



Calculating a Cohort Dropout Rate for the Chicago Public Schools

A Technical Research Report

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I. Introduction

Because completing high school is so important for students' future success, the dropout rate is one of the most significant indicators to be considered in judging a school or school district. A recent study from the National Center for Education Statistics summarizes the importance of completing high school and the negative consequences of dropping out.¹

Because high school completion has become a requirement for accessing additional education, training, or the labor force, the economic consequences of leaving high school without a diploma are severe. On average, dropouts are more likely to be unemployed than high school graduates and to earn less money when they eventually secure work. High school dropouts are also more likely to receive public assistance than high school graduates who do not go to college. This increased reliance on public assistance is likely due, at least in part, to the fact that young women who drop out of school are more likely to have children at younger ages and more likely to be single parents than high school graduates. The individual stresses and frustration associated with dropping out have social implications as well: dropouts make up a disproportionate percentage of the nation's prisons and death row inmates.

Chicago educators, researchers, and the general public are well aware of the importance of completing high school and of the concomitant need for an accurate dropout statistic. In the mid-1980s, G. Alfred Hess, Jr. and his colleagues at the Chicago Panel on Public School Policy and Finance (now the Chicago Panel on School Policy) developed a sound procedure to define dropouts and issued a series of studies on dropouts in the Chicago Public Schools (CPS).² CPS adopted Hess's methods and for many years after issued its own dropout studies.

Key policy changes in CPS during recent years have altered the composition of the groups of students entering high school. In particular, the 1996 elementary school promotion policy led to larger proportions of academically weak students being held back in elementary school, strengthening entering ninth-grade classes. A corollary consequence of the promotion policy is that larger numbers of older students do not enter high school, thus raising the possibility that more students drop out before they reach high school. Either of these possible outcomes could result in lower dropout rates and raise questions about the comparability of the statistic over time.

Because the Consortium's longitudinal research requires statistics that can be compared fairly over time, we needed to create an indicator that would not be affected by the timing of students' entry into high school. **Our goal was to develop an indicator that would provide accurate and comparable measurement over a sufficient length of time to reveal the extent to which CPS dropout rates are declining or rising.** Although the methods we use to calculate this statistic are based on Hess's procedures, we have made several key alterations. In the process, we faced numerous technical questions about how available data should be used to calculate cohort dropout rates.

The major difference between our procedure and that of Hess is that we group students into cohorts according to when

This technical report addresses the complexities of calculating dropout rates and presents results from the method of calculation we think most appropriately represents CPS dropout rates over the past several years. It precedes a larger report on trends in the performance of Chicago public high schools that will be released later this year. The Consortium is issuing this separate technical report to detail the decisions that underlie our dropout rate calculations.

they have reached their 13th birthday. A cohort includes all students who have had their 13th birthday in the 12 months prior to September 1 of a given year. This is in contrast to the more traditional method of starting the cohort when students enter high school for the first time. We made this alteration in order to account for the major differences in the characteristics of entering ninth graders that have resulted from CPS's promotion policy. (See "How Should We Define a Cohort?" on page 6 for further details.)

In Section II of this report, we present the results of our calculations. In Section III, we explain how and why we modified Hess's method and document the decisions we made

on technical questions we confronted while producing this indicator. Consortium and CPS researchers are continuing to work together to resolve a number of specific questions that this work has raised. Ultimately, CPS and the Consortium may issue joint recommendations regarding how dropout rates are calculated and quality controls for data collection. Until then, this report presents our cohort dropout rates using the best data currently available. It also provides a record of what we learned about the ways different answers to technical questions affect the meaning—and should influence the interpretation—of dropout statistics for Chicago's public schools.

Changes in CPS Policy That Affect Patterns in Dropout Rates

The CPS Promotion Policy

In 1996, CPS began an ambitious new initiative aimed at ending social promotion and raising achievement. The centerpiece of this initiative was a set of promotional test score cutoffs for third, sixth, and eighth graders. Students in these grades must achieve a minimum score to be promoted to the next grade. Students who do not meet the criteria are required to participate in a special summer school program and retake the test at the end of the summer. Those who fail again are retained in their grade or, if they are 15, sent to new alternative schools, Academic Preparatory Centers. As part of the policy, substantial new resources were made available to schools, including funds for summer school and after-school programs. In the first two years of the policy, there were also test cutoff scores for promotion from ninth to tenth grades. This requirement was subsequently dropped for high school students.

Minimum Age Requirements for Entering Kindergarten Students

In the late 1980s CPS raised the minimum age for entering kindergarten students. In the fall of 1988, as in prior years, students needed to reach their fifth birthday by December 1 in order to enter kindergarten that fall. The age minimum was raised by one month each year for the next three years. In 1998, students needed to be five by November 1, in 1989 it was October 1, and in 1990 it was September 1, where it has remained.

II. The Consortium Calculation of CPS Dropout Rates

Consortium researchers calculate the cohort dropout rate in the following manner. We define cohorts by identifying those students who had their 13th birthday by September 1 of a given year. For most students, this is the fall of their eighth-grade year, although those who repeated a grade or entered school late might not yet be in the eighth grade. We follow this cohort for six years (i.e., until its members are 19 years old). We add into the cohort any students who enter CPS after age 13. Using this definition of a student cohort, we compute the percentage of students that drop out, by age, from 14 to 19 years old, as shown in Table 1 (Table 2 shows the actual numbers of CPS students who drop out). See Section III for the procedural and technical decisions that influence this calculation, as well as the implications each of our decisions has on the rate.

By the fall of 2000, 41.8 percent of the 1994 cohort had dropped out of school. This compares with a dropout rate of 42.9 percent for the 1993 cohort, 43.6 percent for the 1992 cohort, and 44.3 percent for the 1991 cohort. These rates are similar to the rates that Hess reported in the mid-1980s. There is a slight downward trend in the dropout rates for the 1991, 1992, 1993, and 1994 cohorts.

Table 1. Percent of Students Dropping Out by Age and Cohort

Dropped Out by Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14	3.4	4.4	4.6	4.4	3.9	3.9	4.2	4.0
15	8.1	8.8	8.7	8.0	7.7	7.7	7.9	7.3
16	18.9	18.0	17.5	16.8	18.0	18.1	17.2	
17	29.3	29.3	29.4	28.4	29.3	28.8		
18	39.4	38.9	38.6	37.9	37.5			
19	44.3	43.6	42.9	41.8				
Final Year Fall of:	1997	1998	1999	2000	2000	2000	2000	2000

To read this chart, follow a cohort down the column. Students in the cohort are 13 years old in the fall of the year in the column header. Their dropout rate at the end of the year is given as the percentage directly below the header. Each row down represents a subsequent year. For the 1991 cohort, 3.4 percent dropped out by the fall of 1992 at age 14, 8.1 percent by fall 1993 at 15, 18.9 percent by fall 1994 at 16, 29.3 percent by fall 1995 at 17, 39.4 percent by fall 1996 at 18, and 44.3 percent by fall 1997 at 19.

