Model 2



## Group 12 -- QMB

About 6 percentage points of explained variability in QMB inflows are attributable to seasonality. The most pronounced effect on inflows is real personal income, which in the presence of other variables, is negative as expected.

The discontinuance of program XX in December 1994, appears to have caused a slight increase in inflows that continues to the present. On balance, however, an expected continuing increase in real personal income throughout the forecast period is responsible for the predicted decline in program inflows.



## **Appendix D – Detailed Survival Curves**

FIGURES D.1-D.12



Figure D.2. Unconditional Survival Curves for Program Group 2 (GA)  
by Year of Spell Begin Date, 1994-2000

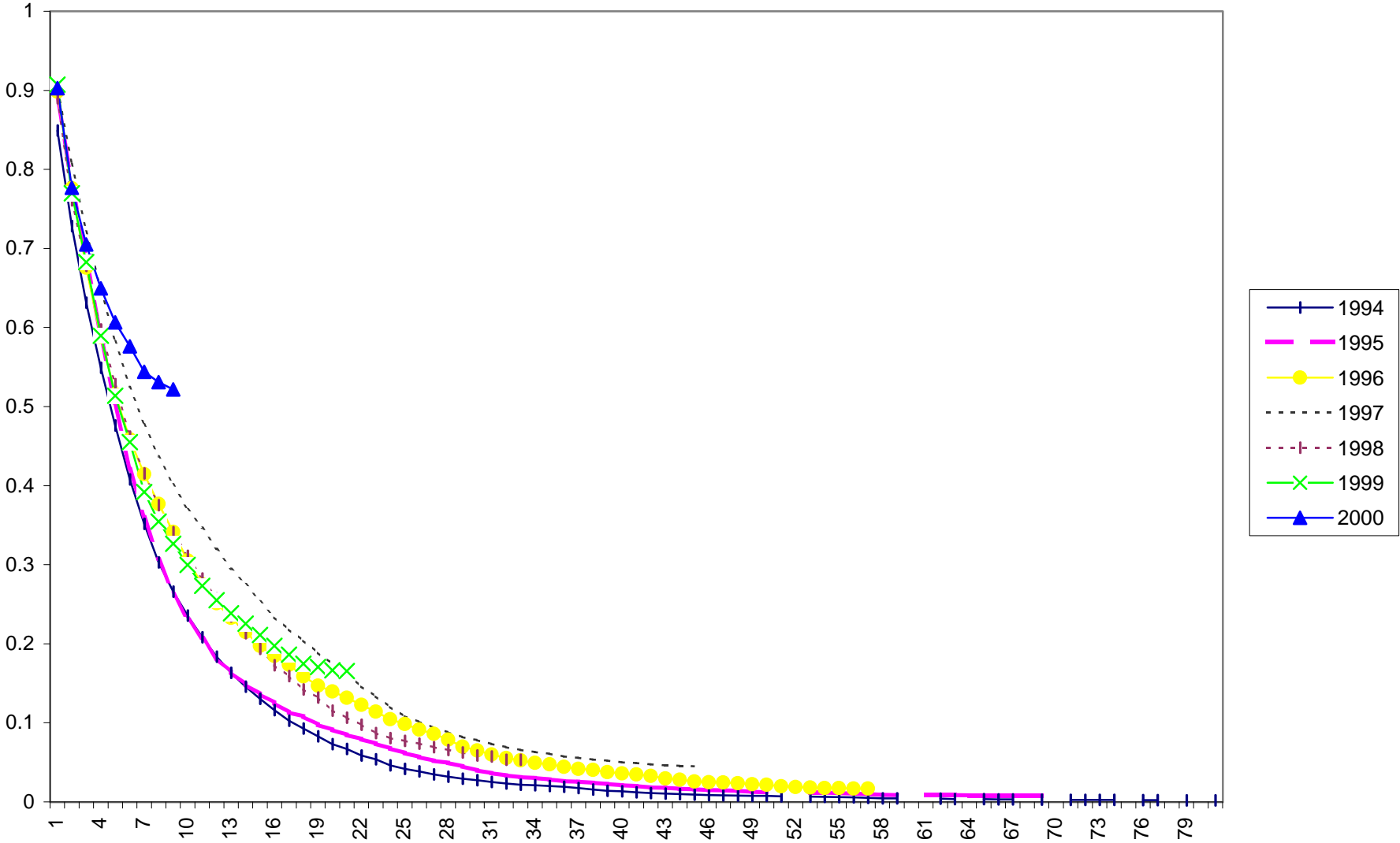




Figure D.4. Unconditional Survival Curves for Program Group 4 (OHP Families)  
by Year of Spell Begin Date, 1994-2000

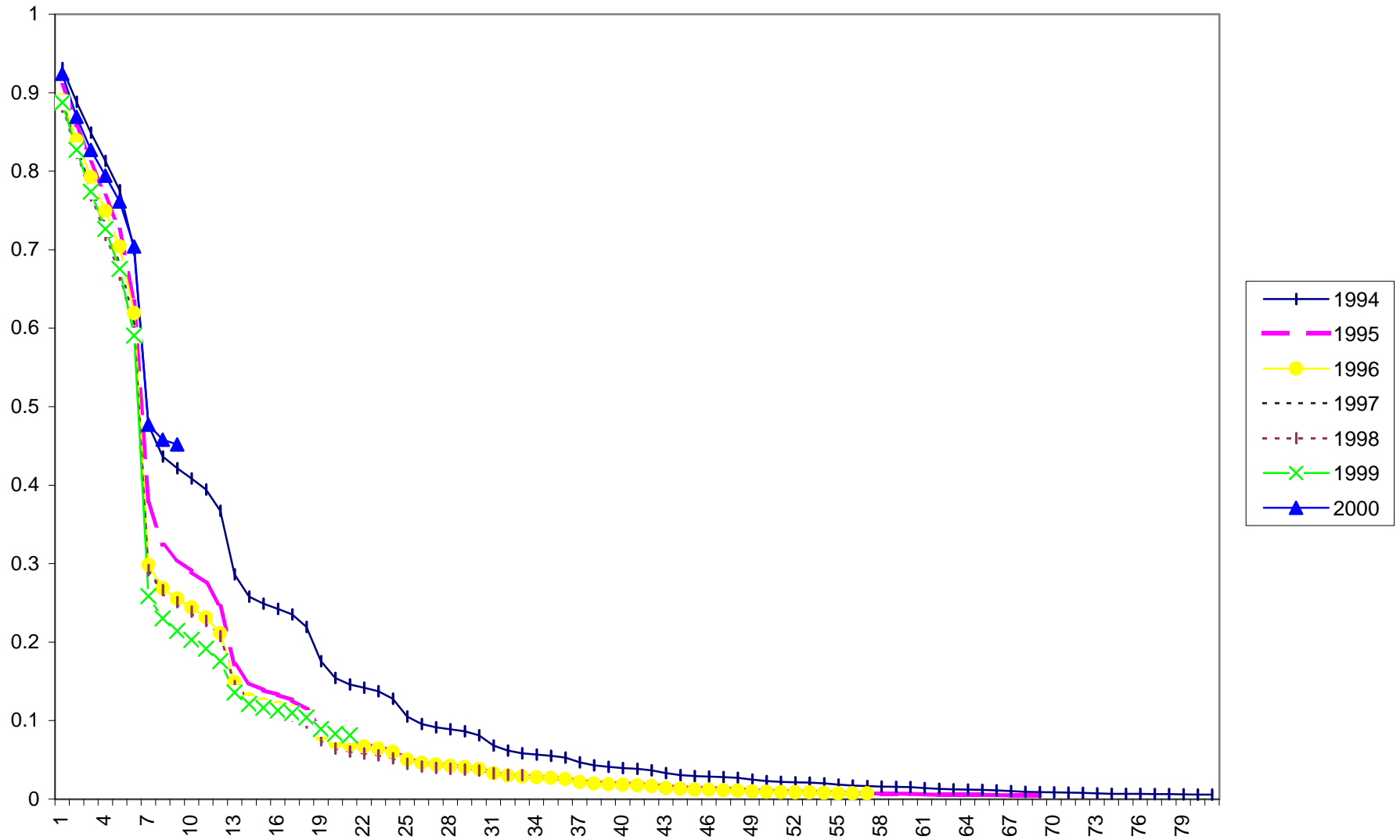


Figure D.5. Unconditional Survival Curves for Program Group 5 (OHP Adults/Couples)  
by Year of Spell Begin Date, 1994-2000

