Baseline Statistics for Evaluation of the Effective Practice Incentive Community

Final Report

March 18, 2009

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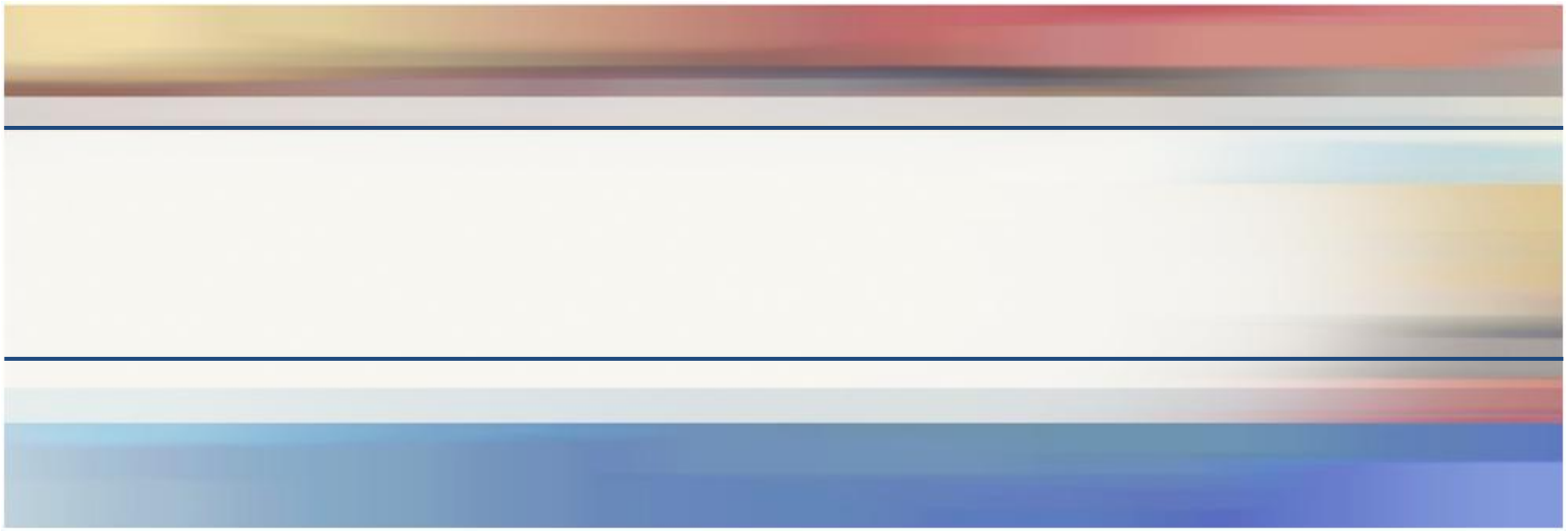

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CONTENTS

TABLES

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CHAPTER I

INTRODUCTION

In 2006 and 2007, the U.S. Department of Education awarded Teacher Incentive Fund (TIF) grants for the development of innovative strategies for teacher compensation. New Leaders for New Schools (NLNS), with five partner organizations—Memphis City Schools (MCS), the District of Columbia Public Schools (DCPS), Denver Public Schools, Prince Georges County Public Schools, and a consortium of charter schools—received five of these grants and is using them to implement their Effective Practice Incentive Community (EPIC) intervention. EPIC offers performance-based awards to staff in high-performing schools in return for their agreement to work with NLNS in documenting and sharing effective teaching practices.

Mathematica Policy Research Inc. (MPR) was hired to evaluate the EPIC initiative. Our work involves an analysis of the process for documenting and sharing effective teaching practices and an analysis of whether educators in participating districts change their practices after NLNS disseminates information on effective practices. When possible, MPR will also examine whether the availability of performance-based incentives leads to changes in student performance at schools eligible for those incentives. This report focuses on three EPIC partners of NLNS: the MCS and DCPS school districts and the consortium of charter schools. MPR is not conducting the evaluation of EPIC in Denver, and MPR's work in Prince Georges County had not yet begun as of September 2008.

EPIC awards were first given out in the fall of 2007 based on 2006-2007 performance. However, since school staff were unaware of the program before the fall of 2007 it is unlikely that the 2006-2007 performance was affected by EPIC eligibility. Thus, for the purposes of this report we are treating all data from before the 2007-2008 school year as baseline data. Due to data limitations we are presenting data from both the 2006-2007 and 2005-2006 school years, depending on the variable and partner. Details regarding the year of the data are given in the partner chapters.

Another component of the evaluation may involve comparing EPIC eligible and EPIC ineligible schools. In Memphis we have data on a number of EPIC ineligible schools. A

second purpose of this report will be to compare the baseline characteristics of the EPIC eligible and EPIC ineligible schools to see if there are any important differences that need to be taken into account when developing our evaluation plans.

This chapter provides a general overview of EPIC, compares student characteristics across the three partners, and compares the data used to determine which schools receive EPIC awards with data on all the students attending these schools. Chapters II, III, and IV present baseline characteristics by partner: Chapter II focuses on Memphis, Chapter III on DC, and Chapter IV on the charter school consortium. The results are broken out by whether or not the schools received awards, by their performance levels, and by whether or not they were eligible for EPIC.

Two additional reports on the characteristics of EPIC schools are forthcoming. In January 2009, MPR will release a summary of responses to our survey of principals in the MCS and DCPS districts and the charter school consortium. That summary will examine principals' knowledge and perceptions of EPIC at baseline and their perceptions of incentive programs in general, and will report on the baseline practices followed by principals and teachers in EPIC-eligible (and in some cases, EPIC-ineligible) schools. In July 2009, MPR will release a report summarizing teacher awareness of EPIC; that report will also present case studies of the NLNS process for identifying effective practices in each of the three school districts.

OVERVIEW OF EPIC

EPIC has two key features. First, through the initiative NLNS offers performance-based incentives to eligible schools in each of the partner school districts. The awards are made to principals, teachers, and (in some cases) additional staff. NLNS identifies high-performing schools based on scores derived from Value Added Models (VAMs); VAM-based scores are similar to average student achievement gains.[1] The awards are designed primarily to encourage school staff to help NLNS document effective practices. In addition, because these performance-based awards will be offered over multiple years, they might serve as an incentive for principals and teachers to improve student achievement.

Second, EPIC includes an intensive effort to document and disseminate effective practices. NLNS works with staff in the highest-performing schools to identify practices that could contribute to the observed large growth in student achievement. These practices are then disseminated not only to all schools in the partnerships but to all schools nationwide, even those not eligible for incentive awards. The primary motivation for EPIC is the belief that these dissemination activities will result in changes in principal and teacher practices, and thereby cause improvements in student achievement.

[1] VAM scores are intended to reflect the average contribution that each school makes to student achievement, holding constant factors that the school cannot control, such as the prior achievement of each student. See Booker and Isenberg (2008) and Booker, Chaplin, and Isenberg (2008) for details.

Incentive Awards

NLNS is making financial awards to staff in high-achieving schools during the 2007/2008 through 2011/2012 school years. The payments are supplemental income that the staff receiving them may use as they see fit.

In the 2007/2008 school year, NLNS made two types of EPIC awards:

1. The **Gold-Gain Award** is given to the highest-performing schools in each partner district/consortium.

2. The **Silver-Gain Award** is given to the second tier of high-performing schools in each partner district/consortium.

The eligibility criteria for these EPIC incentive awards varied from partner to partner. In Memphis, only schools where 50 percent or more of the student population qualified for a free or reduce price lunch (F/RPL) were eligible, while in the District of Columbia all schools were eligible. Concerning the charter school consortium: only schools where 30 percent or more of the student population qualifies for F/RPL were recruited into the consortium and could therefore become eligible for the awards.[2] As discussed later, other factors could affect a school's eligibility for EPIC incentive awards.

The achievement criteria for these two awards also varied among partners. In Memphis and the charter consortium, Gold-Gain awards went to schools with the highest VAM scores, and Silver-Gain awards to schools in the next tier of VAM scores. In the District of Columbia only Gold-Gain schools were identified, and this was done by examining changes in the percentage of students at each school that were proficient on state tests.

The number of schools that received Gold-Gain and Silver-Gain awards varied from partner to partner. The number of awardees was determined by NLNS based in part on the distribution of high-performing schools. Other district-specific criteria were used to determine the number of schools in each category.

The types of staff who received awards, as well as the size of the awards, also varied from partner to partner. Principals, assistant principals, and instructional staff received awards in Gold-Gain and Silver-Gain schools in all three partners. In DCPS, other building staff (guidance counselors and school support such as custodial and lunch service staff) also received awards. The size of the award payments varied substantially. For example, principals at Gold-Gain schools received between $10,000 and $20,000, and all instructional staff in Gold-Gain schools received between $1,500 and $8,000 (Table I.1).