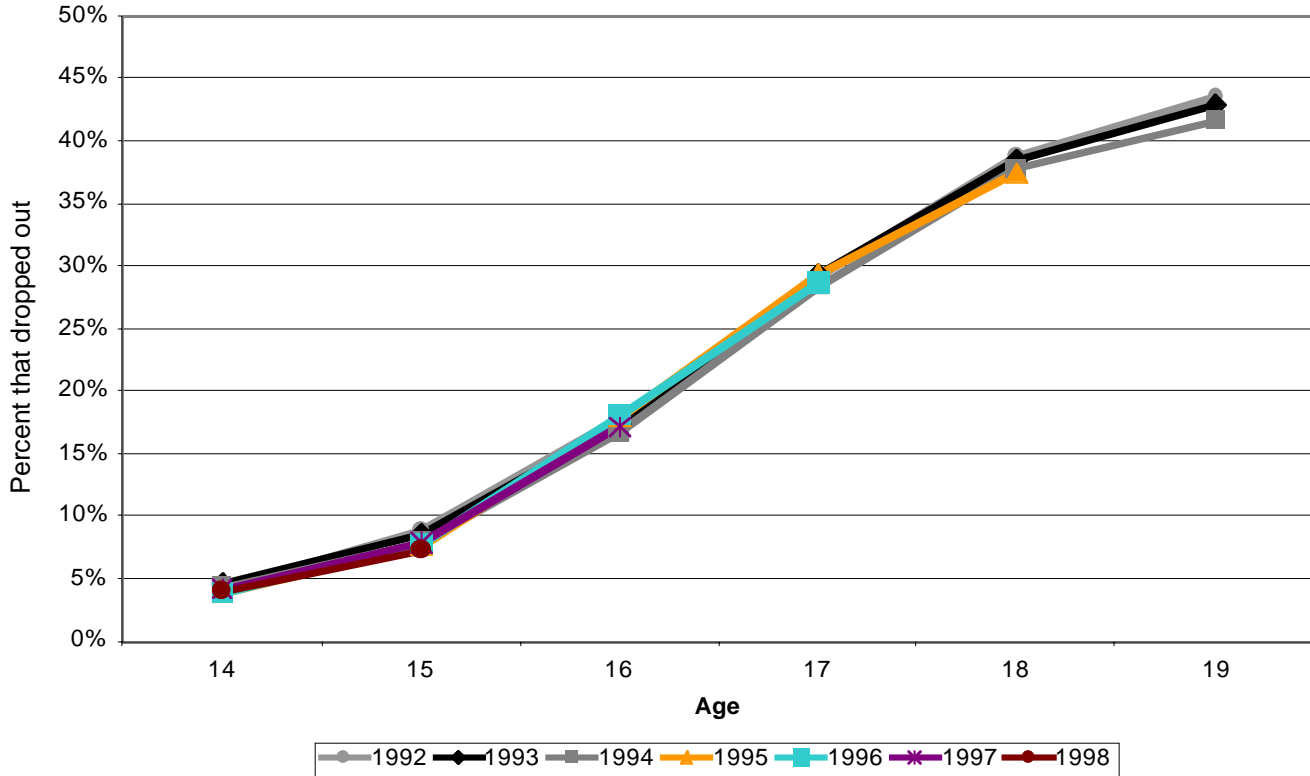
Table 2. Number of Students Dropping Out by Age and Cohort

Dropped Out by Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14	913	1,235	1,358	1,226	1,071	1,088	1,148	1,110
15	2,255	2,564	2,602	2,312	2,198	2,205	2,210	2,084
16	5,273	5,201	5,303	4,856	5,112	5,104	4,777	
17	8,132	8,450	8,756	8,188	8,306	8,081		
18	10,851	11,128	11,440	10,872	10,536			
19	12,023	12,286	12,589	11,799				
Final Year Fall of:	1997	1998	1999	2000	2000	2000	2000	2000

The base number used to calculate the dropout rate at each age is not constant across a cohort because students enter and leave CPS over time. The dropout rate is calculated as the number of dropouts divided by the sum of the number of students who dropped out, graduated, or are still actively enrolled in CPS each September.

Figure 1

Percent of Students that Dropped Out by Age: Cohorts of 13 Year Olds from Fall 1993 Through 1998



The 1995 cohort is the first in which all students were affected by the new CPS promotion policy. When students were first held back from entering high school on the basis of standardized test scores in the spring of 1996, most of these students were in the eighth grade. We can compare the five-year dropout rate for the 1995 cohort to five-year rates for previous cohorts (there is no six-year rate for students in this cohort since they will not be 19 years old until September 2001). The five-year dropout rate for the 1995 cohort is 37.5 percent, compared to 37.9 percent for the 1994 cohort, 38.6 percent for 1993, 38.9 percent for 1992, and 39.4 percent for 1991. The slight downward trend in dropping out by age 18 continued with the first cohort subject to the promotion policy.

Figure 1 displays the dropout rates as a line graph. Lines representing cohorts subsequent to the 1994 cohort are incomplete because these cohorts have not yet reached age 19. Therefore, the lines representing the most recent cohorts end at the age each cohort reached by September 2000. The dropout rates changed little over this period so the lines representing them overlap. However, the decrease by age 19 is noticeable.

The promotion policy's long-term effects on drop out rates will be known only after large numbers of students who have been affected are followed for a full six years. Nevertheless, patterns in dropout rates prior to age 18 do not clearly indicate either an increase or a decrease in dropping out among the most recent cohorts.

III. Decisions Behind the Consortium Dropout Rate Calculations

Prior to calculating a dropout rate, there are several questions that need to be addressed. The first two are strategic:

1. Should we calculate separate rates for each year, or follow a cohort of students for several years?
2. If we follow a cohort of students, how should we define the cohort and for how many years should it be followed?

The second two are procedural:

3. Which students are counted as dropouts?
4. Which students should be included in the final calculations?

We discuss each of these questions below. The insert, "General Patterns of Movement: One Cohort of Students" provides detail on the movements of one cohort of students. This example illustrates the implications of the decisions involved in computing the dropout rates.

Table 3. CPS One-Year Dropout Rates

Year	Percent of high school students that dropped out
1994	16.2
1995	15.5
1996	15.1
1997	16.8
1998	16.4
1999	15.6
2000	15.2

Should We Calculate Separate Rates for Each Year, or Follow a Cohort of Students for Several Years?

We use a cohort rate instead of a one-year rate. Dropout rates can be calculated from year to year (one-year rates), or across multiple years (cohort rates). The one-year rate is the percentage of the total number of enrolled students that dropped out at any time during a specified school year. For example, the CPS one-year dropout rate shows what percentage of students enrolled in high schools and Aca-

demically Preparatory Centers (APCs), formerly called Transition Centers, dropped out each year before the next school year began. CPS reports this statistic each year. The Illinois State Board of Education reports a very similar rate. Table 3 presents the CPS one-year dropout rates as calculated by the Office of Accountability.³

An advantage of the one-year dropout rate is that it can be calculated shortly after the completion of the school year, so it is up to date. For the purpose of understanding changes in underlying dropout patterns, several disadvantages overshadow this advantage. Due to the elementary school promotional policy, the composition of entering ninth-grade stu-

dents is different (students are better prepared) and their movement through high school is changing (better prepared students move more rapidly). These trends are mixed together in the one-year dropout rate because it does not distinguish between new and continuing students. The one-year rate also provides no information about the timing of dropping out or the likelihood

that students will drop out after several years of schooling.

The cohort rate, on the other hand, follows an identifiable group of students over time and tracks its movements through the system. Hess and his colleagues developed a cohort dropout rate for CPS that follows students over a period of several years, beginning when they enter high school as ninth graders. The Hess cohort dropout rate is calculated as the percent of the peer group that failed to graduate within four years. CPS has not published a cohort dropout rate for several years. However, it did provide four-year dropout rates through 1998 to *Catalyst, Voices of Chicago School Reform*. These

rates are displayed in Table 4.⁴

Cohort rates are widely considered to provide a more accurate picture of student outcomes in a school or school system over time. Unfortunately, because they require several years of data for computation, dropout patterns for the most recent cohorts cannot be calculated. For example, cohort dropout rates for the year 2000 show us the outcomes for students who were first-time ninth graders in 1996.

How Should We Define a Cohort?

We define cohorts by age rather than grade. Since 1985, CPS has followed Hess's method and generated its cohort dropout statistics with cohorts defined as first-time ninth-grade students. The impact of the 1996 elementary school promotion policy raises new questions about how cohorts should be defined. The composition of the most recent cohorts of first-time ninth graders is substantially different from earlier ones. In 1996, about 1,800 first-year eighth graders were retained for poor performance on the Iowa Tests of Basic Skills (ITBS). This was about three times the previous year's retention rate. As a result, about 1,200 students who would have been part of the ninth-grade cohort in 1996 were excluded. We would expect the 1996 ninth-grade cohort to have a lower dropout than would have occurred without the policy change because students with poor academic performance, the most likely to drop out, did not become part of the cohort.