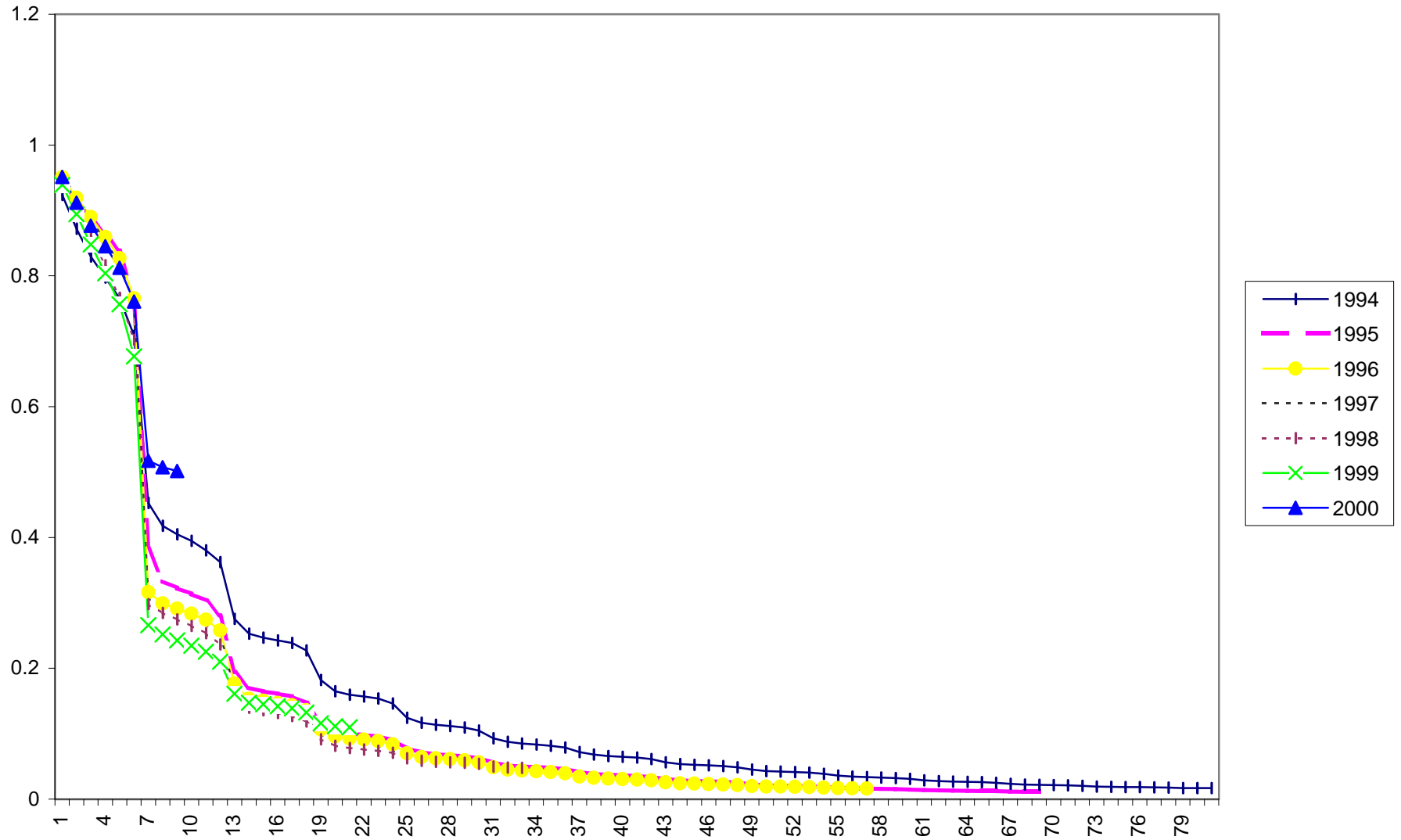


Figure D.6. Unconditional Survival Curves for Program Group 6 (AB/AD)  
by Year of Spell Begin Date, 1994-2000

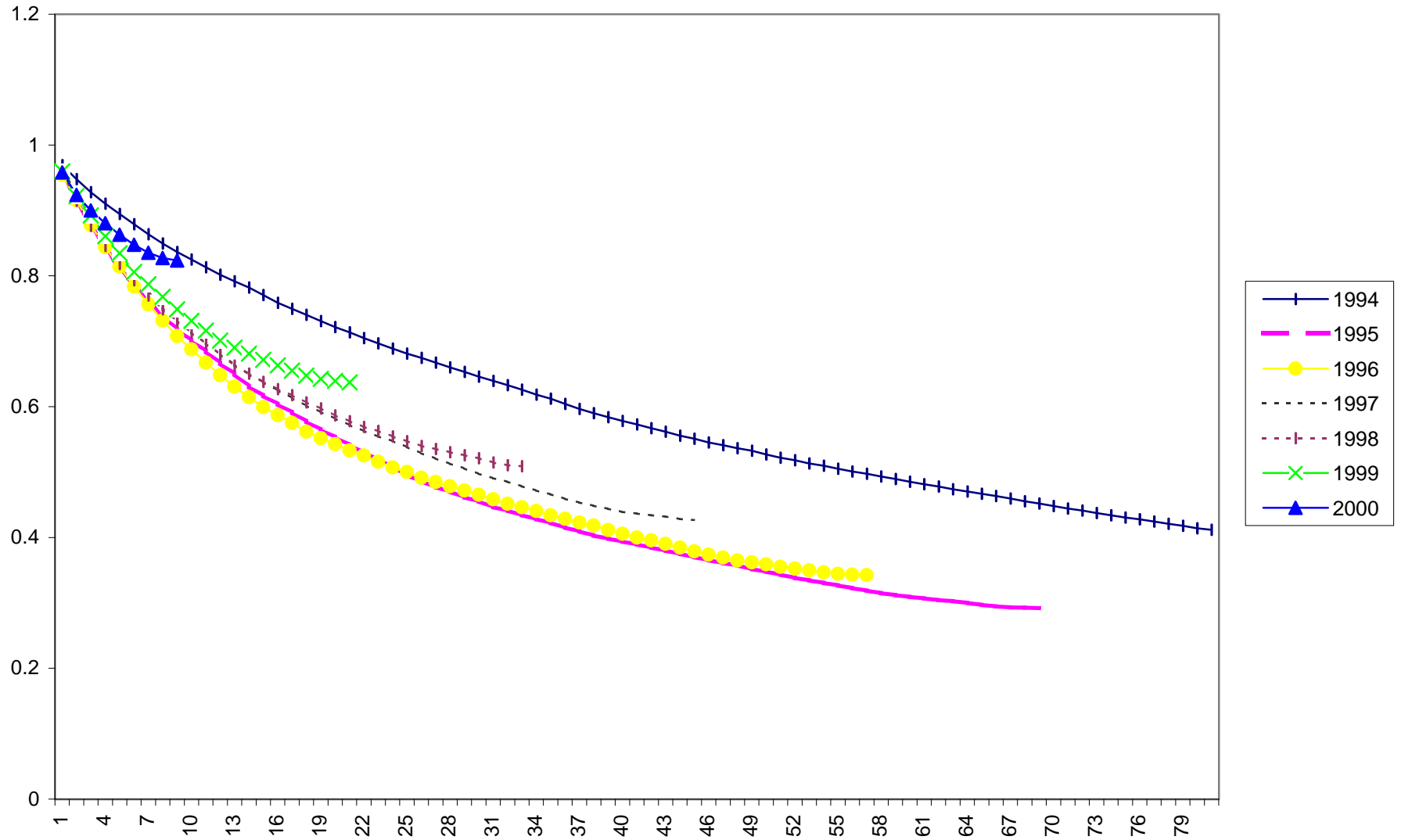
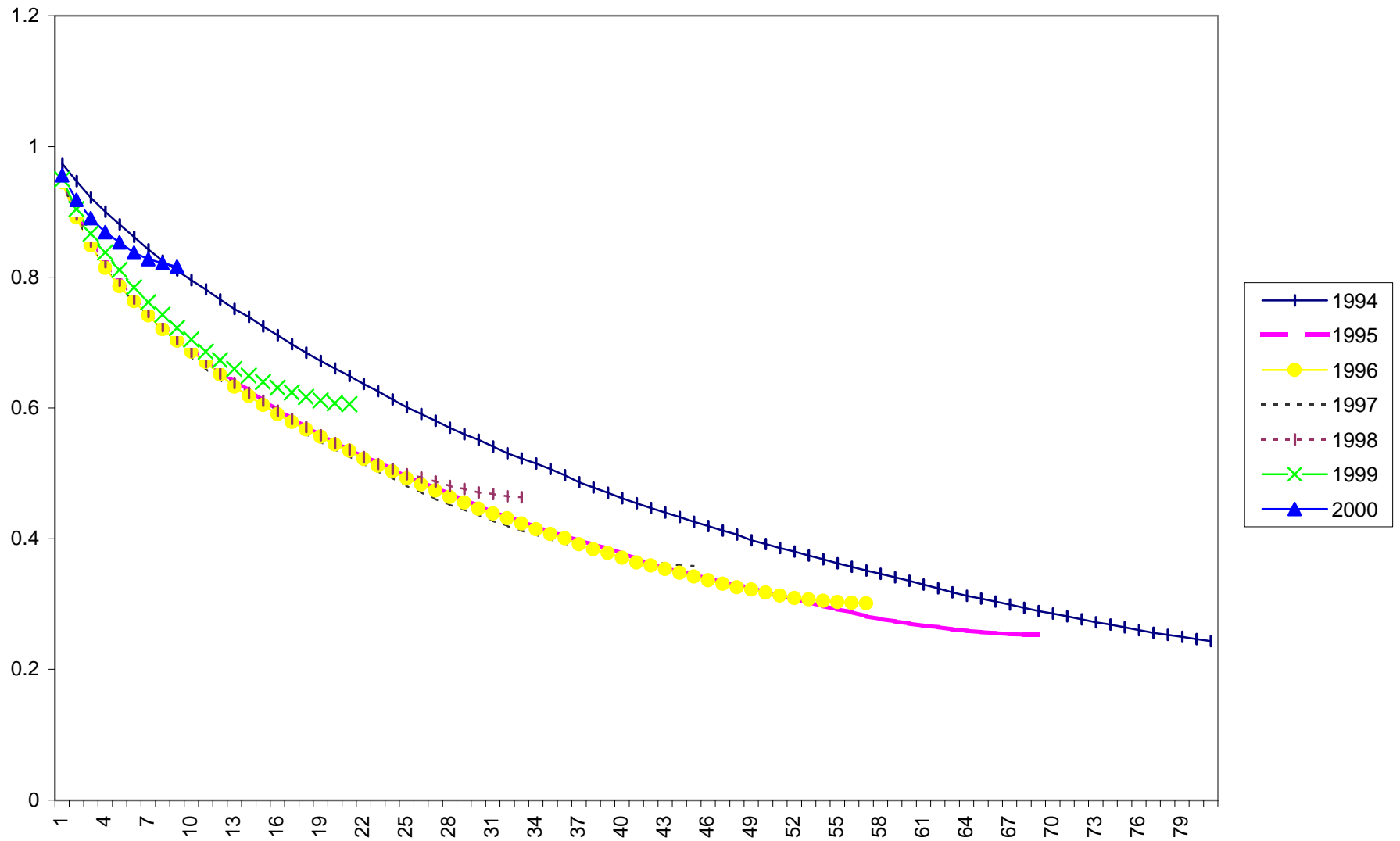


Figure D.7. Unconditional Survival Curves for Program Group 7 (OAA)  
by Year of Spell Begin Date, 1994-2000