A central goal of the 2007/2008 awards was to make teachers aware of the EPIC incentive program. While these early awards were given out based on performance during the 2006/2007 school year, the school staff were not aware of EPIC during 2006/2007.

[2] Eligibility was also conditional on supplying sufficient data for calculation of the VAM scores.

Awards to be made in 2008/2009, by contrast, will be based on performance during the 2007/2008 school year, when staff were aware of the program, so knowledge about eligibility for these awards (and the awards given in later years) might encourage school staff to raise student achievement.

In addition to the school-wide awards made in Gold-Gain and Silver-Gain schools, NLNS is planning to give "Spotlight" teacher awards to selected teachers in the Gold-Gain charter schools during the 2008/2009 school year and in Memphis during the 2009/2010 school year. NLNS is not planning to make spotlight teacher awards in DCPS. Spotlight teachers will be identified through a combination of teacher-level VAM estimates, classroom observations, and interviews with building staff.

Table I.1. EPIC Incentive Award Amounts

	Gold-Gain Schools	Silver-Gain Schools
Memphis		
Principals	$15,000	$10,000
Assistant principals	10,000	7,500
All instructional staff	1,500	1,000
Spotlight teachers (2009/2010 and later)[a]	7,500	n.a.
DCPS[b]		
Principals	10,000	n.a.
Assistant principals	9,000	n.a.
All instructional staff	8,000	n.a.
Spotlight teachers[c]	n.a.	n.a.
Guidance counselors	4,000	n.a.
School support	2,000	n.a.
Charter School Consortium		
Principals	20,000	15,000
Assistant principals	15,000	10,000
All instructional staff	1,500	750
"Spotlight" teachers (2008/2009 and later)[a]	10,000	n.a.

[a]Spotlight teacher awards are made to selected teachers in Gold-Gain schools only.
[b]DCPS's EPIC program—called TEAM—does not include payments to Silver-Gain schools.
[c]DCPS has not decided whether or when it will make "Spotlight" teacher awards.

Effective Practices

The second key feature of EPIC is the documentation and dissemination of effective practices. Once the Gold-Gain schools have been identified, NLNS will work to identify the most effective teachers in those schools. NLNS will send what it calls "Effective Practice Teams" into Gold-Gain schools to identify effective principal and teacher practices.

The Effective Practice Teams will document effective practices through a series of systematic interviews. The identification of these practices will also be informed by previous

research and through classroom observations. The Effective Practice Teams will film some of the effective practices in action for future dissemination.

Once the effective practices are identified and documented, NLNS will develop a dissemination campaign. In each partner district or consortium, all schools – regardless of eligibility for incentive awards – will be targeted by the dissemination. Current plans call for dissemination through internet-based presentations and videos but NLNS is also considering other modes.

Summary Research Approach

The evaluation will focus on both the incentive award component and the effective practices component of EPIC. Key research questions include (but are not limited to):

- In what ways do teachers and school administrators learn of the availability of EPIC incentives?
- What are principals' and teachers' perceptions of performance-based pay? How do these perceptions change over time? How do these perceptions differ by partner?
- What are principals' expectations regarding whether incentives will affect teacher behavior and student outcomes?
- How do the availability of awards and the dissemination of best practices affect student achievement in eligible schools?
- Before EPIC's best practices are disseminated, how do principals and teachers learn about best practices for teaching in their grade/subject? Do these avenues of best-practice awareness differ by partner?
- How do EPIC Effective Practice Teams identify best practices? How are they disseminated?
- Are principals and teachers aware of EPIC-identified effective practices after they are disseminated? Does this differ by partner?
- In what ways do principals and teachers report changing their teaching practices in response to EPIC effective-practice dissemination? Do the changes vary by partner?

It is important to note that not all of these research questions will be examined for each partner. In particular, when examining the impact of incentives, we would like to know how students would have performed if their teachers were not eligible for an incentive award. However, for at least one—and possibly all—of the three EPIC partners, we will not have an appropriate comparison group that could be used to answer this question. For instance:

1. For DCPS, we have no valid comparison group to represent ineligible schools, because virtually all DCPS schools were eligible for EPIC.

2. For MCS, EPIC eligibility criteria established at the outset that some schools could receive EPIC incentives and some schools were ineligible. These ineligible schools could be used as a comparison group to measure the impact of incentive eligibility on student achievement. However, as discussed later in this report, these ineligible schools are systematically different from the eligible schools in their baseline characteristics, casting doubt over the assumption that the ineligible schools would be a valid counterfactual for the eligible schools. Moreover, questions about the longevity of EPIC incentive awards in MCS could undermine the ability of the incentives to have an impact, thereby reducing the benefits of conducting an evaluation there.

3. For the charter school consortium, there is a special challenge: finding a group of charter schools that has been participating in the intervention long enough to be affected and for which there is a reasonable comparison group. Schools that participated last year but not this year will not work, since their award last year was based on performance in the previous year when they were unaware of EPIC. Schools that participate this year for the first time are in a similar position—their awards this year will be based on last year's performance, when they were not aware of EPIC. Thus, the most likely candidates for our treatment group will be schools that were participating in EPIC both this year and last year. Within that subset of participating charter schools we will then need to find reasonable comparison schools. We believe that it will probably be important to identify charter schools located in the same cities in order to accomplish this. We have identified several cities where we expect to have at least four charter schools each in the consortium. We hope to use other charter schools that are in these cities, but not in the consortium, as a comparison group for the evaluation. However, it remains to be seen how many of the charter schools participating in EPIC in the first year in those cities will continue participating in EPIC this year. To the extent that a high proportion of schools in these cities drops out of the consortium, our ability to evaluate the impact of incentives on student achievement will be compromised.

In short, for partners for which we have no comparison group, our research will likely focus on the degree to which principals and teachers are aware of their eligibility and their perceptions of EPIC and teacher incentives more generally, but not on whether eligibility for EPIC affects student performance. In cases where there is a comparison group, we will examine how student performance is affected by EPIC eligibility.

OVERVIEW OF STUDENT DATA

There are two sources of data used in this report: data on individual students in tested grades obtained in order to estimate value-added models (the VAM data) and data

summarizing school, student, and teacher characteristics that was obtained from various websites (public data).

The VAM Data

The VAM data for Memphis and the District of Columbia came directly from the school districts, which passed them on to NLNS, and from there the data were sent to MPR. Consequently, the way the data were provided was consistent across all schools within each of these districts. In contrast, the charter school VAM data came from each school separately, so MPR needed to do a great deal of work in order to put those data into one consistent format. The VAM performance measures are designed to measure performance during the 2006/2007 school year[3] and all VAM student characteristics are for the 2006/2007 school year.

The charter school data were originally submitted in a variety of formats including flat ASCII files, SPSS, Microsoft Word, and Microsoft Excel. After all files were transferred into Excel, the data sets were reviewed for accuracy and completeness. All variables were coded consistently across files, and schools with missing data were contacted to request follow up data submissions. Several schools also chose to submit entry and exit dates for students in lieu of number of days enrolled. MPR staff used these dates to generate an approximation of days enrolled, accounting for weekends and major holidays. After two months of data cleaning, the data sets were stacked to create a "master" charter data set. Student IDs were then linked across years to create the longitudinal data set used to estimate the value-added model.

For each partner, student data are being collected for 2005/2006 through 2010/2011. These data are used to construct VAM analyses of performance—and to identify Gold-Gain and Silver-Gain award schools—in the 2007/2008 through 2011/2012 school years. Note that the information available on student records differs from partner to partner (Table I.2).

The Public Data

In this report, we rely primarily on the VAM data to describe the baseline characteristics of EPIC schools. The VAM data were selected because they reflect the characteristics of students who are being used to estimate the VAM scores and in the evaluation of EPIC. However, the VAM data do not cover all students in a school. Instead, they only include students who took the standardized tests included in the VAM estimates. This means that students in some nontested grades as well as students who were exempt from the tests are not included in the administrative data. We use publicly available data on all students in each school to see if there are differences between those students who are covered by VAM and those who are left out. We also use publicly available data to obtain information on some school characteristics that are not available in the VAM data.

[3] See Booker and Isenberg (2008), and Booker, Chaplin, and Isenberg (2008) for details. VAM scores in DC were estimated using a method similar to that used for Memphis.