It may seem that only the 1996 cohort of students would be affected by this policy. Theoretically, students taken out of the 1996 cohort would be in the 1997 cohort, replacing the group of low-achieving students the promotion policy removed from the 1997 cohort. This pattern would presumably continue in subsequent years. This is not the case.

Each new cohort has had a slightly larger percentage of students held back from entering high school than the previous one. The "spreading out" of low-achieving students

Table 4. CPS Four-Year Dropout Rates

Year	Percent of first-time ninth-grade students that dropped out after four years
1994	42.6
1995	43.6
1996	43.6
1997	41.1
1998	41.7

described above will not occur for several years, and even then the composition of new cohorts will differ from prepolicy ones. In the first three years of the policy, increasing numbers of students were retained in the eighth grade or enrolled in APCs rather than promoted to high school. As a result, each incoming ninth-

grade class experienced a higher degree of retention of low-achieving students than the previous class. A subset of those retained students never entered high school (i.e., were never included in a ninth-grade cohort) either because they dropped out or left the system. The remaining students eventually became part of a cohort, some entering one year later, others two or three years later.

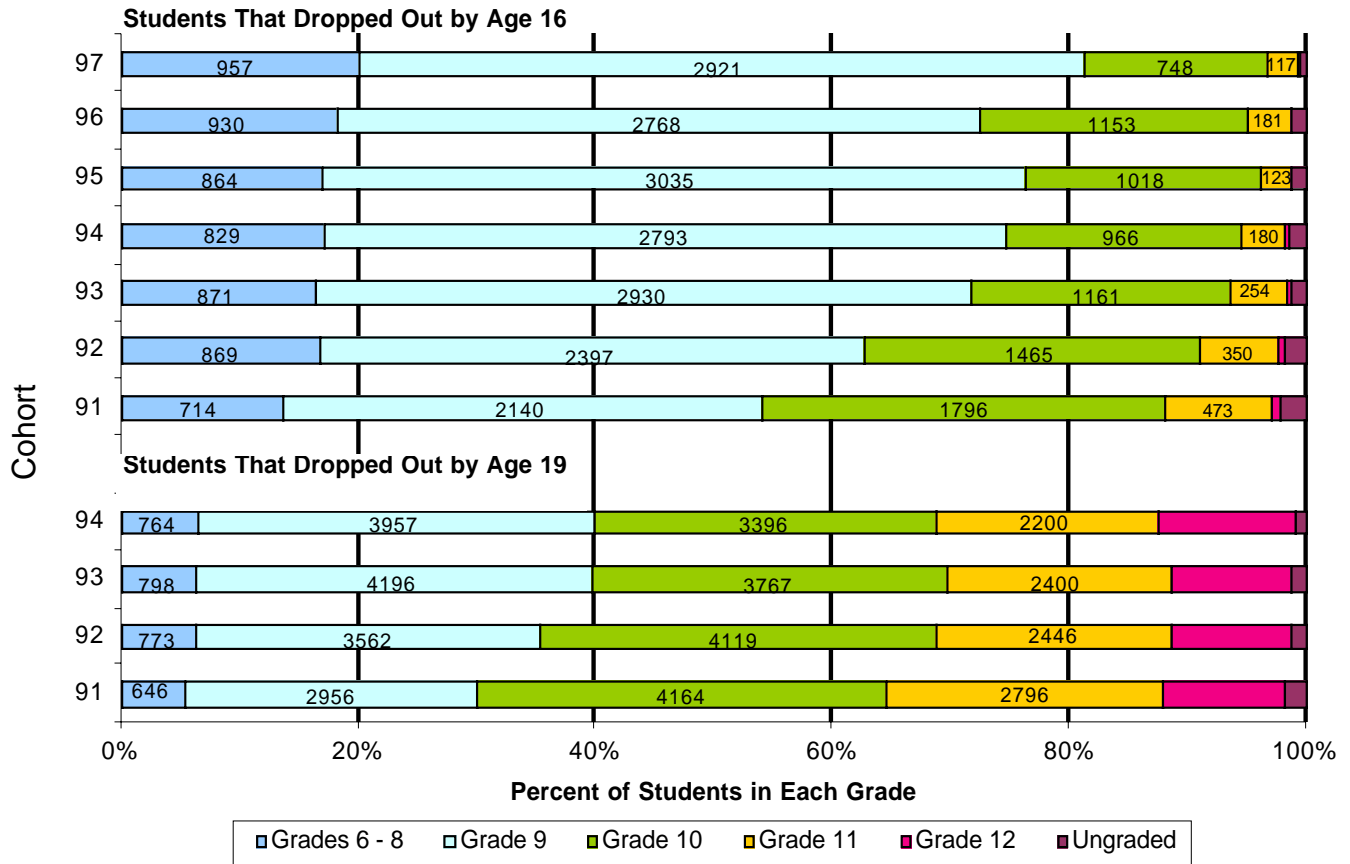
While the number of eighth-grade retentions stopped growing after the first three years of the policy (1996, 1997, and 1998), sixth-grade retention began to affect subsequent incoming ninth-grade classes. The effects of third-grade retentions will be seen later, as will the recent increases in first- and second-grade retentions. Each incoming ninth-grade class will have had more low-achieving students removed from its cohort than the ninth-grade class in the previous year, and this pattern will continue for many years.

The Consortium wanted to compare the performance of cohorts across time from 1994 to 2000. Therefore, we sought to minimize changes in cohorts' academic outcomes due solely to the retention of the lowest performing students. One way of doing this is to define cohorts by students' age rather than grade. An alternative might be to include first-time APC students with incoming ninth-grade classes. This would only partially adjust for the effects of the retention policy, however, since it would not adjust for retention in eighth grade, or for the changing age distribution at which students are entering high schools and APCs.

Defining cohorts by age has several advantages. Most importantly, cohorts are not affected by the new patterns of grade retention. Students who should have entered eighth grade in 1993, and started ninth grade in 1994,

Figure 2

Distribution of Students' Last Grade Among Students Who Dropped Out



will be part of the 1993 cohort, whether or not they actually entered ninth grade in 1994. Examining dropout rates by age is also more desirable than examining them by grade since the reasons for the timing of dropping out are more closely related to students' age than their grade in school.⁵ If students' progress were traced by grade, it would appear that more are dropping out earlier because more students are entering high school at age 16 or 17 than in previous cohorts. If the cohort displayed in the 1993 cohort profile in the insert, "General Patterns of Movement: One Cohort of Students" were defined by grade rather than by age, 19 percent of the students (those who were off-schedule at age 14) would be placed in a cohort with students who were one or two years younger. Therefore, almost one-fifth of the cohort would be different from the other four-fifths of the cohort in a way that would make them more likely to drop out each year. Furthermore, because the retention policy has resulted in increasing percentages of 14- and 15-year-old eighth graders, more students may

be dropping out before finishing elementary school. Defining cohorts by age ensures that these students are included in the dropout rates. One further advantage is that special education students can be included in a cohort with the rest of their age peers even if they are in ungraded classrooms.

In our calculations we defined each cohort as the group of students who are 13 years old in September of the cohort year. For students who have never been held back, and who entered kindergarten at age five, this is the fall of their eighth-grade year. We chose age 13 because this is the year before most students begin high school. Students who drop out before age 13 are not included in our calculations, but they comprise less than 1 percent of each cohort.⁶

In addition to knowing how old students are when they drop out, it is also useful to know what grade they leave from. In Figure 2 we look at the highest grade attained for two groups of students—those that dropped out by age 16, and those that dropped out by age 19.

Fifty-four percent of the students that dropped out by age 16 in the 1991 cohort did not go beyond ninth grade. This increased with subsequent cohorts of students so that 81 percent of the 16-year-old dropouts in the 1997 cohort had not gone beyond ninth grade. Among 19-year-old dropouts, the grade level attained also declined with more recent cohorts. Thirty percent of the dropouts from the 1991 cohort had not yet finished ninth grade, while 40 percent of the dropouts from the 1994 cohort never finished ninth grade. Therefore, though the age when students drop out has not changed (as shown in Table 1), students are dropping out at earlier grade levels.