**Figure D.8. Unconditional Survival Curves for Program Group 8 (Foster Kids)  
by Year of Spell Begin Date, 1994-2000**

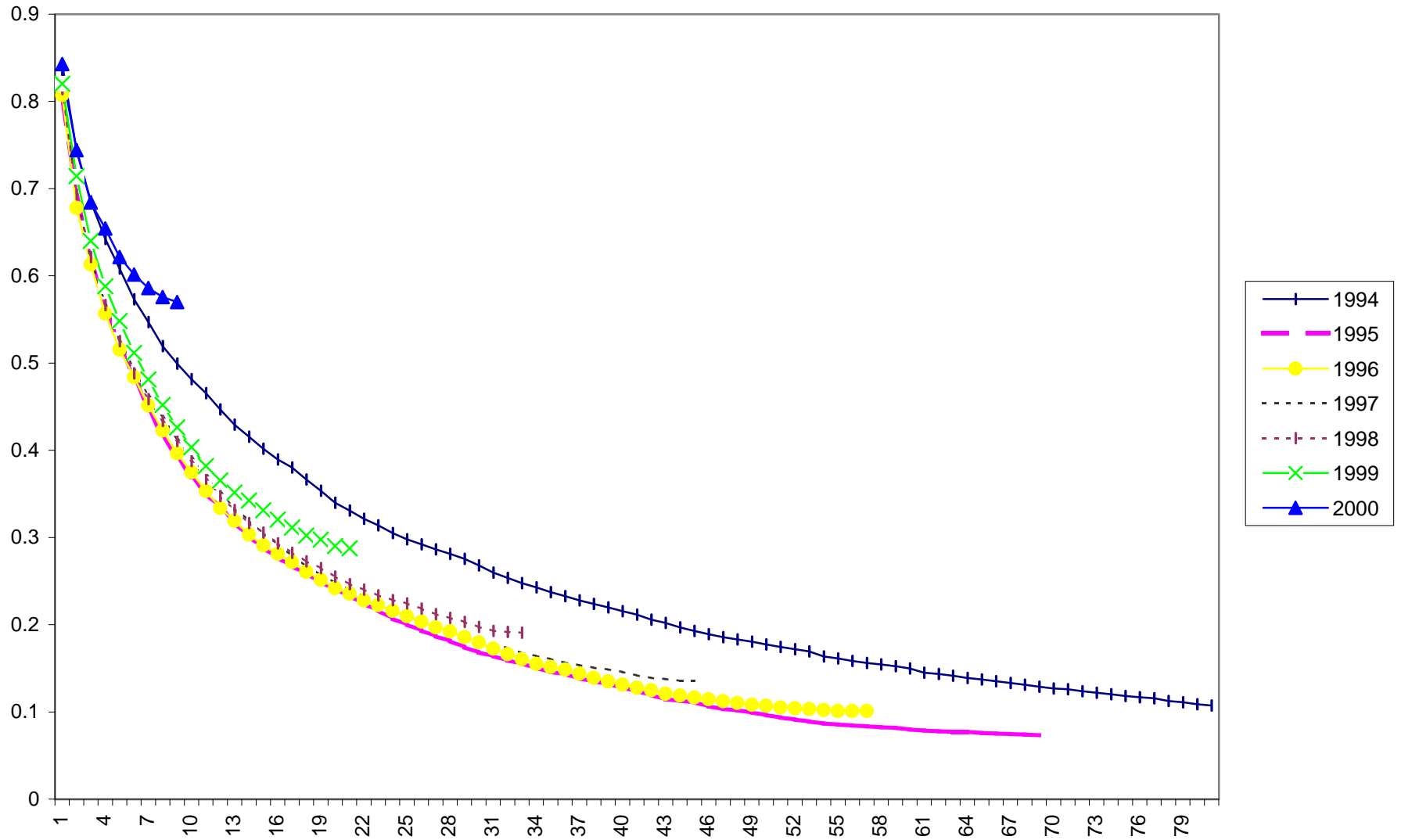
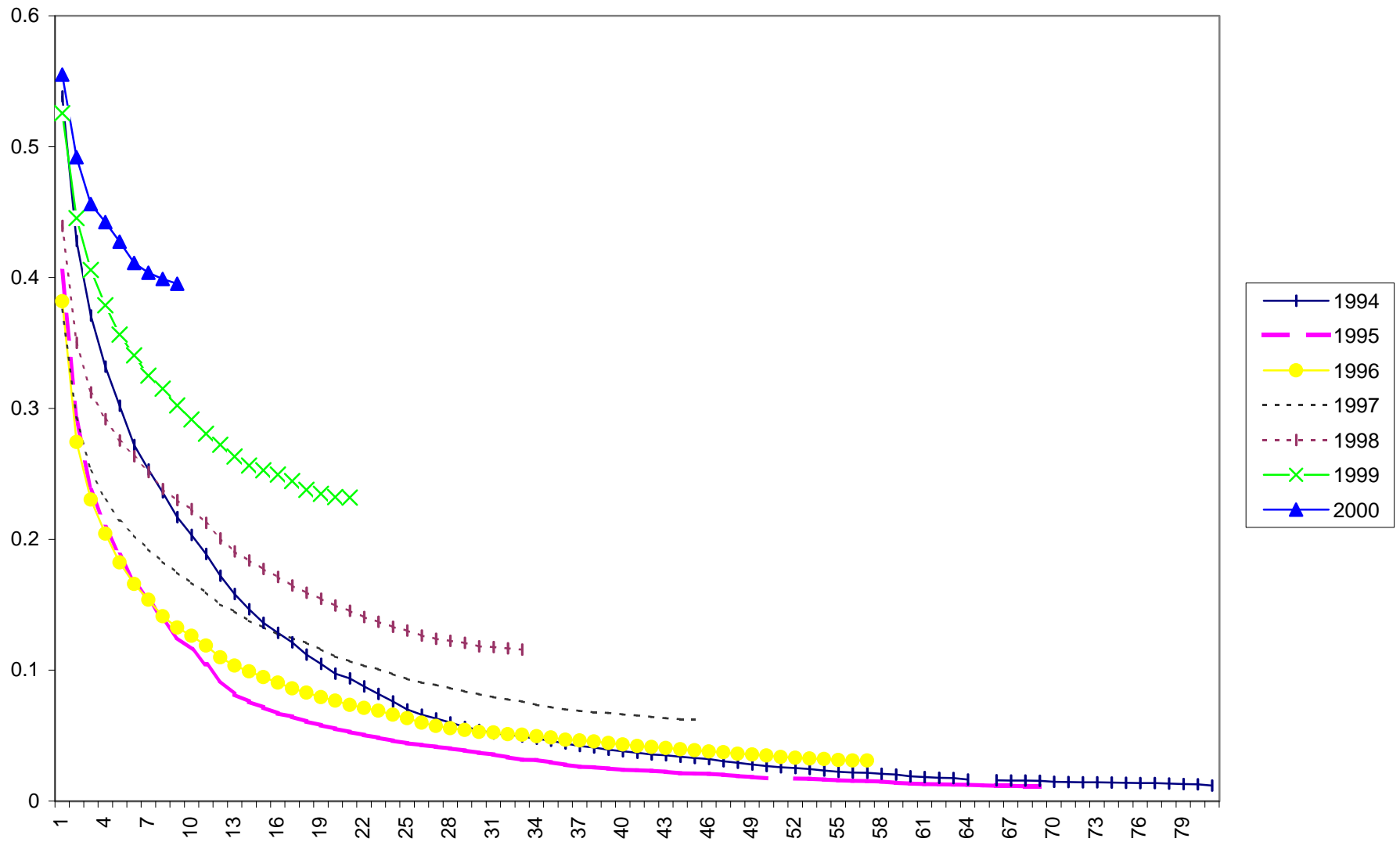


Figure D.9. Unconditional Survival Curves for Program Group 9 (Medically Needy)  
by Year of Spell Begin Date, 1994-2000









## Appendix E – Historical and Forecasted Data Tables

Table E.1. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseloads By Program Group

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12
	TANF	GA	Pregnant Women	OHP Families	OHP Adults & Couples	AB/AD	OAA	Foster Kids	Medically Needy	CHIP	OHP Kids	QMB
Jan-94	137,427	2,347	570	-	7,909	36,355	22,941	7,823	2,761	-	42,022	3,488
Feb-94	136,793	2,819	2,551	13,883	16,969	36,147	23,034	7,940	2,634	-	53,122	3,589
Mar-94	136,339	2,845	3,931	21,790	21,543	36,447	23,226	8,064	2,625	-	58,861	3,644
Apr-94	134,678	2,793	4,822	27,534	24,967	36,792	23,320	8,151	2,617	-	63,358	3,776
May-94	132,939	2,835	5,504	32,196	28,501	37,038	23,453	8,297	2,577	-	67,123	3,847
Jun-94	132,108	2,905	5,967	36,560	31,888	37,278	23,566	8,406	2,578	-	70,763	3,923
Jul-94	130,730	2,961	6,181	39,974	34,800	37,495	23,627	8,329	2,492	-	73,517	4,059
Aug-94	130,382	2,981	6,488	43,147	37,509	37,729	23,774	8,472	2,578	-	76,432	4,114
Sep-94	129,542	2,963	6,671	43,014	37,692	37,929	24,012	8,436	2,560	-	75,073	4,191
Oct-94	128,411	3,037	7,029	44,215	39,535	38,114	24,082	8,469	2,527	-	76,355	4,280
Nov-94	127,865	3,018	7,068	45,653	42,130	38,279	24,230	8,562	2,521	-	78,325	4,365
Dec-94	128,229	3,010	7,076	47,282	44,681	38,370	24,247	8,526	2,544	-	80,552	4,421
Jan-95	128,712	3,078	7,302	50,894	47,762	38,435	24,322	8,848	2,502	-	84,147	4,512
Feb-95	127,638	3,077	7,338	53,008	50,666	38,609	24,494	8,907	2,477	-	86,843	4,625
Mar-95	127,334	3,129	7,313	54,110	53,005	38,811	24,564	9,009	2,483	-	88,484	4,700
Apr-95	125,559	3,118	7,278	55,306	54,878	38,915	24,683	8,964	2,473	-	90,382	4,758
May-95	124,564	3,164	7,220	55,774	56,083	38,909	24,905	9,103	2,467	-	91,118	4,764
Jun-95	123,361	3,166	7,193	56,747	57,290	39,023	25,021	9,316	2,458	-	92,547	4,836
Jul-95	121,293	3,060	7,258	57,385	58,516	39,109	25,108	9,278	2,402	-	93,740	4,946
Aug-95	120,496	2,985	7,378	57,725	59,394	39,404	25,227	9,358	2,493	-	94,986	5,036
Sep-95	119,050	2,908	7,549	57,342	59,381	39,622	25,304	9,260	2,458	-	95,282	5,105
Oct-95	117,222	2,888	7,575	55,796	58,504	39,855	25,416	9,455	2,496	-	94,493	5,175
Nov-95	116,433	2,796	7,481	53,666	56,967	40,083	25,522	9,463	2,487	-	92,231	5,284
Dec-95	115,736	2,749	7,455	51,551	55,666	40,239	25,465	9,422	2,454	-	90,313	5,333
Jan-96	115,252	2,533	7,727	51,037	55,855	40,348	25,597	9,510	2,517	-	90,500	5,391
Feb-96	114,123	2,616	7,829	50,440	55,219	40,540	25,749	9,472	2,445	-	90,711	5,495
Mar-96	113,070	2,691	7,949	49,579	54,546	40,853	25,812	9,456	2,473	-	90,668	5,517
Apr-96	111,082	2,680	8,000	49,441	54,641	41,151	25,932	9,498	2,545	-	91,644	5,562