Table I.2. Student Information Available by Partner

	Memphis	DCPS	Charter School Consortium
Grade	✓	✓	✓
Academic performance	✓	✓	✓
Days enrolled	✓		✓
Days present	✓		
Race/ethnicity	✓	✓	✓
Gender	✓	✓	✓
Eligible for free/reduced-price lunch	✓	✓	✓
Limited English proficiency status	✓	✓	✓
Special education status	✓	✓	✓
Suspended days	✓		
Student retained	✓	✓	
Expulsion status	✓		
Excused and unexcused absences		✓	

In Memphis, the public data were obtained from the National Center for Education Statistics (NCES) Common Core of Data and "School Profiles" on the Memphis City Schools website. In DCPS, the public data were obtained from the NCES Common Core of Data and Annual Yearly Progress (AYP) reports linked to the DCPS website.[4] For charter schools, the public data came from a variety of sources. Most charter school data came from the NCES Common Core of Data and individual school report cards posted on state department of education websites.[5] Some data also came from individual school websites and the Center for Education Reform website.

Differences Between the VAM Data and the Public Data

Because the characteristics of students included in the VAM data could differ from the characteristics in the public data, we compared the VAM with public data on the fraction of students who are black, the fraction F/RPL, the fraction Hispanic, and the fraction male for all partners. For Memphis and the charter consortium we also compared the fractions classified as special ed and LEP. We found only one area where the difference was larger than four percentage points: the fraction of students LEP was 8 percent for the charter consortium in the VAM data but 16 percent in the public data. The remaining differences were generally quite small. (See Tables I.3–I.5 for details.)

[4] AYP is used to measure school performance for the purpose of school accountability under the No Child Left Behind legislation (NCLB).

[5] States are required to post these report cards because of the NCLB legislation.

Table I.3. Student Sample vs. Overall School Characteristics, Memphis City Schools

Characteristics	Tested Students (%)	All Students (%)
Ethnicity		
Black	92.3	90.7***
Hispanic	3.8	4.4***
FRPL	85.9	85.8
Male	50.6	51.6***
Number of Schools	**144**	

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: The data for tested students are for the students in our VAMs for the 2006-2007 school year. The data for all students are from the Common Core of Data for 2005-2006 school year.

Table I.4. Student Sample vs. Overall School Characteristics, Charter Schools

Characteristics	Tested Students (%)	All Students (%)	Number of Schools with Nonmissing Values for Both Variables
Ethnicity			
Black	45.8	46.1	63
Hispanic	30.8	30.6	63
FRPL	68.2	67.7	54
LEP	8.3	16.4***	54
Special education	9.8	9.1	35
Male	50.8	48.3	24

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: The data for tested students are for the students in our VAMs for the 2006 2007 school year. The data for all students are from publicly available data for 2006-2007 when possible and from 2005-2006 otherwise.

Table I.5. Student Sample vs. Overall School Characteristics, DC Schools

Characteristics	Tested Students (%)	All Students (%)
Ethnicity		
Black	83.8	82.0***
Hispanic	10.1	10.9**
FRPL	66.2	67.8*
LEP	6.4	8.5***
Special Education	15.6	11.9***
Male	51.8	48.8***
Number of Schools	**126**	

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: The data for tested students are for the students in our VAMs for the 2006-2007 school year. The data for all students are from the Common Core of Data for 2005-2006 school year.

There are a number of reasons why the VAM and public data could differ. One reason is that the data were sometimes from different years.[6] Another reason is that not all students were tested. While the differences observed were usually small, one difference was large and many of the others were statistically significant. Consequently, we separated out those schools where all students were in tested grades (that is, where no students were outside of the grade 3–8 range). Tables A.1-A.3 in the appendix show the data for schools that include tested grades only.

In Memphis, three of the four differences between the VAM data and the public data are statistically significant when we look at all schools. One of these differences becomes statistically insignificant (for the fraction Hispanic) and the p-value for another increases from less than 0.01 to 0.07. Again, this is in part because the sample size was reduced to only 19 schools out of an original 144. However, the magnitudes of both of those differences decrease as well. One difference remains statistically significant and similar in magnitude (for the fraction of students male), but still under 2 percentage points.

Only one difference is statistically significant when we look at all charter schools, namely, the fraction of students LEP. This difference becomes smaller in magnitude and statistically insignificant when we limit the data to the five schools that only served tested

[6] The public data on student characteristics are for the 2005/2006 school year for DC and Memphis. In Charters the public data are for 2006/2007 when possible but for 2005/2006 when it was difficult to obtain 2006/2007 data.

grades. However, one other difference goes from being under 1 percentage point and statistically insignificant to being over 4 percentage points and statistically significant, namely, the fraction of students in special education. This fraction was 13.8 percent in the VAM sample but only 9.5 percent in the public data, suggesting that in these five schools the Special Education students were overrepresented rather than being under-represented in the sample of students tested; it is the opposite of the pattern one would expect to see if schools were trying to avoid testing their low-performing students.

In DCPS, all of the differences are statistically significant when we compare the VAM and public data using all schools, but none of the differences are statistically significant when we limit the data to the schools where all students were tested. This is in part because only 12 schools tested all students. However, the magnitudes of all of those differences are also smaller in the latter set of schools.

To summarize, it appears that the VAM data and public data generally yield similar pictures of school characteristics. There may be differences for individual schools but those differences offset each other when we analyze schools as a group, which is what will be done in our evaluation.

OVERVIEW OF BASELINE CHARACTERISTICS BY PARTNER

In this section we describe the characteristics of schools for each of the three partners. We cover the grade level, whether an award was received, the AYP status, the fractions of students who were proficient, the numbers of students and teachers, and the fractions of students by race, ethnicity, and gender. These statistics are presented by partner in Table I.6.

Table I.6. Baseline Characteristics

Category	Memphis Schools	DC Schools	Charters
School Level (%)			
Elementary schools	69.7	72.9**	34.0***
Middle schools	16.6	14.0	47.4***
High schools	13.8	13.2	18.6
Awards (%)			
Gold-winning schools	2.8	2.3	7.2*
Silver-winning schools	8.3	0.0**	15.5***
Non-award schools	89.0	97.7**	77.3***
School Performance (%)			
AYP pass	80.1	24.6***	54.9***
Identified as “in need of improvement”	16.4	76.9***	36.3**
Student proficiency			
ELA proficient	83.6	38.7***	40.0***
Math proficient	80.3	31.2***	39.7***
School Characteristics			
Enrollment	641.6	379.9***	421.1***
Student-teacher ratio	16.9	13.7***	17.1
Staff size	37.0	31.0***	27.3***
Student Characteristics (%)			
Ethnicity			
Black	91.9	83.8**	50.2***
Hispanic	3.9	10.1***	25.3***
FRPL	85.9	66.2***	65.9***
LEP	3.1	6.4***	7.0***
Special education	10.9	15.6***	10.6
Number of Schools	**145**	**129**	**97**

*Significantly different from the Memphis City Schools at the 10% level.
**Significantly different from the Memphis City Schools at the 5% level.
***Significantly different from the Memphis City Schools at the 1% level.

Notes: Only Memphis schools eligible for an EPIC award in 2008-2009 are included in these statistics. These data are for the 2006-2007 and 2005-2006 school years. See text for details.

For this report schools are divided into three grade-level categories (elementary, middle, and high) based in large part on how the EPIC awards were given out. The fractions of schools in each category are similar in DCPS and Memphis but quite different among the charter schools. This may have occurred in part because of the definitional differences across the partners[7] and in part because charter schools chose to apply to EPIC whereas in DCPS and Memphis most non-charter regular public schools were eligible for the program.[8] In DC and Memphis, about 70 percent of schools were categorized as elementary and less than 17 percent were categorized as middle schools. In contrast, in the charter consortium only about one-third of schools were in the elementary school category and almost half were in the middle school category.

NLNS worked with each partner and the U.S. Department of Education to determine the number of awards that would be given out. Factors that were considered included the total funding available for each partner and the distribution of VAM scores and their confidence regions, but there was no attempt to make the criteria for getting an award similar across partners. A much higher fraction of charter schools received awards than of DCPS or Memphis schools. DCPS only gave out one type of award and only about 2.3 percent of schools received this award in the 2007-2008 school year (three schools in total). In Memphis, a similar percent (2.8) received Gold awards and another 6.2 percent received Silver awards. Among the charter schools, 7.2 percent of schools received Gold awards and 15.5 percent received Silver awards.