For How Many Years Should Each Cohort Be Followed?

We follow cohorts for six years, calculating the percentage of students that dropped out at each age from 13 to 19.

CPS ninth-grade cohort rates trace students for four years. Four-year dropout rates are intuitively appealing because students have traditionally been expected to graduate after four years of high school; however, a substantial proportion of CPS students remain in high school for five or more years. Four-year rates must either exclude these students from calculations or include them as dropouts or non-dropouts. Excluding them from the analysis overestimates the dropout rate, while including them as non-dropouts underestimates the eventual proportion of students that drop out. This suggests the need to follow students for longer periods of time.

The impact of length of time on dropout rates is evident in the 1993 cohort profile. After five years, at age 18, the probability of dropping out is just slightly less than the probability of graduating. After six years, at age 19, the probability of graduating is noticeably higher than the probability of dropping out. This is true because of the significant proportion of students who are still actively enrolled at age 18.⁷ If we were to follow these students an additional year, the ratio of graduates to dropouts would again change slightly.⁸

While following students beyond age 18 is optimal, the 1994 cohort is the most recent

one for which a 19-year-old rate can be calculated, because subsequent cohorts have not yet reached age 19. Therefore, we chose to examine cohort dropout rates over varying spans (from one to five years) to allow comparison of the most recent cohorts with earlier ones without having to wait five years. One disadvantage of smaller intervals, however, is that they may confound the timing of dropping out with the total rate of dropping out. For example, a rise in the two-year rate might signal a higher percentage of students dropping out by the time the cohort finishes high school or that students were dropping out after their second year in high school instead of their third or fourth year.

How Do We Decide Which Students Are Counted As Dropouts?

Once a cohort has been defined, CPS student records are used to determine which students have dropped out during each year that it is followed. CPS student data are recorded in several different data files that each contain different types of information. To decide which students have dropped out, we need to make decisions regarding which CPS student record data files to use, which codes in those files to count as dropout codes, and which records to use from the multiple years of data that exist for each student.

Which Sources of CPS Data Should We Use for Information on Dropping Out?

We use student Master Files rather than CPS drop files as our data source. The Consortium has decided to calculate dropout statistics using data contained in a subset of CPS's computerized student information system, the Comprehensive Student Information System (CSIS). CSIS contains detailed administrative data about CPS students. Because its basic purpose is to keep track of who is enrolled and the school they attend, it has relatively little information about students' actual educational experiences. The subset of CSIS that we use, the Master Files, contains the basic information about students' enrollment in CPS.

Certain data in the Master Files enable us to identify dropouts. Our first step is to see if a student is active or inactive. If the student is inactive, we check the "leave code" and the leave date ascribed to it. The leave code tells us the reason that the student left CPS (e.g., transferred to a private or parochial school in Chicago, transferred outside the city of Chicago, or dropped out). Leave codes are entered by school staff and, therefore, are susceptible to human error. Furthermore, it is often difficult for school staff to ascertain the status of students who no longer attend school.

It is important to note that there is no process for external validation of CSIS data. Despite possible inaccuracies in record keeping, we feel that the data is sufficiently accurate to provide a general picture of students' outcomes. We have no reason to believe that these data are any less accurate than those used by other school districts to calculate their dropout rates.

CPS uses an additional source of information to calculate the one-year dropout rate. Each year, CPS creates a "drop file" that contains a roster of all students who leave the school system between approximately July 1 of one year and June 30 of the next. This file contains both dropouts and transfers, but it differs from the Master Files in that it distinguishes verified from unverified transfers. When a student transfers to another school out of the system, that transfer is considered verified when the receiving school requests the student's transcript and the sending school enters this request for information into CSIS. When CPS calculates one-year dropout rates, it considers unverified transfers to be dropouts. The CPS procedure for calculating four-year cohort dropout rates does not use the drop files.

The accuracy of data in both the drop files and the Master Files depends on the verification of student transfers. Because of the attention to one-year dropout rates in CPS high schools, there are strong incentives for schools to verify transfers and ensure that the student information system is up-to-date and accurate. There are fewer incentives to verify transfers in elementary schools. As a result, thousands of students in grades one through eight are reported as unverified transfers each year. It

is likely that most of these are legitimate transfers.

We have looked carefully at the number of unverified transfers over time (in 1994 before the promotion policy, in 1996 at the start of the promotion policy, and in 1998 after full implementation of the promotion policy) at grades five, eight, and ten. We chose fifth grade for the comparison because the vast majority of these unverified transfers were probably not dropouts. We chose tenth grade because most unverified transfers probably were dropouts. We then compared the trends in unverified transfers in the fifth and tenth grades to the trend in unverified transfers in eighth grade, where we cannot assume that unverified transfers are either transfers or dropouts.

We found significant numbers of fifth-grade students identified as unverified transfers (between 5.5 and 5.9 percent of total enrollment), with a slight upward trend in this time period. There were slightly more eighth graders coded as unverified transfers than fifth graders (between 6.0 to 6.7 percent of the total enrollment), with a greater increase from 1994 to 1998. Among tenth graders, the rates of unverified transfers were higher, between 8.5 and 8.9 percent, while the percentage of unverified transfers among tenth graders increased at about the same rate as in the fifth grade.

The high rate of unverified transfers from elementary schools poses problems given our decision to begin studying students at age 13, when they are still in elementary school. The large number of unverified transfers in fifth grade suggests that most of the unverified transfers in eighth grade are actually legitimate transfers. The rise in prevalence of unverified transfers among eighth graders, however, is problematic. It could be that a greater number of eighth graders are dropping out, especially since more students are being retained in eighth grade up to ages 15 and 16. There is also anecdotal evidence that some students may try to circumvent the eighth-grade promotional gate by transferring out of CPS, hiding their transfer from CPS, and then trying to re-enroll as "new" high school students from outside of CPS. There are no good estimates of the extent of this practice, but it may explain part of the increase in eighth-grade unverified transfers.

Table 5. Percent of Students Dropping Out by Age and Cohort: With Unverified Transfers Included as Dropouts*

Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14**	N/A	N/A	3.1	3.2	3.4	3.4	3.1	3.1
15	N/A	N/A	10.3	10.1	10.9	11.2	10.9	10.4
16	N/A	N/A	20.4	21.0	22.8	22.5	21.7	
17	N/A	N/A	34.1	33.8	34.8	34.3		
18	N/A	N/A	43.9	43.1	43.3			
19	N/A	N/A	48.7	47.9				

* To compare these rates to those produced using the Master Files, do not use Table 1; instead, use Table 6.

** The rates at age 14 produced with the drop files are smaller than those produced with the Master Files because they only calculate dropouts for a ten-month period, September to July.

We want to make use of all relevant information about students, but we are reluctant to use the drop files because of our concerns about unverified transfers in elementary schools. We have concluded that the information contained in the drop files is not sufficiently reliable for us to use and would distort our dropout rate estimations. Therefore, we calculate dropout rates using only the Master Files, as they contain the best information available for students across all grade levels. The Master Files have an additional advantage over the drop files: they are updated continually, whereas the drop files are “one-time-only” files. We can, therefore, use the Master Files to update changes in students’ status in subsequent years—for example, if a transfer becomes a dropout, or a dropout re-enrolls in CPS, or more information becomes available and the school corrects the student’s leave code. We cannot do this with the drop files.

Although we are not using the drop file data in our central calculations, we are sensitive to the possibility that more el-

ementary school students are dropping out and that some are among these unverified transfers. Therefore, we want to recognize the impact of the decision not to classify unverified transfers as dropouts. Table 5 presents the rates that result when unverified transfers are included as dropouts. Because we cannot update students’ classification using the drop files unless they re-enroll in CPS, the numbers in Table 5 are not directly comparable to those in Table 1. Therefore, we present in Table 6 dropout rates produced using the Master Files but calculated in the same way as those using the drop files.

The rates in Table 5 can be compared to those in Table 6 to estimate the effect of the inclusion of unverified transfers.