Table E.1. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseloads By Program Group

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12
	TANF	GA	Pregnant Women	OHP Families	OHP Adults & Couples	AB/AD	OAA	Foster Kids	Medically Needy	CHIP	OHP Kids	QMB
May-96	108,981	2,651	8,106	49,598	54,555	41,357	26,040	9,600	2,568	-	92,590	5,607
Jun-96	107,118	2,590	8,042	49,560	54,156	41,607	26,098	9,589	2,531	-	93,390	5,638
Jul-96	107,236	2,584	7,967	49,070	53,904	41,705	26,127	9,589	2,667	-	93,868	5,672
Aug-96	104,982	2,559	8,044	47,562	52,540	41,887	26,225	9,686	2,645	-	93,270	5,691
Sep-96	102,279	2,583	8,036	45,753	51,336	42,078	26,325	9,634	2,717	-	92,016	5,679
Oct-96	99,392	2,577	8,055	44,842	50,856	42,241	26,511	9,798	2,750	-	92,193	5,712
Nov-96	96,831	2,563	7,989	43,593	49,801	42,202	26,597	9,917	2,747	-	91,100	5,699
Dec-96	95,523	2,568	7,957	43,256	49,627	42,230	26,503	9,911	2,791	-	91,458	5,729
Jan-97	94,585	2,685	8,186	44,532	50,757	42,043	26,510	10,007	2,808	-	93,939	5,699
Feb-97	92,756	2,781	8,304	45,211	51,388	41,798	26,444	10,130	2,786	-	95,296	5,679
Mar-97	90,782	2,848	8,299	45,274	51,484	41,839	26,446	10,269	2,847	-	96,020	5,667
Apr-97	88,780	2,917	8,256	45,767	51,775	41,959	26,525	10,335	2,893	-	96,421	5,663
May-97	86,110	3,000	8,293	45,472	51,294	41,987	26,539	10,395	2,908	-	96,507	5,683
Jun-97	84,050	3,041	8,256	46,051	51,072	42,069	26,543	10,507	2,958	-	97,212	5,724
Jul-97	83,352	3,060	8,231	44,545	51,712	42,171	26,583	10,486	3,001	-	96,926	5,733
Aug-97	83,138	3,067	8,144	43,607	50,189	42,220	26,692	10,470	3,046	-	95,466	5,693
Sep-97	82,999	3,083	8,142	42,809	49,290	42,395	26,737	10,567	3,092	-	94,809	5,707
Oct-97	82,505	3,165	8,035	42,249	48,685	42,519	26,790	10,623	3,145	-	94,159	5,713
Nov-97	81,744	3,193	7,888	40,857	47,771	42,486	26,812	10,704	3,228	-	92,534	5,652
Dec-97	82,032	3,171	7,892	40,664	47,789	42,643	26,757	10,735	3,340	-	92,418	5,678
Jan-98	82,210	3,178	8,199	41,429	49,167	42,674	26,669	10,807	3,416	-	93,653	5,631
Feb-98	81,754	3,235	8,299	41,935	49,530	42,851	26,731	10,912	3,461	-	94,359	5,613
Mar-98	81,597	3,246	8,522	43,151	50,530	42,921	26,884	10,979	3,548	-	96,017	5,592
Apr-98	81,176	3,274	8,617	43,474	50,555	43,118	26,999	11,039	3,658	-	96,018	5,551
May-98	80,222	3,234	8,617	43,335	49,555	43,274	27,024	11,089	3,697	-	95,475	5,537
Jun-98	79,841	3,205	8,554	44,367	49,574	43,363	27,177	11,148	3,810	-	96,655	5,549
Jul-98	78,863	3,147	8,871	42,726	52,433	43,659	27,254	10,843	3,882	2,168	95,421	5,508
Aug-98	77,860	3,170	8,874	42,346	51,216	43,877	27,356	10,918	3,944	4,196	94,614	5,497
Sep-98	77,703	3,206	8,973	42,551	50,374	44,082	27,460	10,934	4,033	6,261	95,186	5,479
Oct-98	76,875	3,238	9,053	41,889	49,172	44,261	27,517	11,071	4,072	8,308	94,149	5,451
Nov-98	76,319	3,249	9,047	41,553	48,394	44,409	27,620	11,098	4,125	9,942	93,629	5,455

Table E.1. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseloads By Program Group

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12
	TANF	GA	Pregnant Women	OHP Families	OHP Adults & Couples	AB/AD	OAA	Foster Kids	Medically Needy	CHIP	OHP Kids	QMB
Dec-98	76,559	3,254	9,054	41,674	48,383	44,573	27,647	11,139	4,225	11,187	93,730	5,465
Jan-99	76,568	3,249	9,339	42,552	49,252	44,704	27,715	11,241	4,297	12,060	95,359	5,412
Feb-99	76,687	3,301	9,443	43,108	50,194	45,087	27,710	11,086	4,362	12,048	96,565	5,386
Mar-99	77,049	3,316	9,599	44,776	52,134	45,364	27,780	11,241	4,473	12,384	99,211	5,390
Apr-99	76,657	3,304	9,576	45,008	52,749	45,562	27,872	11,370	4,506	12,825	99,816	5,336
May-99	76,120	3,328	9,548	44,688	52,745	45,827	27,965	11,404	4,561	12,974	100,093	5,344
Jun-99	76,332	3,313	9,511	44,694	52,997	46,054	28,120	11,515	4,663	13,376	100,602	5,326
Jul-99	76,451	3,305	9,398	44,164	52,524	46,301	28,243	11,555	4,718	13,858	100,170	5,293
Aug-99	77,123	3,258	9,321	43,159	51,356	46,546	28,393	11,576	4,831	14,572	98,637	5,258
Sep-99	77,508	3,267	9,171	42,043	50,452	46,706	28,521	11,606	4,890	15,184	97,115	5,237
Oct-99	77,478	3,305	9,024	40,237	48,669	46,990	28,631	11,631	4,959	15,636	94,267	5,212
Nov-99	78,202	3,277	8,924	39,081	47,920	47,171	28,716	11,706	5,033	16,248	92,364	5,203
Dec-99	79,263	3,213	8,488	38,445	47,542	47,344	28,751	11,659	5,101	16,735	91,136	5,207
Jan-00	77,860	3,213	8,630	38,781	48,149	47,563	28,763	11,721	5,226	17,440	91,954	5,144
Feb-00	78,417	3,179	8,672	39,167	48,491	47,712	28,931	11,825	5,290	17,557	92,358	5,091
Mar-00	79,153	3,156	8,787	40,115	49,466	47,962	29,125	11,894	5,397	17,776	94,207	5,107
Apr-00	79,080	3,134	8,765	39,863	49,458	48,211	29,194	11,931	5,511	17,524	93,935	4,958
May-00	79,320	3,149	8,684	40,180	50,335	48,471	29,272	12,080	5,588	17,584	94,740	4,895
Jun-00	79,169	3,190	8,668	40,201	50,680	48,686	29,428	12,114	5,655	17,648	94,946	4,865
Jul-00	78,641	3,182	8,695	40,111	50,680	48,825	29,489	12,011	5,741	17,543	95,324	4,827
Aug-00	78,319	3,248	8,657	39,764	50,578	48,998	29,623	12,068	5,837	17,860	94,993	4,780
Sep-00	77,611	3,281	8,454	39,277	50,338	49,111	29,689	12,143	5,893	17,990	94,719	4,790
Oct-00	78,011	3,320	8,548	38,856	50,415	49,350	29,886	12,150	5,679	18,201	95,217	4,790
Nov-00	78,201	3,333	8,532	38,517	50,508	49,515	30,051	12,146	5,570	18,409	95,468	4,765
Dec-00	78,306	3,345	8,545	38,405	50,528	49,645	30,190	12,123	5,491	18,632	95,845	4,745
Jan-01	78,570	3,376	8,836	39,356	51,798	49,827	30,410	12,184	5,421	18,904	97,809	4,725
Feb-01	78,400	3,398	8,897	39,680	52,276	49,960	30,591	12,209	5,361	19,116	98,492	4,707
Mar-01	78,461	3,438	9,032	40,128	52,865	50,178	30,793	12,238	5,319	19,171	99,543	4,700
Apr-01	78,341	3,469	9,030	40,104	53,050	50,377	31,007	12,263	5,264	19,285	99,627	4,686
May-01	78,088	3,484	8,941	40,009	52,847	50,548	31,205	12,277	5,206	19,475	99,655	4,664
Jun-01	78,138	3,506	8,881	40,028	52,833	50,747	31,368	12,326	5,165	19,662	99,884	4,648

Table E.1. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseloads By Program Group