Each state determines its own cut-points for student proficiency. Thus, comparisons across states might not reflect differences in student skills (NCES 2007). However, comparisons do affect which schools may be held accountable under NCLB. In our data, Memphis schools had much higher student proficiency rates on state tests than did DCPS schools, perhaps in part because the State of Tennessee may have somewhat lower standards for proficiency than other states (NCES 2007). Over 80 percent of students in Memphis were proficient in both math and English Language Arts (ELA), in comparison with less than 40 percent of students in DCPS. The results for charters are omitted since the fractions of students proficient were available for only 13 out of the 97 charter schools.

[7] In DCPS, elementary schools are defined as schools that serve at least grades 4 and below, middle schools are schools that serve no grades lower than 5th or higher than 9th (middle schools include junior highs that go up through 9th grade), and high schools are defined as those that serve no grades lower than 9th. In Memphis, **e**lementary schools typically serve grades 5 and below; a few include grade 6 as well. Most middle schools cover grades 6, 7, and 8. Most schools in the high school group have only students in 9th grade and above, but three high schools also include grades 7 and 8. Charter elementary schools serve grades 2 through 6 (or any subset of those grades), charter middle schools serve grades 7 and 8, and charter high schools serve 9th grade and above. Unlike Memphis and DCPS, charter schools serving multiple school levels were eligible for multiple award pools, although they could only win one award apiece. In this report, most charter schools that covered multiple grade levels were assigned to their highest school level served. The exception is for schools that won an award at a level other than their highest level and that were assigned to the award-winning school level.

[8] The details of eligibility differed for Memphis and DCPS. See Chapters II and IV.

The Memphis schools were the largest schools based on both students and teachers. DCPS schools had fewer students, on average, but more teachers. Consequently, the ratio of students to teachers was lowest in DCPS schools (at around 14 to 1) compared with around 17 to 1 for both Memphis and the charter schools.

The student populations in both Memphis and DCPS schools were predominantly black (92 percent and 84 percent, respectively). In contrast, the charter schools averaged around 50 percent black, although another 25 percent of their students were Hispanic, as compared with 10 percent Hispanic in DCPS and only about 4 percent in Memphis.

In Memphis schools eligible for EPIC, on average about 86 percent of students were eligible for free or reduced price lunches (F/RPL), compared with about 66 percent of students in DCPS and charter schools.[9] This is probably in large part because Memphis had a higher cut-off to be eligible for EPIC. In Memphis, schools had to have at least half of their students F/RPL to be eligible for EPIC, compared only a 30 percent for charters and no cut-off at all for DCPS.[10]

The fractions of students with limited English proficiency (LEP) were generally quite low. In Memphis, the average school had only 3.1 percent of students LEP. The fractions were larger for DCPS and the charter schools, averaging 6.4 and 7.0 percent respectively. The fractions of students designated for Special Education were also fairly low—averaging around 11 percent for Memphis and the charter schools and around 16 percent for DCPS.

To summarize, in DCPS and Memphis most schools were elementary schools, whereas among the charters only about a third fell into that grade span. The fraction of schools receiving awards was highest for charters and lowest for DCPS, while the fractions of students measured as proficient was highest in Memphis. However, it should be noted that neither of these measures of performance was designed to be compared across these geographic entities. Memphis and DCPS had somewhat higher fractions of black students whereas charter schools had more Hispanics. Memphis's eligible schools had a higher fraction of students eligible for F/RPL. The fractions of students LEP and in Special Education were low for all three sets of schools.

PLAN OF THE REPORT

This chapter provided overviews of EPIC in general, the data used to examine the baseline characteristics of schools in the EPIC program, and overall characteristics of the EPIC schools. Subsequent chapters discuss the baseline characteristics of schools in Memphis, DCPS, and the charter school consortium, respectively. Because the specific

[9] The federal TIF funds can only be used to pay for awards to schools with at least 30% F/RPL. If schools with lower percentages of students F/RPL win awards DCPS pays for those awards with separate funding.

[10] In DCPS, funds from DoE could only be used for schools with at least 30 % F/RPL. If other schools had been given awards, DCPS would have needed to secure separate funding for those awards.

details of the EPIC initiative differ from partner district to partner district, each chapter summarizes how EPIC was implemented in each district.

Each of the following chapters presents the baseline characteristics of schools, drawing comparisons between different types of schools within the partnership covered in that chapter. For each EPIC partner, different sets of comparisons are relevant:

- For Memphis, where some schools are ineligible for EPIC, we compare the characteristics of eligible versus ineligible schools. This information is used to help inform our proposed efforts to estimate the impacts of EPIC in Memphis.

- For all three partners, we compare EPIC award-winning schools with non-award-winning schools.

- For all three partners, in order to understand how the highest achieving schools in each district (including but not limited to EPIC award winners) compare with schools at other points in the distribution of student achievement, we compare school characteristics by VAM quartile. Specifically, we compare the characteristics of schools in the top quartile of VAM estimates with schools in the middle two quartiles and bottom quartiles. Note that award winners are determined by VAM performance for Memphis and the charters, so the top quartile of the VAM performers overlaps substantially with the award winners. This is less true in DCPS, since EPIC awards there were not determined by VAM scores.

- For the charter school consortium, because the schools are located in multiple states, we compare schools by their location.

The findings from this analysis lead to the following conclusions about the baseline characteristics of schools in EPIC partner districts:

- The schools that won EPIC awards resemble non-award-winning schools in terms of many student characteristics. However, schools that won EPIC awards are more likely to score high on other measures of achievement than schools that did not win EPIC awards.

- When grouped by VAM quartile, schools appear similar in terms of school-level characteristics (enrollment, student teacher ratios, and so on).

- When grouped by VAM quartile, schools in MCS appear similar in terms of student characteristics (race, LEP, percent F/RPL, and so on); schools in the charter consortium differ on some characteristics and schools in DCPS differ on even more characteristics across VAM quartiles.

- In Memphis, the schools that are not eligible for EPIC are systematically different in measures of school and student characteristics from schools that are eligible for EPIC.

- In the charter school consortium, school and student characteristics differ substantially by location.

These findings provide a foundation for understanding the schools included in the evaluation of EPIC. They confirm that the schools that received EPIC awards performed well on other measures of school performance. For Memphis and the charter school consortium, the results suggest that differences in school VAM performance might not be driven by differences in race, income, or English proficiency (however, we cannot rule out this possibility in DCPS). Finally, the results suggest that the Memphis schools ineligible for EPIC might not be an appropriate comparison group for the evaluation of EPIC incentive awards there, although MPR staff plan to conduct additional analyses of the data before making a determination on this issue.

CHAPTER II

MEMPHIS CITY SCHOOLS BASELINE STATISTICS

New Leaders for New Schools began working with Memphis City Schools (MCS) in the summer of 2006 to establish the Effective Practice Incentive Community (EPIC) program, and piloted EPIC in Memphis during the 2007/2008 school year (Year 1). New Leaders presented the first awards in December 2007, which were based on value-added performance for the 2006/2007 school year as calculated by MPR. In this chapter, we begin with an overview of EPIC in Memphis and proposed changes for 2008/2009 (Year 2). Next, we present our findings on MCS baseline characteristics, which include information on school performance measures, as well as school, teacher, and student characteristics. We present these characteristics by eligibility status, award status, and performance in MPR's value-added model (VAM).

OVERVIEW OF EPIC IN MCS

To be eligible for an EPIC award, a school (1) must have at least 50 percent of the student body eligible for free or reduced price lunch (FRPL), (2) cannot be a charter school, and (3) cannot be participating in either the Fresh Start or Striving School programs. [11] These criteria resulted in 148 eligible and 35 ineligible schools for the 2007/2008 school year and 139 eligible and 39 ineligible schools for the 2008/2009 school year. [12]

[11] The Fresh Start and Striving School programs focus on improving student achievement in low-performing schools and include a pay-for-performance component for school staff. For more detail on these programs, see Cody et al. (2009).

[12] Since the introduction of EPIC in Memphis, there have been several changes in eligibility criteria. We recently verified schools' Year 2 eligibility status with New Leaders. The primary differences between the number of eligible/ineligible schools in Year 2 and Year 1 are due to school closings and changes in eligibility criteria. Also, since the purpose of this report is to provide baseline information on schools so as to examine the impact of being eligible for an EPIC award in 2008/2009, this chapter identifies schools' eligibility by their

(continued)

In December 2007, EPIC presented awards to 17 schools based on their value-added scores for the 2006/2007 school year, as calculated by MPR. NLNS presented 5 schools with Gold-Gain awards and 12 schools with Silver-Gain awards. The recipients of the Gold-Gain awards had the greatest value-added scores. The 12 Silver-Gain schools ranked just below the gold schools in their value-added scores. In Memphis, after a school is nominated for an award, at least 80 percent of its teachers must vote to accept the award for the school to receive it. Five of the Memphis schools offered awards in December 2007 chose to decline them. Partly in response to information obtained from this pilot year from school staff and administrators concerning the implementation of EPIC, NLNS is proposing several changes for Year 2, as explained below.