There are some important differences between the dropout rates calculated with the Master Files and the data in Table 5. First, drop files for the two earlier cohorts, 1991 and 1992, are not available. Second, the drop files span the time period between July 1 and June 30, whereas our Master Files run September to September and, as a result, dropout rates are calculated on different time frames. These

Table 6. Percent of Students Dropping Out by Age and Cohort: Using Master Files Data Without Status Updates*

Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14	N/A	N/A	4.6	4.4	3.9	3.9	4.2	4.0
15	N/A	N/A	9.1	8.3	8.1	8.2	8.4	7.6
16	N/A	N/A	18.3	17.5	18.6	18.8	17.8	
17	N/A	N/A	30.5	29.4	30.2	29.8		
18	N/A	N/A	40.0	39.2	38.9			
19	N/A	N/A	44.6	43.6				

* The classification of students as dropouts is not revised despite changes in the Master Files, unless the student becomes actively enrolled again in CPS.

qualifications aside, the drop files do suggest: (a) somewhat higher absolute dropout rates than those calculated with the Master Files (about 4 percent higher at age 19), and (b) no trend downward over time.

Which Leave Codes Should Be Considered Dropout Codes?

We count students as dropouts whose reasons for leaving were recorded as dropout, lost, transfer to an evening school, did not arrive, GED/non-CPS diploma, terminated IEP, or if no reason for leaving was recorded when they became inactive. Our classification of students as dropouts is based on the leave codes entered by school clerks when students stop attending a CPS school. Although some of the leave codes in the Master Files clearly indicate that a student has dropped out, many indicate uncertainty about a student's status. Other codes indicate an outcome that is neither dropping out, nor a continuation of schooling. The Consortium has worked with the CPS Office of Accountability to determine which codes are most appropriate to include as dropouts. While some questions remain, our collaboration with CPS has reduced much of the uncertainty regarding the meaning of the various leave codes. As a result, we have modified our classification of leave codes so that the codes designated as dropouts are no longer identical to the ones CPS uses in its one- and four-year rates. Table 7 lists descriptions of the leave codes,

Table 7. Classifications of CPS Leave Codes for Dropout Rate Calculations

Leave Reasons	Consortium rate	CPS one-year rate	CPS four-year rate
Transfer to a Chicago non-public school		V. N.	
Transfer to a school outside of Chicago		V. N.	
Transfer to a residential institution		V. N.	
Legally committed to a non-CPS correctional institution		V. N.	
Graduation			
Deceased			
Parent-taught home instruction			D. O.
Terminated optional program			D. O.
Lost—cannot be located	D. O.	D. O.	D. O.
Transfer to an evening school	D. O.		D. O.
Lost—undeclared	D. O.	D. O.	D. O.
Terminated IEP	D. O.		D. O.
Dropout: parenthood, entered verified employment, needed at home, military, married, discipline code violation, GED, vocational program, other	D. O.	D. O.	D. O.
Dropout—absences	D. O.	D. O.	D. O.
Did not arrive	D. O.	D. O.	D. O.
Finished alternative school program (GED, non-CPS diploma)	D. O.		
No leave code entered	D. O.		

"D. O." indicates that this code is counted as a dropout with this method.

"V. N." indicates that verification of this action is necessary. Without verification, the student is counted as a dropout.

Table 8. Percent of Students Dropping Out by Age and Cohort: Counting Incarcerated Students as Dropouts

Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14	3.4	4.5	4.7	4.4	3.9	4.1	4.3	4.1
15	8.3	9.0	8.8	8.2	8.1	8.0	8.2	7.5
16	19.4	18.4	18.1	17.4	18.6	18.6	17.7	
17	30.3	30.3	30.5	29.6	30.3	29.9		
18	41.0	40.5	40.2	39.5	39.2			
19	46.5	45.7	45.0	44.1				

our classification of these codes as dropouts or non-dropouts, and the way the codes are treated by CPS in its calculations.

Students entering GED or night school programs are classified as dropouts since they have made the decision not to pursue a CPS diploma. We have decided to count students who are incarcerated or institutionalized as non-dropouts (transfers) because their receiving institutions should provide further schooling and their decision to leave CPS was not voluntary. However, there is no verification that incarcerated students are actually enrolled in a program leading to an accredited high school diploma, or that they plan to re-enroll in a regular high school when released. It might be argued that these students should be counted as dropouts. Doing so increases the estimate of

dropouts at age 19 by about 2 percent, as shown in Table 8.

Two types of Master File records cause particular problems for classification—ones that are missing leave codes and ones with codes that may have inconsistent meanings.

In general, if a student’s reason for ceasing to attend a CPS school is unknown, that student is coded as a dropout. Some of these students may have transferred to other districts without informing their former schools. Others may have been institutionalized or

moved out of state. If the sending school is unaware of the outcome, the student is coded as “lost” or “did not arrive.” Both the Consortium and CPS count students with leave reasons of “lost” and “did not arrive” as dropouts.

In addition, there are several thousand students who become inactive each year with no leave reason recorded. Records for most students who leave CPS without a reason are usually updated about a year after the student’s departure. When updated, most receive a code indicating that the student dropped out. Because other students whose status is unknown are automatically counted as dropouts, we have decided to count these students as dropouts until their status is updated. This decision inflates our estimates of dropouts for each year; however, the inflation is not cumulative since we adjust our classifica-

tion of these students the following year as new information is recorded. Table 9 displays the dropout rates that would have been produced if these students were classified as transfers instead of dropouts. Because most of these students eventually receive a code indicating they dropped out, we believe that our original numbers are more accurate. Dropout rates at age 14 and 15 are most strongly affected by this decision, suggesting that

Table 9. Percent of Students Dropping Out by Age and Cohort: Missing Leave Codes Counted as Transfers

Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14	0.9	1.7	1.8	2.0	1.7	1.7	1.5	1.8
15	5.2	5.9	6.2	5.9	5.7	5.7	5.9	5.6
16	16.0	15.8	15.5	15.1	16.3	16.4	15.4	
17	27.8	27.8	28.2	27.1	28.2	27.5		
18	38.3	38.1	37.7	37.0	36.6			
19	43.9	43.4	42.7	41.5				

Table 10. Percent of Students Dropping Out by Age and Cohort: Excluding Students with "Terminated IEP" and "Finished Alternative School Program, GED or non-CPS Diploma" from the Analysis

Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14	2.6	3.6	3.8	3.6	3.2	3.2	3.4	3.4
15	7.2	7.9	7.9	7.3	7.1	7.1	7.3	6.8
16	17.9	17.2	16.8	16.2	17.4	17.5	16.5	
17	28.7	28.7	28.9	27.9	28.9	28.2		
18	38.9	38.5	38.1	37.5	37.0			
19	44.1	43.5	42.8	41.6				

perhaps dropout codes are entered more cautiously for younger students.

There are two leave codes that may not have a consistent meaning for all students. One code, "terminated IEP," identifies special education students who leave the system without finishing their IEP. CPS believes that students who have left the system with this leave code in recent years should be considered dropouts, but it is uncertain if this code was used differently in past years.⁹ Another code, "finished alternative school program, GED or non-CPS diploma," is only given to students at Youth Connections, an alternative school for dropouts. We are including these students as dropouts because we are unsure whether any individual student with this code received a GED or a diploma and whether the Youth Connections diploma has the same graduation requirements as a CPS high school diploma. If students with leave reasons of "terminated IEP" or "finished alternative school program, GED or non-CPS diploma" were excluded from computations, the dropout rates would be slightly lower, as shown in Table 10. Excluding these students does not affect general trends in the dropout rates.

Of the Multiple Records That Exist for Each Student, Which Should Be Used For Each Dropout Rate Statistic?