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10	Group 11	Group 12
	TANF	GA	Pregnant Women	OHP Families	OHP Adults & Couples	AB/AD	OAA	Foster Kids	Medically Needy	CHIP	OHP Kids	QMB
Jul-01	78,950	3,518	8,860	39,992	52,844	50,952	31,544	12,364	5,123	19,862	100,167	4,632
Aug-01	79,570	3,555	8,857	39,709	52,336	51,226	31,736	12,420	5,092	20,079	100,303	4,623
Sep-01	80,219	3,588	8,873	39,540	52,095	51,493	31,921	12,458	5,046	20,229	100,806	4,602
Oct-01	80,570	3,627	8,884	39,210	51,846	51,773	32,106	12,512	5,014	20,389	100,956	4,586
Nov-01	80,738	3,639	8,793	38,873	51,620	51,978	32,263	12,540	4,976	20,535	100,842	4,565
Dec-01	80,804	3,634	8,739	38,795	51,734	52,135	32,395	12,537	4,947	20,675	100,998	4,546
Jan-02	81,070	3,659	8,981	39,677	53,002	52,353	32,612	12,616	4,919	20,823	102,643	4,529
Feb-02	80,886	3,676	9,005	39,953	53,415	52,515	32,787	12,654	4,894	20,984	103,027	4,514
Mar-02	80,878	3,701	9,111	40,505	54,192	52,763	32,986	12,690	4,883	21,120	103,900	4,507
Apr-02	80,694	3,725	9,096	40,518	54,421	52,995	33,199	12,721	4,859	21,267	103,822	4,495
May-02	80,413	3,738	9,005	40,377	54,167	53,198	33,396	12,743	4,827	21,398	103,656	4,475
Jun-02	80,435	3,756	8,943	40,351	54,143	53,435	33,557	12,797	4,811	21,515	103,741	4,462
Jul-02	81,221	3,764	8,921	40,273	54,125	53,681	33,736	12,840	4,792	21,642	103,852	4,450
Aug-02	81,806	3,799	8,912	39,958	53,554	54,008	33,931	12,899	4,782	21,806	103,822	4,444
Sep-02	82,397	3,830	8,923	39,787	53,294	54,329	34,114	12,940	4,753	21,930	104,241	4,427
Oct-02	82,683	3,866	8,931	39,463	53,027	54,664	34,296	12,996	4,738	22,064	104,322	4,415
Nov-02	82,800	3,876	8,839	39,115	52,759	54,916	34,448	13,024	4,717	22,167	104,113	4,398
Dec-02	82,819	3,867	8,784	39,017	52,844	55,115	34,570	13,022	4,703	22,259	104,172	4,383
Jan-03	83,048	3,891	9,027	39,871	54,090	55,386	34,778	13,101	4,690	22,357	105,732	4,369
Feb-03	82,822	3,905	9,052	40,126	54,472	55,590	34,941	13,138	4,678	22,474	106,019	4,358
Mar-03	82,771	3,930	9,157	40,664	55,232	55,897	35,123	13,172	4,680	22,578	106,820	4,354
Apr-03	82,544	3,952	9,141	40,672	55,443	56,182	35,315	13,201	4,665	22,695	106,681	4,345
May-03	82,223	3,963	9,048	40,521	55,163	56,433	35,489	13,221	4,644	22,788	106,449	4,329
Jun-03	82,215	3,981	8,986	40,482	55,119	56,726	35,625	13,273	4,636	22,868	106,465	4,318

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseloads Flows**

Month	TANF				General Assistance				Pregnant Females			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Feb-94	5980	1532	5417	2732	262	604	144	250	1233	1317	38	532
Mar-94	5494	1962	5330	2581	208	236	173	245	1007	539	43	123
Apr-94	4835	2047	5761	2782	126	253	173	258	851	438	156	241
May-94	4744	2443	6052	2878	156	271	149	236	833	346	153	344
Jun-94	5136	2573	5874	2666	119	283	123	208	883	270	174	516
Jul-94	4936	2594	6413	2495	126	309	134	245	766	237	249	540
Aug-94	5470	2764	6172	2413	140	284	154	250	901	251	291	554
Sep-94	5484	2794	6717	2402	112	277	143	263	865	291	286	686
Oct-94	5064	2525	6324	2403	133	298	132	225	899	314	285	570
Nov-94	4815	3091	6055	2398	86	289	147	247	864	232	330	727
Dec-94	4798	2987	5202	2218	113	264	148	237	843	223	319	739
Jan-95	5077	3339	5392	2544	134	303	128	241	1072	284	278	852
Feb-95	4179	2830	5403	2684	91	296	144	243	852	231	288	759
Mar-95	4593	2900	5128	2667	108	331	146	241	917	281	279	944
Apr-95	3883	2687	5606	2739	72	287	113	256	752	263	276	773
May-95	4000	2566	5423	2139	93	309	120	238	762	264	270	814
Jun-95	4242	2734	5654	2527	92	270	107	253	782	284	302	791
Jul-95	4239	2722	6407	2628	67	250	131	292	799	298	278	754
Aug-95	4988	3076	6114	2749	89	236	122	278	896	329	293	813
Sep-95	4715	2738	6236	2664	82	209	128	239	866	369	299	765
Oct-95	4502	2601	6444	2488	90	234	102	242	779	346	322	777
Nov-95	4393	2796	5789	2187	79	206	124	253	766	343	384	819
Dec-95	3648	2696	5142	1899	52	221	96	223	746	371	370	773
Jan-96	4180	2881	5246	2301	71	197	117	368	1114	307	364	785
Feb-96	3643	2601	5085	2288	93	292	97	205	846	348	389	703
Mar-96	3619	2243	4738	2175	72	292	86	202	899	337	372	744
Apr-96	3297	2209	5234	2260	75	252	88	250	872	310	362	769
May-96	3270	2048	5263	2156	65	236	96	234	851	330	353	722
Jun-96	3343	1949	5089	2066	50	203	99	215	798	300	367	795

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseloads Flows**

Month	TANF				General Assistance				Pregnant Females			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jul-96	5125	2116	4953	2173	71	181	77	181	856	359	431	860
Aug-96	2994	1918	4999	2166	65	198	84	204	870	324	365	752
Sep-96	3012	1846	5315	2247	89	184	84	165	868	341	427	790
Oct-96	2937	1829	5215	2439	79	209	90	204	903	344	333	895
Nov-96	2610	1949	5107	2012	73	174	88	173	773	341	293	887
Dec-96	2708	1984	4249	1751	60	184	86	153	812	287	301	830
Jan-97	2859	2085	3958	1924	84	292	97	162	1092	306	281	889
Feb-97	2169	1824	3835	1988	67	283	96	158	931	298	252	859
Mar-97	2202	1732	3860	2053	76	277	79	206	873	296	314	860
Apr-97	2221	1670	3768	2128	80	279	77	213	840	321	380	824
May-97	1862	1701	4154	2077	74	274	97	168	774	301	366	672
Jun-97	2314	1632	3982	2026	76	236	88	183	845	264	378	768
Jul-97	3397	2028	4309	1814	64	230	89	185	852	329	391	815
Aug-97	3317	1906	3657	1779	60	220	100	173	803	301	427	764
Sep-97	3650	2015	3914	1892	79	221	76	208	864	295	386	775
Oct-97	3299	1880	3722	1952	89	262	90	179	843	303	422	831
Nov-97	2930	1798	3847	1642	76	187	85	150	758	287	428	764
Dec-97	3236	1898	3346	1501	70	183	92	183	938	272	405	801
Jan-98	3345	2006	3391	1784	78	187	88	170	1125	324	393	748
Feb-98	2825	1760	3272	1771	69	248	86	174	913	320	389	743
Mar-98	2866	1838	3102	1762	84	233	108	198	1050	306	383	750
Apr-98	2904	1834	3291	1872	83	254	88	221	956	301	384	778
May-98	2932	1764	3868	1780	62	196	98	200	856	318	437	737
Jun-98	3156	1916	3607	1846	96	200	98	227	876	288	431	796
Jul-98	3190	1829	4056	1943	81	208	131	216	1045	365	272	820
Aug-98	3430	1812	4349	1899	85	226	105	183	925	324	471	775
Sep-98	3757	1817	3870	1865	76	223	81	181	1026	377	461	843
Oct-98	3203	1901	3937	1991	61	234	95	168	1005	431	505	850
Nov-98	3403	1839	3904	1894	73	230	104	188	925	359	483	807
Dec-98	3303	2113	3448	1726	78	203	97	179	990	341	487	837

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseloads Flows**

Month	TANF				General Assistance				Pregnant Females			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jan-99	3184	2140	3412	1903	81	204	78	212	1220	362	475	821
Feb-99	2888	1967	3020	1716	73	265	90	196	1004	339	468	771
Mar-99	3249	1976	2906	1958	82	248	90	225	1137	350	510	821
Apr-99	2897	2023	3358	1955	88	273	107	266	936	342	491	810
May-99	2716	1935	3354	1831	80	250	89	217	815	356	441	758
Jun-99	3139	2205	3182	1951	99	234	82	266	965	339	526	815
Jul-99	3575	2126	3730	1849	78	236	92	230	900	347	531	829
Aug-99	3793	2286	3632	1778	80	227	96	258	912	337	519	807
Sep-99	3772	2269	3921	1734	90	251	96	236	937	339	595	830
Oct-99	3463	2230	3930	1789	96	234	81	210	967	317	603	828
Nov-99	3613	2282	3433	1739	90	234	129	223	890	366	634	722
Dec-99	3440	2401	3215	1565	73	252	107	282	876	315	803	824
Jan-00	3630	2205	4768	2470	107	211	91	227	1138	328	509	815
Feb-00	3278	2047	3282	1489	74	224	80	252	966	299	526	697
Mar-00	3300	2211	2995	1780	94	237	105	247	1036	283	444	760
Apr-00	2894	2016	3213	1769	84	223	102	227	884	294	522	678
May-00	3145	2269	3335	1839	94	225	94	210	951	286	499	819
Jun-00	3179	2198	3569	1963	101	243	83	220	922	338	523	752
Jul-00	3254	2140	3790	2136	97	229	110	224	893	355	501	720
Aug-00	3544	2277	4050	2094	96	271	107	193	954	350	502	839
Sep-00	3334	2149	4077	2112	91	249	109	198	922	320	567	878
Oct-00	3,492	2,121	3,490	1,723	104	232	94	204	950	319	416	759
Nov-00	3,401	2,044	3,519	1,737	94	219	95	206	879	304	424	774
Dec-00	3,350	2,037	3,537	1,746	87	226	95	207	920	304	429	783
Jan-01	3,550	2,005	3,542	1,748	111	222	95	206	1,200	299	428	781
Feb-01	3,044	2,088	3,550	1,752	97	228	96	208	977	309	434	791
Mar-01	3,197	2,159	3,545	1,750	108	239	96	210	1,044	321	435	795
Apr-01	2,970	2,184	3,531	1,743	105	236	97	212	933	321	444	811
May-01	2,883	2,124	3,522	1,738	98	230	98	214	871	311	450	821
Jun-01	3,201	2,089	3,508	1,731	110	226	99	215	913	305	452	826