All principals, assistant principals, and instructional staff at award-winning schools receive a financial reward; however, the amount varies by position and by award status (gold or silver). In 2007 the principals and assistant principals received much larger awards than the teachers (see Table II.1). In response to feedback concerning the discrepancies in value by position, New Leaders proposes to reduce the awards to principals and assistant principals, and increase awards to instructional staff for fall 2008.

Table II.1. Memphis Award Amounts

	Gold			Silver		
Award Announcement Dates	Principals	Assistant Principals	Teachers	Principals	Assistant Principals	Teachers
Fall 2007	$15,000	$10,000	$1,000	$10,000	$7,500	$1,000
Proposed for Fall 2008	$10,000	$6,750	$2,500	$7,500	$5,000	$2,500

In addition to school-level awards, the EPIC initiative in Memphis also is designed to include "Spotlight Teacher" awards; these are to be given to a select group of teachers at award-winning schools. These teachers will be selected by NLNS site visit teams, based in part on the value-added scores of these teachers and in part on other criteria collected from their schools. Initially, New Leaders planned to award the first Spotlight Teacher awards during the 2007/2008 school year. New Leaders believes that successful implementation of the Spotlight Teacher awards—a potentially controversial component of the EPIC initiative—requires the full support and understanding of school leadership. Consequently these awards were postponed until 2008/2009, and New Leaders has asked that ED consider postponing them once more until 2009/2010.

(*continued*)
2008/2009 eligibility status. Although there are 139 eligible schools in Year 2, we have information on only 138 schools because one school opened in 2008/2009.

BASELINE CHARACTERISTICS

For the remainder of this chapter, we present baseline characteristics of MCS according to EPIC eligibility, award status, and VAM performance (whether in the top, middle two, or bottom quartiles).[13] The baseline characteristics comprise three broad categories: (1) school performance measures, (2) school characteristics, and (3) student characteristics.

Data on school performance and school characteristics were obtained from publicly available data at the school level. We were successful in obtaining complete information on almost all schools; however, for a few variables, we were missing data for a small proportion of schools. To estimate student characteristics, we created a data set of student-level data for each school for those students who were included in the VAM data set.

The following characteristics were measured:

- ***School Performance Measures.*** Percentage of schools passing adequate yearly progress (AYP); percentage of schools identified as being in need of improvement, or SINI (NCLB classifies schools that fail AYP in consecutive years and subsequently have not passed AYP for two consecutive years as "schools in need of improvement"); percentage of students proficient in English/Language Arts (ELA); percentage proficient in math; and the school's promotion rate. These data are all for the 2006-2007 school year.

- ***School Characteristics.*** Enrollment, student/teacher ratio, staff size, teacher ethnicity, and percentage of teachers with a Masters or PhD. For the breakdown by eligibility status, we also include school level (elementary, middle, and high schools). These data are from the most recent year of data we could get from the Common Core of Data (2005-2006).

- ***Student Characteristics.*** Student ethnicity, percentage of students eligible for FRPL, percentage of LEP students, and percentage of special education students. These data are used to estimate our VAM scores and are for the 2006-2007 school year.

Baseline Characteristics by EPIC Eligibility Status

As explained in the design report (Cody et al. 2009), we hope to estimate the incentive impact of EPIC awards by comparing student achievement growth between schools eligible and those ineligible for an award. All else being equal, eligibility for an EPIC award can provide additional motivation for school staff to increase student achievement. If so, we would expect the growth in student test scores to be greater for EPIC-eligible schools than for the ineligible schools.

[13] VAM performance was measured for the 2006-2007 school year. See Booker and Isenberg (2008) for details.

EPIC-Eligible Versus EPIC-Ineligible Schools

Table II.2 compares baseline characteristics between the 138 EPIC-eligible schools and the 39 EPIC-ineligible schools. Eligible and ineligible schools are meaningfully and significantly different on many of our measured characteristics. First, the distribution of schools by school level is quite different for eligible versus ineligible schools. More than 70 percent of eligible schools are elementary schools, while less than 20 percent of ineligible schools are elementary.[14] Schools also significantly differ by school performance measures, with eligible schools performing better on average. For instance, 80 percent of eligible schools passed AYP, yet less than 60 percent of ineligible schools passed AYP. Similarly, a much higher percentage of ineligible schools are "in need of improvement" (69 percent) compared to eligible schools (15 percent).

Eligible and ineligible schools also significantly differ by several school and student characteristics. Ineligible schools average almost 9 percent higher enrollment (720 students versus 661) and have a higher student/teacher ratio. Eligible schools, on average, have a significantly higher percentage of black students than ineligible (92 versus 85 percent) and a higher percentage of students eligible for FRPL (86 percent compared to 72 percent). In terms of teacher characteristics, we find no significant difference between eligible and ineligible schools.

In the next section, we separate ineligible schools by reason of ineligibility to examine whether there might be a subset of these schools more comparable to our eligible schools.

EPIC-Eligible versus EPIC-Ineligible Schools by Reason of Ineligibility

A school may be ineligible for an EPIC award for several reasons. We can separate EPIC-ineligible schools into six categories: (1) alternative schools, (2) high-income schools, (3) charter schools, (4) "special" schools,[15] (5) Fresh Start schools, and (6) Striving schools.[16]

[14] Since the distribution by school level differed dramatically between eligible and ineligible schools, we also examined baseline characteristics excluding elementary schools. However, we found very similar results both in the magnitude of the differences and the significance.

[15] At this time, we do not have specific information on what determines a school being categorized as "alternative" or "special."

[16] Each school was assigned to only one category, although a few schools qualified for more than one classification. For instance, several schools are both Fresh Start and Striving schools. Since Fresh Start schools were ineligible in Year 1 and Striving schools became ineligible only in Year 2, if a school fell into both categories, it was classified as a Fresh Start school. Also, schools were classified as ineligible because they were high income only if they were not ineligible for any other reason.

Table II.2. Baseline Statistics by EPIC Eligibility, Memphis City Schools

Category	Eligible	Ineligible
School Level (%)		
Elementary schools	71.7	18.4***
Middle schools	15.9	36.8***
High schools	12.3	44.7***
School Performance		
AYP pass (%)	80.3	57.1***
SINI (%)	15.4	69.2***
Promotion rate	93.1	90.3
School Characteristics		
Enrollment	660.7	719.5
Student-teacher ratio	17.0	19.4***
Staff size	37.7	39.9
Teacher ethnicity (%)		
White	31.3	33.5
Black	66.9	64.9
Hispanic	0.4	0.6
Master's or Ph.D. (%)	60.6	63.2
Student Characteristics (%)		
Ethnicity		
Black	92.0	85.1**
Hispanic	4.0	2.9
FRPL	86.1	71.8***
LEP	3.2	1.6
Special education	11.0	10.3
Number of Schools	**138**	**39**

*Significantly different from the eligible schools' value at the 10% level.
**Significantly different from the eligible schools' value at the 5% level.
***Significantly different from the eligible schools' value at the 1% level.

Notes: Only Memphis schools eligible for an EPIC award in 2008-2009 are included in these statistics.

School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year).

As indicated in Table II.3, the characteristics of ineligible schools vary among these six ineligibility classifications. The alternative schools are either middle or high schools in need of improvement and have the highest percentage of special education students, at almost 23 percent. The next highest, Fresh Start schools, have an average of less than 16 percent special education students. The 10 high-income schools not only have the lowest percentage of students eligible for FRPL (as expected by the category's definition) but also the highest percentage of students who are proficient in ELA and math. Charter schools have relatively low enrollment, a high percentage of teachers with a master's degree or a Ph.D., and a low percentage of special education students. The three special schools are all high schools; they have relatively small enrollments and the lowest percentage of special education students. Both Fresh Start and Striving schools stand out in terms of doing poorly on the performance measures.

Comparing each of these ineligibility categories with eligible schools, we continue to see significant and meaningful differences. For all categories, the distribution by school level continues to be significantly different than eligible schools. Except for charter and special schools, for which we lack proficiency information, each category of ineligible schools is significantly different from eligible schools on performance measures. High-income schools perform significantly better, while alternative, Fresh Start, and Striving schools perform significantly worse.[17] High-income schools are significantly different and are the least similar to ineligible schools in terms of teacher characteristics, percentage of students who are black, and percentage of students eligible for FRPL. Charter schools are significantly different on school characteristics (both size and teacher characteristics), as well as the percentage of students eligible for FRPL and the percentage of special education students.