We use students' current status in September of each year to calculate that

year's statistic. We update classifications as student records change from year to year. Students' leave codes in the Master Files do not remain static from year to year. Some students drop out or transfer from CPS and then return. Their records are updated to reflect their new status. Other students' records change as the school receives more information regarding their current status or corrects mistaken entries. (Refer back to the 1993 cohort profile and note the diagonal lines. They represent

changing status and show the wide degree to which students' classifications change from year to year.) We could record the first time students leave CPS as their final outcome, or we could use their current status at the point in time we are measuring outcomes (e.g., whether they are active or inactive at age 18 when we are measuring dropout rates by age 18). We have decided to use their current status at each age that we compute the dropout rate. In this way, we measure each student's status at a particular age with the most current information available about that student. This means that students may be classified as dropouts at age 15 and, if their status changed in the Master Files, as transfers or active students at age 16. Updating students' classifications to reflect changes in the Master Files allows us to incorporate any corrections that have been made to their records, as well as any actual changes in their status.

Which Students Should Be Included in the Final Calculations?

After the cohorts have been defined and dropouts have been identified, there are additional questions regarding which students should be included in the final dropout calculations. Decisions must be made about whether to include students who enroll in CPS during the high school years, particularly those who enroll in CPS through alternative or jail schools. We also must decide how to classify students who

Table 11. Percent of Students Dropping Out by Age and Cohort: Without New Students

Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14	3.4	4.4	4.6	4.4	3.9	3.9	4.2	4.0
15	8.1	8.9	8.7	8.0	7.7	7.8	7.9	7.3
16	19.1	18.1	17.6	16.9	18.2	18.2	17.4	
17	29.9	29.7	29.7	29.0	29.9	29.3		
18	40.5	39.7	39.2	38.8	38.4			
19	45.3	44.4	43.6	42.6				

do not drop out after five or six years but who do not graduate, as well as those who transfer to other districts.

We add new students into the cohorts after their first year of enrollment in CPS. CPS produces its four-year cohort rate by tracing the outcomes of the same group of students in the cohort over several years. However, tracing only the original cohort does not take into account the outcomes of students who enrolled in CPS after the cohort was defined. Adding new students into a cohort makes examination of that cohort more difficult. The dropout rate calculation contains a different base number of students at each age, since some new students have not yet entered the cohort by that age. Some new students enroll in CPS for only a month or two before dropping out or transferring. Because CPS would not have had much time to make an impact on these students, it may not be desirable to include their outcomes in the dropout rate. Furthermore, when new students should be included in the cohort poses additional problems. Including new students as “non-dropouts” as soon as they enter CPS lowers the dropout rate for that period because they just entered the system. They can not be dropouts or they would not have been identified as new enrollees.¹⁰

CPS’s four-year cohort rates do not include new students; its one-year rates include all students that are enrolled for any period during the year. We have decided to include those new students that enroll for at least one semester.¹¹ They are not included in our calculations until the September after they joined the cohort,

however.¹² Adding new students into the cohorts results in slightly lower dropout rates. Table 11 displays dropout rates for each cohort without the new students. At each age the rates with and without new students differ by less than 1 percent for each cohort.

We classify non-graduate active students as non-dropouts. Traditionally, students have been expected to graduate after four years of high school, which is usually at

age 18. For this reason, CPS calculates four-year dropout rates by dividing the number of students who dropped out by the number of students who either dropped out or graduated after four years. This calculation excludes those students who transferred out of the system. In CPS a substantial proportion of students spend five or six years in high school before graduating. These students also get excluded from the four-year dropout rate calculations. Since about twice as many of these students graduate the following year (the fifth year) than drop out, dropout rates that exclude non-graduate actives are inflated. Furthermore, four-year dropout rates have declined in recent years partly because smaller percentages of students have taken more than four years to graduate than in earlier years.¹³

Excluding non-graduate active students produces the dropout rates shown in Table 12. Because a large number of students are still enrolled at age 18, and these students are twice as likely to graduate the next year than to drop out, the dropout rates for age 18 are inflated using this method. The substantial

Table 12. Percent of Students Dropping Out by Age and Cohort: Non-Graduate Active Students Excluded

Age	Cohort (13 years old in September of the Cohort Year)				
	1991	1992	1993	1994	1995
18	50.4	49.0	47.9	46.3	45.8
19	46.9	46.1	45.1	43.8	

decline in dropout rates by age 18 results in large part because more students in recent cohorts took four years to graduate rather than five years. At age 19, the rates are about 2 percent higher than the rates produced if active students are included as non-dropouts.

Among those students still actively enrolled at age 19, about the same percentage eventually drop out as graduate. Therefore, the rates produced for age 19 with this method may be the best estimate of the final percentage of students that eventually drop out. Because we are also interested in dropout rates at ages younger than 19, we have chosen to include non-graduate active students as non-dropouts so that our computations are the same at all ages. *Analysts who are interested in final dropout rates for a cohort should either follow students' outcomes until age 20 (or after six years of high school if a cohort is defined by grade), or exclude from calculations non-graduate active students at age 19 (or after five years of high school), as is done in Table 12.*

We include alternative and jail school students in calculations only if they originally attended a regular CPS school. Some students originally attended school outside of CPS but enrolled in a CPS alternative or jail school after being incarcerated or expelled. These new students are much more likely than new students at regular schools to drop out of school. It seems unreasonable to include students in CPS dropout rates who have never attended a regular CPS school. We include alternative and jail school students who attended a regular CPS school prior to entering an alternative or jail school in our analyses. Students who entered CPS through one of these non-regular schools are not included in our dropout rate calculations.

We do not include students who are classified as transfers in CPS records in our dropout rate calculations. When students transfer out of CPS, we no longer have records of their status. Regard-

less of their eventual status, these students cannot graduate or drop out from CPS and, therefore, are not included in Consortium or CPS calculations of dropout rates. Excluding transferring students from dropout rate calculations does raise the possibility that some schools might minimize their dropout rates by falsely claiming students to be transfers. Although such a possibility could only be examined through an internal audit of school records, we can examine whether transfer rates from CPS have increased over the past several years.

Table 13 presents the percentages of students that left CPS from each cohort at each age.¹⁴ While there are not substantial differences across the cohorts in leave rates, there is a pattern of increasing leave rates from the 1991 cohort through the 1995 cohort and then decreasing leave rates in subsequent cohorts. Two trends in leave rates, however, are not observable in this table. First, earlier cohorts experienced more students leaving as 12-year-olds than later cohorts because a larger percentage of students in the earlier cohorts had reached their final year of elementary school by age 12.¹⁵ Therefore, the decline in leave rates for more recent cohorts would be larger if the cohorts had been defined at age 12. Second, the decline in leave rates is a result of more high-achieving students remaining in CPS for high school. Leave rates among other students have neither consistently declined nor increased over the past five years.¹⁶

If a sizeable number of schools were trying to reduce their dropout rates by classifying

Table 13. Percent of Students that Left CPS by Age and Cohort

Age	Cohort (13 years old in September of the Cohort Year)							
	1991	1992	1993	1994	1995	1996	1997	1998
14	9.1	9.7	10.2	10.4	10.5	10.3	9.8	9.8
15	13.8	14.4	14.5	14.5	15.2	14.7	14.6	14.3
16	17.5	18.1	17.6	18.3	18.8	18.5	18.0	
17	20.5	20.6	20.8	20.9	21.1	21.0		
18	22.3	22.4	22.4	22.2	22.8			
19	23.4	23.5	23.3	23.5				

students as transfers, we would expect to see rising percentages of such classifications. This is not the case. The decline in leave rates suggests that, in general, schools are not decreasing their dropout rates by increasing the categorization of students as transfers. There has been growth in the percentage of

eighth graders who are unverified transfers, and these trends may have resulted from increasing numbers of dropouts being misclassified. However, while this may be the case at some schools, the evidence does not suggest a systemwide trend.

Important Issues Not Examined in this Technical Report

In this report, we have outlined the technical issues involved in calculating a dropout rate. There are other issues that should be considered when evaluating dropout rates that are beyond the scope of this report. These are discussed briefly below.

Evaluation of the Accuracy of Student Records

Any calculation of dropout rates depends on accurate records. This report has mentioned several reasons student records may be inaccurate. Some result from uncertainty as to what actually happens to students who leave CPS. There is also error during data entry when clerks make mistakes or are not fully knowledgeable of established procedures. A systematic evaluation or audit of the student information system would enable us to make formal statistical estimates of the error in our dropout rates. We could then report a confidence interval or “error band” around them. Such an audit would also point out specific weaknesses in the system and have implications for training or better documentation.