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseloads Flows**

Month	TANF				General Assistance				Pregnant Females			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jul-01	3,945	2,101	3,505	1,730	98	229	99	216	951	308	453	827
Aug-01	3,714	2,200	3,545	1,750	105	248	99	216	946	327	452	824
Sep-01	3,831	2,180	3,590	1,772	113	239	100	219	967	321	451	822
Oct-01	3,548	2,218	3,625	1,789	118	243	101	221	961	327	452	825
Nov-01	3,455	2,155	3,644	1,799	106	233	103	224	886	315	457	835
Dec-01	3,402	2,112	3,648	1,801	99	223	103	224	925	306	455	831
Jan-02	3,604	2,112	3,649	1,801	125	225	102	223	1,203	307	449	819
Feb-02	3,090	2,178	3,650	1,802	110	234	103	224	978	317	450	822
Mar-02	3,245	2,186	3,642	1,798	121	233	103	225	1,046	318	445	813
Apr-02	3,014	2,221	3,628	1,791	118	236	104	226	934	322	450	821
May-02	2,925	2,188	3,612	1,783	111	235	105	228	872	317	454	828
Jun-02	3,247	2,145	3,595	1,775	123	229	105	229	915	310	455	831
Jul-02	4,002	2,164	3,602	1,778	110	232	105	230	953	314	456	833
Aug-02	3,766	2,261	3,644	1,799	118	253	106	230	948	333	457	833
Sep-02	3,884	2,220	3,692	1,822	127	242	106	232	970	325	454	829
Oct-02	3,597	2,254	3,725	1,839	132	246	108	234	963	330	455	830
Nov-02	3,502	2,200	3,739	1,846	119	237	109	237	888	319	460	839
Dec-02	3,448	2,158	3,740	1,846	110	227	109	237	927	311	458	835
Jan-03	3,653	2,159	3,738	1,845	140	229	108	236	1,205	312	451	823
Feb-03	3,131	2,224	3,737	1,845	122	238	109	237	981	322	452	826
Mar-03	3,287	2,227	3,725	1,839	135	236	109	238	1,049	322	448	817
Apr-03	3,053	2,257	3,708	1,830	132	239	110	239	936	325	452	825
May-03	2,962	2,227	3,689	1,821	124	238	110	241	874	321	456	832
Jun-03	3,288	2,184	3,670	1,811	138	232	111	241	917	314	458	835

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	OHP Families				OHP Adults and Couples				AB/AD			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Feb-94	12670	1213	0	0	11410	388	780	1958	475	337	485	535
Mar-94	7374	999	89	377	6193	239	701	1155	522	364	408	178
Apr-94	5344	1154	190	564	4824	272	590	1081	468	425	397	151
May-94	4552	1136	284	742	4471	334	410	861	465	351	406	164
Jun-94	4344	1167	357	790	4351	315	425	852	442	374	444	132
Jul-94	3711	1117	544	870	3746	361	413	780	456	338	442	135
Aug-94	4085	1235	1129	1018	4186	450	1071	857	510	347	441	182
Sep-94	4061	1358	4449	1104	4077	493	3548	839	474	370	477	167
Oct-94	4296	1161	3221	1037	4618	488	2485	779	480	295	470	120
Nov-94	4176	1186	2690	1233	4829	510	2091	652	470	317	459	161
Dec-94	3902	1264	2305	1232	4600	480	1847	681	399	310	474	144
Jan-95	4859	2979	2219	2007	6191	1175	1889	2397	445	327	547	160
Feb-95	3848	1491	2077	1148	5028	465	1846	743	360	346	385	146
Mar-95	3989	1622	3227	1283	5362	566	2739	852	422	347	414	153
Apr-95	3611	1528	2777	1165	4594	491	2471	741	425	342	464	198
May-95	3490	1346	3210	1158	4396	495	2939	747	407	324	446	291
Jun-95	3695	1489	3042	1168	4603	497	3084	809	415	330	418	212
Jul-95	3605	1465	3259	1172	4671	549	3206	788	391	350	456	199
Aug-95	3756	1597	3636	1375	4882	588	3698	894	539	369	454	159
Sep-95	3671	1526	4323	1257	4471	569	4184	867	471	402	471	183
Oct-95	2632	1471	4363	1286	3824	575	4449	827	498	367	445	187
Nov-95	2582	1441	4891	1262	3750	567	4954	900	459	423	421	233
Dec-95	2723	1277	4831	1284	3620	533	4679	775	426	364	496	138
Jan-96	4189	1388	4767	1324	5114	670	4796	799	444	374	508	201
Feb-96	3459	1290	4150	1196	4342	457	4613	822	415	379	407	195
Mar-96	3496	1362	4589	1129	4437	509	4764	855	428	443	394	165
Apr-96	3242	1317	3574	1123	4316	505	3927	800	469	467	435	203
May-96	3206	1271	3289	1031	4003	489	3797	783	409	470	489	184
Jun-96	2841	1217	3164	930	3607	483	3797	692	429	417	452	144

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	OHP Families				OHP Adults and Couples				AB/AD			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jul-96	3076	1373	3864	1075	3820	544	3876	740	426	367	491	204
Aug-96	3240	1287	4996	1039	3649	553	4861	705	464	385	468	198
Sep-96	3041	1327	5255	922	3696	493	4704	689	471	367	482	165
Oct-96	3261	1392	4683	881	4105	507	4337	756	489	359	468	217
Nov-96	2814	1271	4395	939	3473	481	4302	707	376	327	512	230
Dec-96	3203	1125	3784	881	3686	462	3702	621	363	289	433	191
Jan-97	4241	1340	3362	943	4806	597	3439	834	416	308	498	412
Feb-97	3575	1303	3341	859	4089	722	3453	726	350	333	491	437
Mar-97	3550	1313	3921	879	4037	647	3718	869	405	393	462	295
Apr-97	3442	1485	3588	844	4046	589	3448	897	408	373	441	219
May-97	3061	1227	3666	917	3477	583	3740	801	370	355	503	193
Jun-97	3060	1331	3049	763	3425	477	3345	780	416	345	477	202
Jul-97	2859	1580	3593	2351	3587	1933	3732	1148	423	375	486	209
Aug-97	2853	1222	4244	769	3421	387	4564	767	428	333	488	224
Sep-97	3062	1257	4300	817	3682	443	4230	795	464	367	462	194
Oct-97	3047	1325	4116	816	3798	476	4045	835	469	347	492	200
Nov-97	2419	1147	4141	816	3229	440	3912	671	363	327	481	242
Dec-97	2824	1106	3329	794	3663	420	3378	687	348	356	398	149
Jan-98	3850	1177	3338	925	4770	514	3166	741	391	321	522	159
Feb-98	3407	1188	3209	879	4040	497	3377	797	367	350	381	158
Mar-98	3890	1208	3035	848	4479	495	3172	802	435	367	405	327
Apr-98	3282	1219	3312	866	3925	550	3634	815	403	398	410	193
May-98	2975	1271	3468	917	3260	528	3985	803	415	375	449	183
Jun-98	3056	1578	2697	906	3661	516	3090	1069	424	365	424	276
Jul-98	3141	1772	3223	3331	3774	3653	3513	1055	437	516	476	178
Aug-98	2940	1276	3907	689	3597	413	4398	831	463	384	438	192
Sep-98	3188	1322	3583	722	3787	449	4221	858	492	372	458	200
Oct-98	3091	1377	4302	827	3992	460	4755	898	446	345	442	169
Nov-98	2879	1294	3713	797	3679	509	4171	797	452	338	449	195
Dec-98	3030	1295	3244	959	4083	603	3879	817	403	376	433	181

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	OHP Families				OHP Adults and Couples				AB/AD			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jan-99	3867	1278	3264	1004	4985	570	3855	830	421	382	444	228
Feb-99	3751	1283	3362	1116	4661	890	3755	853	390	599	439	167
Mar-99	4501	1372	3060	1145	5378	840	3350	928	482	418	427	196
Apr-99	3389	1303	3306	1155	4325	920	3681	949	402	472	474	202
May-99	2805	1262	3281	1106	3712	846	3661	901	394	471	393	206
Jun-99	2938	1309	3113	1128	3983	826	3650	907	432	433	456	182
Jul-99	2816	1227	3446	1127	3713	832	4169	849	459	431	442	201
Aug-99	2986	1324	4158	1156	3884	797	4852	997	475	493	457	266
Sep-99	2844	1334	4126	1168	3843	825	4620	952	471	444	531	225
Oct-99	2669	1479	4805	1149	3608	849	5102	1137	493	486	503	192
Nov-99	2736	1321	4042	1171	3845	806	4357	1045	425	419	435	228
Dec-99	2696	1312	3519	1124	3802	857	3950	1088	388	536	512	239
Jan-00	3609	1434	3465	1242	4630	994	4072	945	473	477	516	215
Feb-00	3385	1233	3174	1060	4325	791	3777	999	405	450	492	214
Mar-00	3857	1383	3095	1197	4737	918	3607	1071	488	465	481	222
Apr-00	3032	1237	3367	1154	3882	865	3759	996	416	495	447	215
May-00	3084	1351	2905	1213	4325	945	3377	1018	444	480	448	216
Jun-00	2815	1336	2887	1243	3949	915	3555	965	464	481	515	212
Jul-00	2680	1416	3022	1164	3944	890	3758	1077	480	430	537	232
Aug-00	3250	1443	3755	1285	4424	1024	4501	1050	502	426	509	245
Sep-00	3102	1424	3822	1191	4056	976	4249	1022	516	413	574	243
Oct-00	2,857	1,250	3,508	1,020	4,172	686	3,914	866	533	427	494	226
Nov-00	2,659	1,237	3,281	954	3,931	657	3,680	815	478	411	497	227
Dec-00	2,803	1,257	3,233	940	4,032	652	3,819	845	443	411	497	227
Jan-01	3,781	1,249	3,160	919	5,199	643	3,743	829	499	406	497	227
Feb-01	3,315	1,269	3,300	959	4,523	663	3,855	853	446	412	498	228
Mar-01	3,618	1,290	3,456	1,004	4,853	684	4,051	897	524	419	498	227
Apr-01	3,132	1,293	3,447	1,002	4,367	686	3,986	882	509	420	501	229
May-01	2,879	1,287	3,301	959	3,883	667	3,891	861	487	416	502	229
Jun-01	2,901	1,280	3,225	937	3,984	657	3,811	844	520	412	504	230