Fresh Start and Striving schools are the most similar to eligible schools on some characteristics, yet are significantly different in a number of other ways (in addition to the performance measures). Fresh Start schools are the most similar in terms of school size and also are similar in terms of teacher ethnicity. However, Fresh Start schools have a significantly lower percentage of teachers with a master's degree or a Ph.D. (47 percent) than eligible schools (61 percent). Striving schools are the most similar and are not statistically different from eligible schools in terms of teacher and student characteristics.

Baseline Characteristics by Award Status

Table II.4 shows the baseline characteristics for the 138 EPIC-eligible schools by award status—award recipients, non-award schools, and award decliners. Twelve elementary, three middle, and two high schools received awards. Three elementary and two high schools declined an award offer. Since one award recipient and one declining school became ineligible in Year 2, the table includes only 16 award recipients and 4 declining schools.

[17] The Fresh Start and Striving programs target the lowest performing schools, so we would expect to find this reflected in our baseline performance characteristics.

Table II.3. Baseline Statistics for Eligible vs. Ineligible Schools by Detailed Categories, Memphis City Schools

Category	Eligible Schools	Alternative	High Income	Special	Charter	Fresh Start	Striving
School Level (%)							
Elementary schools	71.7	0.0***	40.0**	0.0***	25.0***	0.0***	11.1***
Middle schools	15.9	33.3	30.0	0.0	50.0**	80.0***	22.2
High schools	12.3	66.7**	30.0	100.0***	25.0	20.0	66.7***
School Performance							
AYP pass (%)	80.3	0.0***	80.0	n.a.	100.0	20.0***	55.6*
SINI (%)	15.4	100.0***	22.2	n.a.	0.0	100.0***	100.0***
Student proficiency (%)							
ELA proficient	83.7	71.0***	95.0***	n.a.	n.a.	75.2***	82.8
Math proficient	80.6	44.3***	89.2***	n.a.	n.a.	69.4***	67.7***
Promotion rate	93.1	92.0	95.9	99.5	97.5	88.8	78.2***
School Characteristics							
Enrollment	660.7	193.5*	1,120.7***	141.7**	183.0***	773.8	1,029.9***
Student-teacher ratio	17.0	10.5*	18.7	14.6	25.7***	18.2	19.2
Staff size	37.7	16.5*	58.1***	11.7**	9.3***	42.8	53.2***
Teacher ethnicity (%)							
White	31.3	25.5	63.4***	11.4*	10.6**	21.0	28.9
Black	66.9	74.5	33.8***	83.6	89.2***	78.4	70.0
Hispanic	0.4	0.0	1.6***	0.0	0.0	0.2	0.2
Master's or Ph.D. (%)	60.6	69.0	66.1	70.7	78.3***	46.9**	56.7
Student Characteristics (%)							
Ethnicity							
Black	92.0	99.4	52.4***	99.0	98.1	98.2	91.4
Hispanic	4.0	0.5	4.2	1.0	1.7	1.6	4.8
FRPL	86.1	88.9	33.9***	71.0**	78.2**	93.1	89.0
LEP	3.2	0.0	2.5	0.0	1.0	0.4	3.1
Special education	11.0	22.6***	7.2***	3.4***	6.8***	15.6**	10.7
Number of Schools	**138**	**4**	**10**	**3**	**8**	**5**	**9**

*Significantly different from eligible schools at the 10% level.
**Significantly different from eligible schools at the 5% level.
***Significantly different from eligible schools at the 1% level.

Notes: Based on Year 2 EPIC eligibility status.
School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM model (2006-2007 school year).

n.a. = not applicable.

Table II.4. Baseline Statistics by Award Status, Memphis City Schools

Category	Award Recipients	Non-Award Schools	Declined Award
School Performance			
AYP pass (%)	93.8	78.0	100.0
SINI (%)	6.3	16.2	33.3
Student proficiency (%)			
ELA proficient	86.2*	83.3	87.3
Math proficient	85.7**	79.8	84.5
Promotion rate	94.5	92.9	92.3
School Characteristics			
Enrollment	580.8	671.9	649.8
Student-teacher ratio	16.2	17.1	17.7
Staff size	34.0	38.3	35.4
Teacher ethnicity (%)			
White	28.5	31.7	32.0
Black	70.1	66.6	64.5
Hispanic	0.1	0.4	1.6*
Master's or Ph.D. (%)	65.3	60.1	54.2
Student Characteristics (%)			
Ethnicity			
Black	92.8	91.8	93.8
Hispanic	3.9	4.0	3.9
FRPL	86.7	85.8	90.2
LEP	3.2	3.2	3.0
Special education	10.9	10.9	13.1
Number of Schools	**16**	**118**	**4**

*Significantly different from non-award schools at the 10% level.
**Significantly different from non-award schools at the 5% level.
***Significantly different from non-award schools at the 1% level.

Notes: Only Memphis schools eligible for an EPIC award in 2008-2009 are included in these statistics.

School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM model (2006-2007 school year).

- ***Performance Characteristics.*** As might be expected, award-winning schools tend to perform better on school performance characteristics than non-award schools, although the differences are not large. For example, 86 percent of the award winners' students are proficient in both ELA and math, compared to 83 percent and 80 percent, respectively, for the non-award winners.[18] Although none of the other performance measures are significantly different, both the award winners and decliners tend to perform better than non-award schools.[19]

- ***School and Student Characteristics.*** We examined 12 non-performance characteristics and made two comparisons for each (award winners vs. non-award winners and decliners vs. non-award winners). Only one of these 24 comparisons is statistically significant at the 10 percent level (decliners vs. non-award winners on percentage of Hispanic staff). This suggests that there are not clear differences in these other characteristics by award status.

Overall, only two of the 17 comparisons between award recipients and non-award schools are significantly different, and those characteristics relate to school performance. Only one comparison between the declining and non-award schools is statistically different. Furthermore, many of the mean characteristics are very similar in magnitude across the three categories, and typically there is no consistent pattern by award status.

Baseline Characteristics by VAM Quartile Scores

Table II.5 compares characteristics between schools based on their performance in MPR's value-added model (VAM). To create these categories, schools first were ranked into quartiles by school level. The middle two quartiles were combined. Therefore, the top and bottom quartile categories based on Year 1 eligibility consisted of 25 elementary, 6 middle, and 5 high schools, while the middle category included 51 elementary, 12 middle, and 10 high schools. However, Table II.5 includes only schools that are EPIC-eligible in Year 2; since some schools that were EPIC-eligible in Year 1 no longer are eligible in Year 2, the statistics are based on fewer schools than in the original quartiles.[20] All significance tests are in relation to the "middle quartiles" category.

- ***Performance Characteristics.*** Schools in the bottom quartile perform worse than those in the middle quartiles on three of the five performance measures considered (AYP, percentage proficient in ELA, and percentage proficient in math). Also, schools in the top quartile perform significantly better than schools in the middle quartiles on math proficiency (85 percent versus 81 percent).

[18] There were very few decliners, which may explain why the differences between the decliners and non-award winners were not statistically significant.

[19] One notable exception is that decliners have a higher percentage SINI (1 out of 3 with data) compared to the non-award winners, yet again the difference is not statistically significant.

[20] See Appendix Tables A.4-A.6 for the breakdown of the number of schools included in the VAM comparisons by school level.

None of the other performance differences is statistically significant but, in almost all cases, schools in the top quartile perform better than schools in the middle quartiles and those in the middle perform better than schools in the lowest quartile. The percentage of schools passing AYP differs quite a bit across quartiles: 91 percent for the top quartile, 83 percent for the middle quartiles, and only 65 percent for the bottom quartile. Since both a school's AYP status and its performance in the VAM model capture information on student performance, we could expect to see this type of relationship. In terms of percent proficient, the top and middle quartiles are similar—on average, 81-86 percent of their students are proficient. However, the bottom quartile schools average less than 80 percent proficient, and both measures are significantly different than the middle quartiles.

Table II.5. Baseline Statistics by VAM Quartile Scores, Memphis City Schools

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance			
AYP pass (%)	91.2	82.6	64.7**
SINI (%)	9.1	15.9	20.6
Student proficiency (%)			
ELA proficient	86.4	84.5	79.4***
Math proficient	85.4**	81.2	74.3***
Promotion rate	94.7	92.5	92.5
School Characteristics			
Enrollment	639.1	685.5	632.5
Student-teacher ratio	17.0	17.1	16.8
Staff size	36.3	39.1	36.3
Teacher ethnicity (%)			
White	31.4	32.0	29.9
Black	67.2	65.8	68.8
Hispanic	0.3	0.5	0.6
Master's or Ph.D. (%)	62.6	59.7	60.2
Student Characteristics (%)			
Ethnicity			
Black	93.6	90.2	93.9
Hispanic	3.6	4.6	3.2*
FRPL	85.4	84.9	89.1
LEP	2.9	3.5	2.7
Special education	11.0	10.9	11.2
Number of Schools	**35**	**69**	**34**

*Significantly different from middle quartile schools at the 10% level.
**Significantly different from quartile schools at the 5% level.
***Significantly different from middle quartile schools at the 1% level.