Examination of Dropout Rates by School Type or Student Characteristics

This report does not compare trends in dropout rates among students based on their ethnicity, gender, or other characteristics, or among schools based on their performance on other measures of student outcomes or their student composition. Such analyses might show very different trends for subgroups of students or schools. We also have chosen not to adjust dropout rates for changes in the characteristics of students who are in CPS at age 13 and older, even though such changes should affect dropout rates by themselves. This report has focused solely on the technical aspects involved in calculating a dropout rate. We will present dropout rates adjusted for student characteristics in our upcoming report on the state of CPS high schools. A future report will further examine dropout rates in different types of schools and among different types of students.

IV. Summary

In this technical research report, we have presented our best estimates of CPS dropout rates over the last several years. We have also provided the details behind the computation of those rates, including the decisions involved in their construction and the effects of those decisions on the final numbers. These decisions include:

- Using a cohort rather than a one-year rate
- Defining cohorts by age, rather than grade
- Following students for six years, from age 13 to age 19, and calculating the percentage of students that dropped out by each age
- Using student Master Files rather than CPS drop files as our data source to define dropouts
- Updating students' classification as dropouts, active students, or transfers as their student records change from year to year
- Classifying particular leave codes in the Master Files as dropouts
- Adding newly enrolled students into cohorts
- Classifying non-graduate active students as non-dropouts

Our estimates show that CPS dropout rates remain high—over 40 percent of CPS students drop out by age 19. The rates decreased by about 2.5 percent between the 1991 and 1994 cohorts, the only cohorts for which we can calculate six-year dropout rates. To look at more recent cohorts we can only calculate partial rates; that is, we can follow students for five, four, three, or two years, but not six. These partial rates are more difficult to interpret. They do not show a consistent pattern of improvement, nor do they provide evidence that the dropout rates are increasing.

Using different criteria to calculate the dropout rates results in substantially different numbers.¹⁷ There are valid arguments for and against any one method. We chose the method we think is most appropriate for current circumstances in CPS and provided evidence on how our decisions affected the statistical calculations.

Despite substantial differences in rates produced across the various methods of computation, rates produced using any one method can be used to judge the general trend in dropping out from CPS. By using the same method across years, we do not introduce error from methodological differences. Therefore, the trends are reliable despite the considerable differences in rates produced across methods. Although most alternative methods show the same, slightly downward trend in dropping out, inclusion of unverified transfers results in rates that are not declining in recent years. Our upcoming report on Chicago's public high schools will begin to explore why we see these patterns in dropout trends.

Endnotes

¹ Phillip Kaufman, Jin Y. Kwon, Steve Klein, and Christopher D. Chapman. (2000). *Dropout Rates in the United States: 1999*. NCES 2001-022. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

² G. Alfred Hess, Jr. and Diana Lauber. (1985). *Dropouts from the Chicago Public Schools*. Chicago: Chicago Panel on Public School Policy and Finance.

³ The CPS one-year rate includes all students who were enrolled at some point during the year including alternative school students. The total number of students that dropped out during that calendar year (July to July) is divided by the total number of students who were enrolled for all or part of the previous school year. The rate reported by the State Report Card does not include students attending alternative schools and it divides the number of students who dropped out during the school year by the number of students that were enrolled on September 30.

⁴ CPS dropout rates: Let me count the ways. (2000). *Catalyst: Voices of Chicago School Reform*. Vol. 11, No. 9

⁵ For example, dropping out becomes legal at age 16. Pregnancy and full-time employment become more feasible at older ages. The positive relationship between grade level and the probability of dropping out exists only because of the relationship between age and grade level. Holding age constant, there is no positive relationship between grade level and dropping out. Holding grade level constant, there is still a strong positive relationship between age and dropping out.

⁶ Drop out rates among 12 year olds ranged from 1.2 percent in 1993 to 0.9 percent 1998. Of these 12-year-old dropouts, about one-third re-enrolled in CPS within the next two years.

⁷ Most of these students are not in special education, although special education students comprise a disproportionate share of this group. In the 1993 cohort, for example, 23 percent of the students still active at age 18 were in special education while the percentage of special education students active at age 15 was 14 percent. By age 20, 28 percent of those students still actively enrolled at age 19 had graduated while 33 percent had dropped out.

(Another 28 percent were still enrolled at age 20 and 10 percent had left CPS.) If the cohort were defined as first-time ninth graders, 13 percent would still be actively enrolled after four years, in the fall of 1998.

⁸ Including these additional graduates and dropouts in the overall numbers would bring the total percent that had graduated to 41 and the percent that had dropped out to 35.

⁹ The number of high school-aged students who received this code decreased from 0.4 of a percent of the students that left CPS in 1994 to 0.1 of a percent of those that left in 2000.

¹⁰ This phenomenon can be seen in the 1993 cohort profile in the insert, "General Patterns of Movement: One Cohort of Students." At age 14, a sizable number of students entered CPS from other districts, indicated by the lines from the dark gray circle at the top left of the chart. By definition, these students had to enter the system as active students (non-dropouts), which is why lines from this circle are only directed to the two active rows (on- and off-schedule). Including them in the dropout statistic for age 14 lowers that dropout rate, which is calculated as the number of dropouts divided by the number of active students plus dropouts.

¹¹ This includes students who enter CPS in the fall semester and remain until January, and those that enter in the spring semester and remain active for at least part of the following fall semester.

¹² For example, students entering CPS in September 1996 would have joined their cohort by fall 1996. They would not be counted in the dropout rate for fall 1996 because they just joined the cohort. If they stayed actively enrolled their first semester in CPS, but dropped out the following semester, they would be counted as dropouts for fall 1997.

¹³ See our upcoming report on high schools for more details on students' movement through high school.

¹⁴ The percentages were produced by dividing the number of students who left CPS (those who transferred to another school or were institutionalized) by the number that transferred, remained active, graduated, or dropped out.

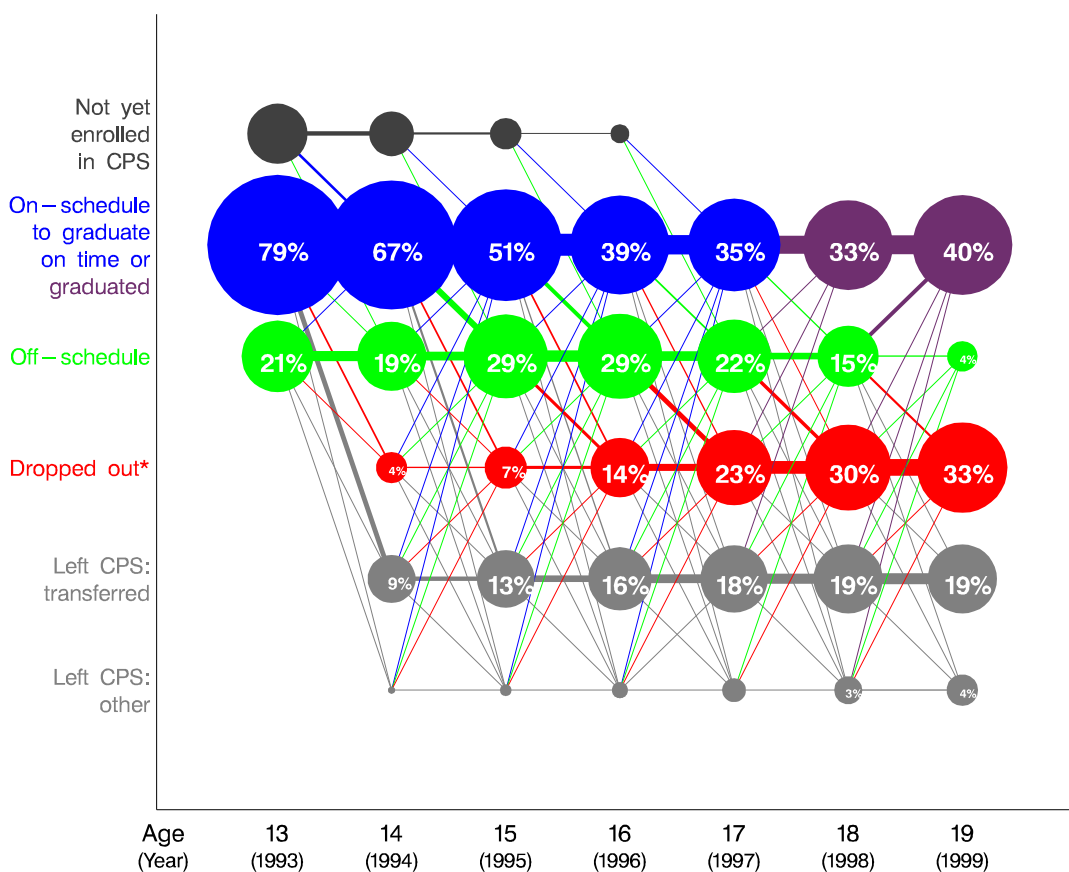
¹⁵ For example, 11.4 percent of the 12 year olds in fall 1993 were in eighth grade (3,628 students) compared to 2.4 percent of the 12 year olds in fall 1997 (728 students). Of the 12-year-old eighth graders in 1993, 493 left before the next fall and were never included in the 1994 cohort. In total, 7.1 percent of the 12 year olds in fall 1993 left before 1994, never making it into the 1994 cohort. In comparison, only 5.9 percent of the 12 year olds in fall 1997 left before the following fall. The substantial differences among cohorts in the number of students reaching eighth grade by age 12 is a result of a change in CPS policy; the date by which students had to turn five to enter school was pushed back from December to September over several years.