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	OHP Families				OHP Adults and Couples				AB/AD			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jul-01	2,899	1,285	3,270	950	4,067	663	3,864	855	528	415	506	231
Aug-01	2,890	1,326	3,486	1,013	3,966	693	4,231	936	587	426	508	232
Sep-01	2,944	1,312	3,428	996	4,017	687	4,048	896	589	424	512	234
Oct-01	2,831	1,326	3,477	1,011	4,100	696	4,131	914	602	428	515	235
Nov-01	2,634	1,313	3,319	965	3,896	677	3,929	870	538	423	519	237
Dec-01	2,777	1,292	3,213	934	4,028	663	3,748	830	498	418	521	238
Jan-02	3,745	1,290	3,218	935	5,236	663	3,792	839	559	418	521	238
Feb-02	3,283	1,309	3,344	972	4,555	681	3,949	874	499	424	523	239
Mar-02	3,584	1,301	3,357	976	4,888	683	3,926	869	587	425	524	239
Apr-02	3,103	1,310	3,409	991	4,399	691	3,980	881	571	428	527	241
May-02	2,853	1,310	3,334	969	3,912	682	3,969	878	548	427	530	242
Jun-02	2,875	1,298	3,253	946	4,012	670	3,853	853	588	422	531	243
Jul-02	2,873	1,307	3,300	959	4,096	677	3,922	868	599	426	534	244
Aug-02	2,865	1,353	3,511	1,021	3,993	706	4,316	955	671	438	537	245
Sep-02	2,919	1,333	3,427	996	4,044	697	4,094	906	675	435	542	248
Oct-02	2,808	1,346	3,470	1,008	4,128	705	4,176	924	694	438	547	250
Nov-02	2,613	1,334	3,327	967	3,922	688	3,994	884	622	434	552	252
Dec-02	2,755	1,312	3,226	938	4,055	675	3,803	842	577	429	554	253
Jan-03	3,717	1,309	3,233	940	5,272	675	3,849	852	650	429	555	253
Feb-03	3,259	1,328	3,356	975	4,587	693	4,010	888	581	435	558	255
Mar-03	3,558	1,319	3,362	977	4,923	693	3,976	880	685	435	559	255
Apr-03	3,080	1,327	3,409	991	4,430	701	4,028	892	666	439	563	257
May-03	2,832	1,328	3,340	971	3,941	692	4,022	890	639	438	567	259
Jun-03	2,854	1,315	3,260	948	4,042	681	3,903	864	688	433	569	260

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	OAA				Foster Children				Medically Needy			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Feb-94	491	108	486	20	304	344	315	216	240	71	167	271
Mar-94	546	120	457	17	304	375	301	255	251	70	157	173
Apr-94	502	98	480	26	352	354	348	269	215	82	150	155
May-94	489	125	450	31	329	337	318	204	180	98	183	135
Jun-94	516	93	480	16	324	365	365	214	211	88	167	131
Jul-94	475	120	506	28	285	324	426	260	178	64	168	160
Aug-94	521	114	462	26	362	389	385	223	231	74	139	80
Sep-94	576	120	431	27	306	339	417	262	194	71	169	114
Oct-94	490	95	485	29	280	319	342	223	205	41	177	102
Nov-94	514	112	456	22	314	299	322	198	187	72	162	103
Dec-94	453	107	525	18	267	229	301	230	206	62	149	96
Jan-95	526	113	546	18	459	487	426	198	173	64	160	119
Feb-95	496	137	429	32	313	344	365	233	209	68	169	133
Mar-95	522	128	553	26	291	338	304	224	223	85	183	119
Apr-95	512	167	530	30	255	268	320	248	201	99	182	128
May-95	503	289	550	20	251	313	276	149	180	82	164	104
Jun-95	477	180	522	19	300	394	253	229	171	79	174	85
Jul-95	489	151	526	27	273	291	388	217	169	70	195	100
Aug-95	515	129	497	28	316	330	326	236	239	92	155	85
Sep-95	448	151	498	24	274	284	421	234	175	82	194	98
Oct-95	490	177	529	26	322	338	300	165	200	85	165	82
Nov-95	497	208	571	28	270	242	319	185	197	66	187	85
Dec-95	464	121	623	19	245	205	289	202	181	77	202	89
Jan-96	583	169	601	19	307	268	316	171	236	96	175	94
Feb-96	497	180	496	29	275	269	375	206	182	107	230	131
Mar-96	482	155	542	32	265	217	284	213	209	107	192	96
Apr-96	529	159	546	22	266	261	309	177	223	133	191	92
May-96	556	132	552	28	307	279	311	172	215	112	203	101
Jun-96	470	139	525	26	269	246	309	216	200	93	240	90

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	OAA				Foster Children				Medically Needy			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jul-96	488	163	594	28	314	283	403	195	233	132	149	80
Aug-96	530	161	560	33	333	307	360	181	172	133	242	85
Sep-96	502	118	498	22	282	242	376	202	211	101	176	64
Oct-96	543	196	528	25	368	296	340	158	178	107	171	81
Nov-96	469	201	557	26	326	269	308	167	170	87	181	79
Dec-96	469	116	662	17	291	243	357	183	155	91	145	57
Jan-97	530	168	665	26	309	286	323	176	166	97	151	95
Feb-97	463	102	600	31	315	280	310	164	149	119	168	122
Mar-97	490	136	594	30	313	343	358	160	170	112	155	66
Apr-97	512	125	536	22	362	254	350	201	171	111	153	83
May-97	488	126	567	33	301	256	350	147	159	107	157	94
Jun-97	444	107	501	46	357	281	327	201	158	98	148	58
Jul-97	464	134	522	36	346	344	505	205	164	98	149	70
Aug-97	496	168	528	27	337	279	415	217	162	126	179	64
Sep-97	464	117	499	37	376	346	424	202	162	93	154	55
Oct-97	489	120	523	32	333	284	358	201	156	124	160	67
Nov-97	436	153	536	31	310	243	307	164	147	166	168	62
Dec-97	440	88	549	34	285	246	318	182	163	141	129	63
Jan-98	489	124	675	26	336	250	319	195	153	140	154	63
Feb-98	492	129	527	32	332	277	341	163	189	124	175	93
Mar-98	477	284	577	31	322	239	325	170	181	144	163	75
Apr-98	530	141	514	42	314	302	359	196	188	168	175	71
May-98	470	107	525	27	288	275	359	150	148	146	192	63
Jun-98	492	217	529	27	348	256	353	192	196	132	145	70
Jul-98	514	136	541	32	331	251	475	412	167	170	177	88
Aug-98	492	153	509	34	300	328	369	183	164	148	181	69
Sep-98	522	161	548	31	312	277	379	193	153	148	144	68
Oct-98	523	127	565	28	350	289	331	171	152	128	178	63
Nov-98	510	154	538	23	295	255	343	182	166	127	174	66
Dec-98	499	138	583	26	272	231	290	173	182	123	123	81

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	OAA				Foster Children				Medically Needy			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jan-99	540	190	622	40	335	287	329	189	148	176	168	84
Feb-99	506	135	612	34	289	276	301	419	148	143	139	87
Mar-99	560	152	602	40	329	289	284	179	176	167	147	85
Apr-99	552	181	598	43	305	340	332	185	137	189	181	112
May-99	563	152	589	32	309	282	321	234	157	162	174	90
Jun-99	564	136	518	27	349	328	323	244	173	146	140	77
Jul-99	554	135	532	34	309	333	381	221	163	151	175	84
Aug-99	540	198	551	37	317	265	361	200	180	174	164	77
Sep-99	560	142	542	32	330	264	371	191	150	167	167	91
Oct-99	542	156	554	34	285	282	353	188	178	170	172	107
Nov-99	527	168	572	38	297	305	338	189	161	168	181	74
Dec-99	504	163	607	25	265	239	316	234	165	157	176	77
Jan-00	578	168	703	31	308	263	313	196	191	172	147	91
Feb-00	599	191	598	24	322	265	318	166	191	158	172	113
Mar-00	633	157	569	27	311	294	320	217	194	148	139	96
Apr-00	514	179	594	30	295	288	342	203	137	214	160	77
May-00	557	157	595	41	328	292	295	176	168	158	156	93
Jun-00	557	163	524	40	303	288	321	235	179	154	163	103
Jul-00	532	144	572	43	309	266	456	221	174	184	184	88
Aug-00	557	172	561	34	308	339	380	208	171	181	162	94
Sep-00	534	145	585	28	322	338	370	213	144	162	174	76
Oct-00	575	181	529	29	330	279	384	219	164	141	188	92
Nov-00	556	172	533	29	309	277	376	214	158	139	186	91
Dec-00	536	170	536	30	277	278	368	209	162	139	183	89
Jan-01	619	168	537	30	351	276	360	205	164	138	183	89
Feb-01	585	168	542	30	315	281	364	207	165	138	182	89
Mar-01	609	169	546	30	312	286	363	206	179	139	182	89
Apr-01	625	170	550	30	306	287	362	206	170	140	185	90
May-01	614	168	554	31	298	283	361	205	159	139	184	90
Jun-01	583	167	557	31	331	280	358	204	168	138	182	88

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	OAA				Foster Children				Medically Needy			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jul-01	600	168	560	31	322	280	360	205	167	138	183	89
Aug-01	616	169	562	31	335	287	361	205	173	139	182	89
Sep-01	612	169	565	31	319	289	363	207	159	139	183	89
Oct-01	615	169	568	31	331	293	363	206	163	139	181	88
Nov-01	592	168	571	32	309	291	364	207	158	138	182	88
Dec-01	569	167	573	32	277	289	363	206	162	137	180	88
Jan-02	655	167	573	32	351	289	358	204	163	137	180	88
Feb-02	618	168	579	32	315	293	363	207	165	137	181	88
Mar-02	644	168	581	32	313	293	364	207	178	137	181	88
Apr-02	661	170	585	32	306	295	363	207	170	139	184	90
May-02	650	170	590	33	298	292	362	206	159	138	183	89
Jun-02	619	168	594	33	331	289	361	205	168	137	181	88
Jul-02	638	169	595	33	323	291	364	207	167	138	182	89
Aug-02	653	171	597	33	335	297	365	208	173	139	183	89
Sep-02	645	172	600	33	320	298	368	209	158	139	184	90
Oct-02	646	172	603	33	331	301	368	209	163	139	182	88
Nov-02	619	172	605	33	309	300	370	210	157	139	182	89
Dec-02	592	171	607	34	278	298	368	210	162	137	181	88
Jan-03	678	171	607	34	352	298	364	207	163	137	182	88
Feb-03	636	172	612	34	316	302	370	211	164	138	182	89
Mar-03	658	172	614	34	313	302	370	211	178	138	183	89
Apr-03	670	174	618	34	306	303	370	210	169	139	186	91
May-03	655	174	621	34	298	300	369	210	158	139	185	90
Jun-03	621	173	623	34	332	297	367	209	167	138	183	89