Notes: Only Memphis schools eligible for an EPIC award in 2008-2009 are included in these statistics.

School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

- ***School Characteristics***. School characteristics are very similar across all quartiles, and none is significantly different. Enrollment ranges, on average, from 633 students for the bottom quartile to 686 students for the middle quartiles; the student/teacher ratio is nearly identical at about 17 students per teacher; the percentage of white teachers is ranges from 30 to 32 percent; and the percentage of teachers with a Masters or PhD ranges from 60 to 63 percent.

- ***Student Characteristics.*** Student characteristics are also similar across quartiles. For instance, the percentage of LEP is less than 4 percent for all quartiles, and the percentage of special education students is approximately 11 percent for all quartiles. The only significant difference is the percentage of students eligible for FRPL for the bottom quartile, and even that difference is not large (89 percent for the bottom quartile, compared to 85 percent for the middle quartiles).

Appendix tables A.4-A.6 show these comparisons by VAM quartiles separately by school level (elementary, middle and high school). Those tables show similar findings to those in Table II.5, with a few exceptions. In general, differences in performance measures often become larger (and significant) when we compare VAM quartiles separately by school level.

CONCLUSION

This chapter compares baseline performance, school, and student characteristics by award status, VAM performance, and eligibility status. We find similar results when we compare schools by award status and VAM performance. Award-winning schools and schools that perform well in terms of the VAM model (clearly related, but not an identical groups of schools), tend to perform better on school performance measures than comparison schools, as we would expect. However, we find that schools are fairly similar in terms of school and student characteristics, and often are not statistically different when we compare these characteristics by award or VAM performance categories. In terms of EPIC, there are no obvious correlations between school or student characteristics and which schools tend to do well in MPR's value-added model, and so are more likely to win an award.

However, our comparisons between EPIC-eligible and EPIC-ineligible schools show numerous differences on baseline characteristics, and how the schools differ depends on the reason for their ineligibility. This suggests that we will need to proceed with caution when using this comparison group to estimate impacts of EPIC, and that a subset of ineligible schools may be more appropriate to use for a comparison group.

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CHAPTER III

CHARTER SCHOOLS BASELINE STATISTICS

In 2007, NLNS piloted the EPIC program with participation from charter schools in 18 states and the District of Columbia.[21] These schools were recruited into the EPIC program as early as 2006 by NLNS with help from the New Schools Venture Fund, a philanthropic nonprofit entity that invests in education endeavors, particularly charter schools. We begin this chapter with an overview of EPIC in charter schools, including eligibility requirements, Year 1 performance awards, and proposed changes for 2008-2009. Next, we discuss plans to evaluate the impact of EPIC incentives on charter school student outcomes. Finally, we present our findings on charter school baseline (Year 1) characteristics, including information on school performance measures, as well as school, teacher, and student characteristics. We present these characteristics by award status, VAM performance, and school location.

OVERVIEW OF EPIC IN CHARTER SCHOOLS

To be eligible for an EPIC award, at least 30 percent of a charter school's student body must be eligible for free and reduced price lunch (FRPL), sign a Memorandum of Understanding (MOU) with NLNS, and provide MPR with the student test scores and demographic data needed to estimate a value-added model. Although more than 130 charter schools expressed interest in EPIC in Year 1, only 97 schools completed the necessary steps.[22]

NLNS announced the first awards for charter schools in March 2008. Schools were chosen for awards based on value-added measures of their performance during the 2006-2007 school year, as calculated by MPR (Booker et al. 2008). The award-winning charter

[21] States that participated in Year 1 of the EPIC program were: AZ, CA, CO, DC, FL, IL, IN, MA, MD, MI, MO, NC, NM, NY, OH, PA, TN, TX, and WI.

[22] Two schools were close to being eligible but did not provide data on enough students to qualify.

schools were from nine states and the District of Columbia.[23] Schools with the highest value-added scores in their school-level (elementary, middle, or high) received Gold-Gain awards, and the schools in the next tier of value-added scores received Silver-Gain awards. Schools that serve multiple grade levels (e.g., both elementary and middle) were eligible for awards in all grade levels but could receive only one award. NLNS granted seven Gold-Gain awards, which included three elementary schools, three middle schools and one high school. Gold-gain principals were awarded $20,000, assistant principals were awarded $15,000, and all instructional staff were awarded $1,500. Fifteen schools (six elementary, six middle schools, and three high schools) received Silver-Gain awards of $15,000, $10,000, and $750 for each staff designation, respectively. In the spring of 2008, NLNS visited Gold-Gain charter schools to identify promising practices and gauge educators' reaction to EPIC.

NLNS is in the process of recruiting additional charter schools to be eligible for awards in 2008-2009. The second round of awards will be given out for both school and individual teacher performance. Teachers in award-winning schools with the highest teacher-level value-added scores (called "Spotlight Teachers") each will earn an additional $10,000 award. To be eligible for participation in Year 2, schools must submit both student-level test scores and demographic data (as was required in Year 1) and student-teacher linking data to aid in the identification of Spotlight Teachers. It is unclear at this time how many additional schools may be added to the 97-school consortium. Also, it appears that some of the original 97 schools may choose not to participate.

EVALUATION OF EPIC IN CHARTER SCHOOLS

New Leaders has asked MPR to investigate the possibility of evaluating the impact of EPIC incentives on student outcomes in charter schools as we are doing in Memphis. To do so, we propose to estimate a difference-in-differences model to compare the gains in students' scores between schools that participate in the EPIC program (the "treatment" schools) to gains of schools that do not participate (the "comparison" schools).[24] If participating schools have a greater incentive to improve students' scores because of the potential for an award, we would expect the gain in scores from these schools to be greater than the gain in students' scores from non-participating schools, when all else is equal.

[23] Because the VAM includes test scores for multiple grades, subjects, and years, as well as scores for different states that administer different exams, the scores must be standardized so that they fit comparable scales. MPR transforms the test scores by subtracting from each student's score the statewide mean for that subject, grade, and year, and dividing by the statewide standard deviation for the same variables. This yields a standardized score that equates each student to the average student in the state, and is comparable across schools within each state. To allow comparison of test scores across different states, MPR adjusts student scores using state average scores and standard deviations from the National Assessment of Educational Progress (NAEP).

[24] Although in theory all charter schools serving at least 30 percent FRPL students are eligible to participate in EPIC, only those that submit data and sign an MOU are eligible for awards.

Although the methodology is straightforward, we now have value-added data only for the participant charter schools. Data thus are needed from non-participant schools to create a comparison group. We are in the process of requesting data for this from several states and districts. Additionally, the research design assumes that the staff at charter schools that participated in Year 1 know about the EPIC incentives. Feedback from New Leaders, however, suggests that some principals may have informed staff about the EPIC incentives only if the school received an award. We plan to conduct a teacher survey in the spring of 2009 that will ask about awareness of EPIC, thus providing information on whether or not an evaluation of EPIC in charter schools is feasible.

BASELINE CHARACTERISTICS OF YEAR 1 EPIC PARTICIPANTS

This section presents a comparison of student and school baseline characteristics in charter schools that were eligible for EPIC awards in Year 1. The characteristics fall into three broad categories: (1) school performance measures, (2) school characteristics, and (3) student characteristics.

Data on school performance and school characteristics were obtained from publicly available data at the school level. We were successful in obtaining complete information on all schools in CA, IL, and DC; however, for a few variables we were missing data for several schools in other states. To estimate student characteristics, we created a school-level data set based on student-level data for students at the school who were included in the VAM data set.

The characteristics measured are:

- ***School Performance Measures.*** Percentage of schools passing AYP, percentage of schools identified as in need of improvement ("SINI"). These data are from the 2006-2007 school year when possible and from 2005-2006 otherwise.

- ***School Characteristics.*** Enrollment, student/teacher ratio, staff size, years operating. These data are from the 2006-2007 school year when possible and from 2005-2006 otherwise.

- ***Student Characteristics.*** Student ethnicity, percentage of students eligible for FRPL, percentage of students who are limited English proficient (LEP), and percentage of students identified as in special education. These data are based on the students used to calculate the VAM scores and are for the 2006-2007 school year.