¹⁶ Achievement levels are based on seventh-grade ITBS scores. High achievers scored in the top quartile of all CPS students who took the test. Leave rates among students other than high-achievers have fluctuated by 1 to 2 percent across the last five years, but do not show a consistent pattern.

¹⁷ If all criteria that inflate the rate were used (including unverified transfers as dropouts, including incarcerated students as dropouts, and excluding from the calculation students still active at age 19), the dropout rate among 19 year olds from the 1994 cohort would be 53 percent. If all criteria that deflate the rate were used (excluding from calculations students with missing leave codes, "terminated IEP," or "finished alternative school" codes), the dropout rate for this group would be 41 percent.

General Patterns of Movement

Progression of 13 Year Old Students: Beginning in Fall 1993
(High School Class of 1998)



*To produce the drop out rate at any age, divide the percentage of students who are dropouts at that age by the sum of the percentages of students on-schedule, off-schedule, or dropped out. Students who have left CPS are not included in the calculation of dropout rates.

Example of Student Outcomes: 13-Year-Old Students in 1993

The figure above demonstrates the general patterns of movement of one cohort of students—those who were 13 years old in September 1993—over six years, until September 1999. We chose the 1993 cohort as the base year because this is the last cohort in which virtually no students were subject to an eighth-grade promotional gate.¹ The circles represent the proportion of students that have attained a certain outcome, and the lines represent year-to-year movement between different outcomes. The size of the circles and lines is proportionate to the number of students they represent. The figure is explained in detail below.

In September of 1993, there were 32,650 13-year-old students actively enrolled in CPS. Seventy-nine percent of these students were in eighth grade or higher. These students were on schedule to graduate by age 18. They are represented by the blue circle in the upper left area of the chart (the row labeled "On-Schedule" and the column labeled "Age 13"). The remaining 21 percent of the cohort was not yet in eighth grade, most of these students had probably been held back in earlier years. They are represented by the smaller green circle in the "Off-Schedule" row, in the column labeled "Age 13". By the following year, when

¹ The 1995 cohort was the first to participate fully in the eighth-grade promotional gate. However, a substantial proportion of the 1994 cohort, those who were not yet in eighth grade at age 13, was also subject to the gate in its first year of implementation.

these students were 14 years old, 67 percent were on schedule to graduate by age 18. That is, they were in ninth grade. Another 19 percent of the cohort were actively enrolled in CPS, but still in elementary school. Four percent of the cohort had dropped out, 9 percent had transferred to another school district, and less than 1 percent had experienced some other outcome (institutionalization, incarceration, death). By age 15, 51 percent of the original cohort were in tenth grade, 29 percent were enrolled in a grade lower than ten, 7 percent had dropped out, and 13 percent had transferred. By age 16, 39 percent were in eleventh grade, 29 percent were enrolled in a grade lower than eleven, 14 percent had dropped out and 16 percent had transferred. By age 17, 35 percent of the cohort were in twelfth grade, 22 percent were in a grade lower than twelve, 23 percent had dropped out, and 18 percent had left the system for another school. By age 18, the fall of 1998, 33 percent of the original cohort had graduated, 15 percent were still enrolled, 30 percent had dropped out, and 19 percent had left the system. By the fall of 1999, most of the remaining active students had either graduated or dropped out, bringing the total percentage that graduated to 40 and the percentage that dropped out to 33.² Four percent were still enrolled, 19 percent had transferred out of CPS, and 4 percent had experienced other outcomes.

The dark gray circles in the figure represent students who had not yet enrolled in CPS when the cohort was defined, but who enrolled some time after age 13. New students comprised 15 percent of the final cohort and their outcomes are included in our calculations of dropout rates. About half of these new students entered CPS at age 14; the remainder entered at older ages.

² While many special education students are expected to remain in high school for more than four years, most students still active at age 18 (77 percent) were not special education students. Special education students did comprise a larger percentage of 19-year-old graduates than 18-year-old graduates (18 percent compared to 6 percent). However, 82 percent of the students that graduated between age 18 and 19 were not in special education, and less than 1 percent of dropouts between age 18 and 19 were recorded as terminating their IEP.

³ Because the numbers in the figure do not contain decimal places, calculations made using the numbers in the figure are only accurate to 2 percent. See Table 1 in the report for exact dropout rates.

To calculate the dropout rate at any given age, you can divide the percentage of students that dropped out by the sum of the percentages that are on-schedule, off-schedule, or have dropped out. At age 14 this would be $4 \div (67+19+4)$, or about 4 percent.³ Students who left CPS are not included in dropout rate calculations since they are no longer part of CPS. Including them in the base numbers (e.g., using the 33 percent from the figure as the dropout rate) would be equivalent to classifying them as non-dropouts, thus confounding the dropout and transfer rates.

The figure demonstrates several patterns in CPS student outcomes that may not be well understood. Although the 1993 cohort is used only as an example, similar patterns appear in all of the cohorts. First, dropping out occurs primarily at ages 16, 17, and 18, although many students drop out before and after these ages. A small, but significant number of students drop out before high school. Four percent of the 1993 cohort dropped out before age 14, all of whom were not yet in high school. Some of the students who were off-schedule at age 14 also dropped out, which was equivalent to another 1.6 percent of the cohort. If we had defined the cohort as first-time ninth graders, these dropouts would not be counted. Second, a substantial proportion of CPS students are off-schedule, or old for their grade. Fifteen percent of the 1993 cohort had not graduated by age 18. Finally, there is a great deal of movement into and out of CPS, including students who are new to the system and students who have re-entered after dropping out or transferring. The substantial degree of non-traditional movement between grades, between active and inactive status, and between different inactive classifications makes interpretation of student outcomes more complex.

**This is an insert to the technical research report:
*Calculating a Cohort Dropout Rate for the Chicago Public Schools.***



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This report reflects the interpretations of the authors. Although the Consortium's Steering Committee provided technical advice, no formal endorsement by these individuals, their organizations, or the full Consortium should be assumed.

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The Consortium on Chicago School Research is an independent federation of Chicago area organizations that conducts research on ways to improve Chicago's public schools and assess the progress of school improvement and reform. Formed in 1990, it is a multipartisan organization that includes faculty from area universities, leadership from the Chicago Public Schools, the Chicago Teachers Union, education advocacy groups, the Illinois State Board of Education, and the North Central Regional Educational Laboratory, as well as other key civic and professional leaders.

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