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	CHIP				OHP Kids				Qualified Medicare Beneficiaries (QMB)			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Feb-94	0	0	0	0	12581	1702	2023	1160	121	140	78	82
Mar-94	0	0	0	0	7623	1463	2050	1295	105	118	82	86
Apr-94	0	0	0	0	6324	1612	2185	1253	183	146	96	101
May-94	0	0	0	0	5593	1646	1964	1510	125	134	72	116
Jun-94	0	0	0	0	5727	1523	2051	1558	125	126	81	94
Jul-94	0	0	0	0	5106	1488	2311	1529	129	176	83	86
Aug-94	0	0	0	0	6112	1397	2873	1721	136	101	100	82
Sep-94	0	0	0	0	5996	1450	7068	1739	117	126	80	86
Oct-94	0	0	0	0	6815	1445	5424	1553	118	128	89	68
Nov-94	0	0	0	0	6343	1433	3968	1832	136	118	83	86
Dec-94	0	0	0	0	5918	1403	3321	1773	112	112	95	73
Jan-95	0	0	0	0	7421	1472	3230	2069	121	136	92	74
Feb-95	0	0	0	0	5803	1622	2974	1754	143	153	75	108
Mar-95	0	0	0	0	6164	1651	4386	1783	112	145	80	102
Apr-95	0	0	0	0	5509	1716	3727	1600	154	147	126	117
May-95	0	0	0	0	5546	1310	4483	1639	119	117	114	116
Jun-95	0	0	0	0	5784	1504	4169	1688	147	116	95	96
Jul-95	0	0	0	0	5886	1640	4637	1694	129	157	104	72
Aug-95	0	0	0	0	6414	1742	5015	1895	152	138	86	114
Sep-95	0	0	0	0	6218	1679	5885	1714	129	145	96	109
Oct-95	0	0	0	0	5344	1538	6004	1667	146	116	91	101
Nov-95	0	0	0	0	4835	1380	6710	1766	171	134	108	88
Dec-95	0	0	0	0	4809	1210	6241	1696	127	117	101	94
Jan-96	0	0	0	0	6959	1441	6449	1765	130	143	108	107
Feb-96	0	0	0	0	5914	1450	5500	1653	149	179	100	124
Mar-96	0	0	0	0	6117	1390	6107	1442	129	126	105	128
Apr-96	0	0	0	0	5870	1458	4956	1399	135	139	114	115
May-96	0	0	0	0	5717	1347	4799	1317	152	133	121	119
Jun-96	0	0	0	0	5241	1362	4554	1248	132	129	114	116

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	CHIP				OHP Kids				Qualified Medicare Beneficiaries (QMB)			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jul-96	0	0	0	0	5616	1362	5166	1334	153	132	109	142
Aug-96	0	0	0	0	6137	1377	6841	1270	153	135	124	145
Sep-96	0	0	0	0	5717	1502	7241	1232	140	97	129	120
Oct-96	0	0	0	0	6331	1644	6582	1216	144	125	100	136
Nov-96	0	0	0	0	5474	1419	6695	1290	126	106	130	115
Dec-96	0	0	0	0	5972	1243	5526	1331	144	91	105	100
Jan-97	0	0	0	0	7479	1334	4995	1337	133	117	148	132
Feb-97	0	0	0	0	6278	1343	5017	1247	112	127	116	143
Mar-97	0	0	0	0	6260	1398	5729	1204	118	108	105	133
Apr-97	0	0	0	0	6140	1381	5959	1155	125	124	127	126
May-97	0	0	0	0	5742	1338	5815	1177	145	135	135	124
Jun-97	0	0	0	0	5560	1339	5084	1110	132	123	118	96
Jul-97	0	0	0	0	5664	1184	5729	1405	131	118	125	115
Aug-97	0	0	0	0	5679	1169	7010	1298	118	101	129	130
Sep-97	0	0	0	0	6480	1224	6967	1396	142	99	121	106
Oct-97	0	0	0	0	6193	1280	6853	1268	142	115	116	135
Nov-97	0	0	0	0	5228	1094	6728	1218	114	96	93	178
Dec-97	0	0	0	0	5687	972	5525	1251	139	115	76	152
Jan-98	0	0	0	0	6995	1163	5577	1345	127	93	124	143
Feb-98	0	0	0	0	6214	1132	5462	1177	111	111	91	149
Mar-98	0	0	0	0	6980	1154	5218	1259	126	113	101	159
Apr-98	0	0	0	0	5874	1183	5804	1254	124	117	123	159
May-98	0	0	0	0	5575	1133	6038	1210	110	109	81	152
Jun-98	0	0	0	0	6009	1216	4789	1258	119	95	90	112
Jul-98	1356	812	0	0	5996	1352	5668	2916	130	97	98	170
Aug-98	1107	1003	33	48	6078	1209	5783	2309	126	86	73	150
Sep-98	1136	1029	26	74	6861	1203	5204	2287	119	93	81	149
Oct-98	1063	1178	65	129	6215	1315	6129	2438	128	87	103	140
Nov-98	899	1028	85	208	5794	1315	5361	2268	137	108	110	131
Dec-98	885	822	158	305	5915	1303	4893	2225	136	85	87	124

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	CHIP				OHP Kids				Qualified Medicare Beneficiaries (QMB)			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jan-99	979	796	421	480	7062	1594	4920	2107	130	96	102	177
Feb-99	888	823	906	816	6508	1800	4822	2280	118	90	79	155
Mar-99	1045	909	843	775	7514	1913	4552	2229	137	108	80	161
Apr-99	1001	977	738	799	6001	1944	4930	2412	120	107	99	183
May-99	771	885	741	766	5491	1797	4783	2228	119	116	82	145
Jun-99	865	831	667	626	5705	1807	4676	2330	104	105	81	146
Jul-99	866	961	762	582	5514	1626	5218	2353	105	97	92	143
Aug-99	901	1280	867	600	5837	1615	6219	2769	105	105	89	156
Sep-99	1024	1166	984	594	6145	1581	6570	2679	122	96	93	146
Oct-99	926	1401	1216	659	5392	1648	6993	2895	133	104	94	168
Nov-99	1008	1270	1015	651	5410	1586	6125	2779	132	93	75	159
Dec-99	987	1025	959	562	5422	1421	5469	2601	145	84	84	141
Jan-00	1258	1196	1026	723	6633	2122	5400	2538	130	90	116	167
Feb-00	1149	993	1131	894	6060	1705	4976	2384	112	95	101	159
Mar-00	1229	1069	990	1089	6853	2053	4593	2462	135	80	69	130
Apr-00	1003	1033	1234	1054	5530	2057	5474	2384	98	81	133	195
May-00	1144	957	1052	989	5916	1975	4645	2444	89	96	115	133
Jun-00	973	928	1040	798	5436	1899	4773	2356	108	86	82	142
Jul-00	857	953	1141	774	5508	2026	4854	2304	100	93	88	143
Aug-00	1090	1320	1223	870	6490	1974	6002	2793	107	75	82	147
Sep-00	1116	1298	1331	951	6325	2162	6052	2708	118	86	92	102
Oct-00	1,015	985	916	873	6,147	1,832	5,639	1,843	111	143	107	147
Nov-00	1,018	952	902	860	5,613	1,829	5,421	1,771	108	126	109	150
Dec-00	1,021	951	895	853	5,724	1,828	5,408	1,767	110	124	107	147
Jan-01	1,023	939	865	825	7,233	1,805	5,332	1,742	111	122	106	146
Feb-01	1,025	979	918	875	6,251	1,850	5,590	1,827	111	122	106	145
Mar-01	1,028	1,005	1,012	965	6,775	1,922	5,763	1,883	120	123	106	145
Apr-01	1,030	1,024	993	947	5,988	1,905	5,886	1,923	114	124	106	146
May-01	1,031	996	941	897	5,740	1,862	5,709	1,865	107	122	106	145
Jun-01	1,032	978	933	890	5,796	1,853	5,593	1,828	112	120	104	143

**Table E.2. Historical (January 1994-September 2000) and Forecasted (October 2000-June 2003) OMAP Caseload Flows**

Month	CHIP				OHP Kids				Qualified Medicare Beneficiaries (QMB)			
	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs	Inflow from the Outside	Inflow from Other Programs	Outflow to Outside	Outflow to Other Programs
Jul-01	1,033	982	929	886	5,889	1,849	5,620	1,836	110	121	104	143
Aug-01	1,034	1,031	946	902	6,130	1,874	5,930	1,938	114	123	104	142
Sep-01	1,035	1,023	976	931	6,374	1,910	5,864	1,916	104	122	104	143
Oct-01	1,037	1,045	984	938	6,190	1,925	6,003	1,962	107	122	103	141
Nov-01	1,038	1,014	976	930	5,652	1,925	5,797	1,894	103	120	103	141
Dec-01	1,039	995	970	925	5,762	1,922	5,674	1,854	105	118	102	140
Jan-02	1,041	998	968	923	7,281	1,918	5,694	1,861	105	118	102	139
Feb-02	1,043	1,031	979	933	6,292	1,929	5,906	1,930	105	120	101	139
Mar-02	1,044	1,036	995	949	6,820	1,938	5,943	1,942	113	120	101	139
Apr-02	1,046	1,055	1,000	953	6,029	1,939	6,064	1,981	108	121	102	140
May-02	1,048	1,035	999	953	5,779	1,934	5,939	1,941	101	121	101	139
Jun-02	1,049	1,011	995	948	5,837	1,927	5,788	1,891	106	119	100	138
Jul-02	1,050	1,019	995	948	5,932	1,929	5,841	1,909	105	120	100	138
Aug-02	1,052	1,068	1,001	954	6,176	1,946	6,144	2,008	109	123	100	137
Sep-02	1,054	1,048	1,013	966	6,423	1,968	6,009	1,964	99	122	101	138
Oct-02	1,056	1,069	1,019	971	6,239	1,982	6,135	2,005	102	122	100	137
Nov-02	1,058	1,041	1,022	974	5,697	1,990	5,951	1,945	98	121	99	136
Dec-02	1,059	1,022	1,018	971	5,810	1,987	5,832	1,906	100	119	99	135
Jan-03	1,061	1,025	1,018	970	7,342	1,984	5,853	1,913	100	119	98	135
Feb-03	1,062	1,059	1,026	978	6,345	1,991	6,067	1,983	100	121	98	135
Mar-03	1,064	1,061	1,035	986	6,878	1,994	6,083	1,988	108	121	98	135
Apr-03	1,065	1,077	1,037	988	6,081	1,992	6,189	2,022	102	123	99	136
May-03	1,067	1,057	1,040	991	5,830	1,990	6,068	1,983	95	122	99	135
Jun-03	1,069	1,034	1,036	988	5,889	1,982	5,920	1,935	100	121	97	134