We use these comparisons to determine if schools systematically differed by (1) whether or not they won an EPIC award, (2) performance in the value-added model,[25] and

[25] VAM performance was measured for the 2006-2007 school year. See Isenberg, Booker, and Chaplin (2008) for details.

(3) location.[26] In general, we find that schools that did well in Year 1 (1) had lower student enrollment, (2) served more FRPL eligible students, and (3) served more students identified as special education than schools that did not do well. Otherwise, participating charter schools look very similar across VAM quartiles and award status. Most variation in school and student characteristics occurs across school location.

Baseline Characteristics by Award Status

Table III.1 shows the baseline characteristics for the 97 charter schools by Year 1 award status—award winners vs. those that did not win an award.

- ***Performance and School Characteristics.*** Charter schools that won awards and those that did not are very similar in terms of performance and school characteristics. The majority of schools made Adequate Yearly Progress (AYP) in the previous year, and approximately one-third of schools have been designated "in need of improvement" (SINI status) under NCLB for failing AYP in two consecutive years. Ninety-six percent of all schools have been operating for at least three years, which some literature identifies as a turning point for charter success. Only student enrollment significantly differs across award winners and non-award schools. Non-award winning schools are 51 percent larger than award winners, serving 456 versus 302 students on average.

- ***Student Characteristics.*** Of the five comparisons made between students at award winning and non-award winning schools, two are significantly different. At award winning schools, 75 percent of students are eligible for free and reduced price lunch and 16 percent are identified as special education, compared to just 63 percent and 9 percent, respectively at schools that did not win awards. These findings suggest that award winning schools serve more at-risk students than do non-award winners. On the other hand, the racial and ethnic composition of both groups is similar. On average, at both award winning and non-award winning schools, approximately half of the students are black and one-quarter are Hispanic.

Overall, award winning and non-award winning charter schools are similar in AYP performance, the size of the teaching staff, years operating, and student ethnicity. Award recipients are significantly smaller in size, a school characteristic that some literature has suggested is correlated with school performance. Significant differences in student characteristics are limited to FRPL eligibility and special education status, both significant at the .05 level.

[26] Once a comparison group is identified, baseline characteristics of participating charter schools will be compared to those of non-participating charter schools.

Table III.1. Baseline Statistics by Award Status, Charter Schools

Category	Award Recipients	Non-Award Schools
School Performance (%)		
AYP pass	65.0	52.1
SINI	30.0	38.0
School Characteristics		
Enrollment	301.7	456.2**
Student-teacher ratio	16.2	17.4
Staff size	24.1	28.2
Years operating		
2 years or fewer	0.0	5.4
3-5 years	36.4	35.1
6 years or more	63.6	59.5
Student Characteristics (%)		
Ethnicity		
Black	49.7	50.4
Hispanic	27.4	24.7
FRPL	74.8	63.1**
LEP	10.0	6.1
Special education	15.5	9.2**
Number of Schools	**22**	**75**

*Significantly different from the award recipients at the 10% level.
**Significantly different from award recipients at the 5% level.
***Significantly different from the award recipients at the 1% level.

Note: School performance measures and characteristics were obtained from publicly available data—2006-2007 when possible and 2005-2006 otherwise. Student characteristics were averaged across all students in the VAM (2006-2007 school year).

Baseline Characteristics by VAM Quartile Scores

Table III.2 compares characteristics between schools based on their performance in MPR's value-added model (VAM). To create these categories, schools first were ranked into quartiles by school level.[27] Next, the middle two quartiles were combined. When the school-level rankings are aggregated, the top and bottom quartile categories consist of 23 schools each, while the middle category has 51 schools. This breakdown of school and student characteristics enables us to examine how schools in the top quartile (which includes only one non-award winning school) differ from schools that rank in the middle two quartiles and

[27] Elementary schools serve grades 2 through 6 (or any subset of those grades), middle schools serve grades 7 and 8, and high schools serve 9th grade and above. Although charter schools serving multiple school levels are eligible for multiple award pools, schools were assigned to their highest school level to make these baseline comparisons. Schools that won an award at other than their highest level served were assigned to the award-winning school level.

those that rank in the bottom quartile. All statistical tests are conducted between the top or bottom VAM quartile and the middle two quartiles.

Table III.2. Baseline Statistics by VAM Quartile Scores, Charter Schools

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance (%)			
AYP pass	68.2	57.1	35.0
SINI	36.4	34.7	40.0
School Characteristics			
Enrollment	312.9	429.3	511.3
Student-teacher ratio	16.8	16.7	18.2
Staff size	23.5	27.1	31.3
Years operating			
2 years or fewer	4.3	3.9	4.5
3-5 years	34.8	35.3	36.4
6 years or more	60.9	60.8	59.1
Student Characteristics (%)			
Ethnicity			
Black	51.2	48.8	52.4
Hispanic	32.0	24.5	20.5
FRPL	74.9*	63.9	60.4
LEP	10.7	6.6	4.1
Special education	14.6*	9.4	9.4
Number of Schools	**23**	**51**	**23**

*Significantly different from middle quartile schools at the 10% level.
**Significantly different from middle quartile schools at the 5% level.
***Significantly different from middle quartile schools at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data--2006-2007 when possible and 2005-2006 otherwise. Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

- ***Performance Characteristics.*** Neither of the performance measures (AYP or SINI) differs significantly by VAM status, although AYP performance ranges from a pass rate of 68 percent for top quartile schools to 35 percent for bottom quartile schools. SINI status varies very little across quartiles, suggesting that some top quartile SINI schools may be making progress towards moving from a status of "in need of improvement" to "good standing."

- ***School Characteristics.*** Of the 12 comparisons made across school characteristics, no differences are statistically significant. However, top quartile schools serve fewer students and have somewhat fewer teachers. Enrollment ranges, on average, from 511 students for the bottom quartile to 313 students

for the top quartile, and the size of the teaching staff ranges from 31 teachers for bottom quartile schools to 24 for those in the top.

- ***Student Characteristics.*** Of the 10 comparisons made across student characteristics, only two are statistically significant at the 10 percent level. This result might be due to chance. Schools in the top quartile serve significantly more FRPL eligible students and students identified as in special education than do schools in the middle two quartiles (75 vs. 64 percent and 15 vs. nine percent, respectively).

In the Appendix, Tables A.7-A.9 show these comparisons by VAM quartiles separately for elementary, middle, and high schools. When we disaggregate these results by school level, the differences between the top quartile schools and the middle two quartiles are seldom statistically significant. There are 13 comparisons for each school type, for a total of 39 comparisons. Only three of these are statistically significant at the 10 percent level, a result that easily could be due to chance. A comparison of the bottom quartile with the middle two quartiles yields similar results for middle and high schools—26 comparisons, with only two statistically significant at the 10 percent level. The picture looks somewhat different for elementary schools. There, the bottom quartile does seem to stand out, as only 4 of the 13 comparisons are statistically significant. Bottom quartile elementary schools serve significantly more students and have more teachers and a higher student/teacher ratio than do schools in the middle two quartiles. They also serve a higher percentage of black students than do middle quartile schools (85 percent compared to 55 percent, on average).[28]

As expected, the comparison of top to middle quartile schools closely mirrors the comparison of award winners to schools that did not win an award. In particular the top quartile stands out in terms of the fraction of students eligible for FRPL and the fraction with special education status, compared to the middle quartiles of schools. Although the bottom quartile significantly differs from the middle two quartiles on both school and student characteristics, it does so only by school-level, and mostly for elementary schools.

Baseline Characteristics by Location

Table III.3 compares characteristics between schools based on their location. We chose to compare schools across location, since education policies, testing instruments, and general education environments vary by state. Schools in CA, IL, DC, and FL were separated from those elsewhere because these states are disproportionately represented in the sample of eligible EPIC schools. Statistical comparisons were made relative to all other states, which include AZ, CO, IN, MA, MD, MI, MO, NC, NM, NY, OH, PA, TN, TX, and WI.

[28] These results should be interpreted cautiously, as it is possible that some schools reported the total number of teachers, whereas others reported only full-time teachers.

Table III.3. Baseline Statistics by Location, Charter Schools

Category	Other Locations	CA	IL	DC	FL
School Performance (%)					
AYP pass	70.0	86.7	43.8*	14.3***	43.8*
SINI	26.7	6.7	68.8***	71.4***	18.8
School Characteristics					
Enrollment	392.1	253.8	514.7	464.9	511.5
Student-teacher ratio	15.3	20.9***	15.0	18.6*	18.6*
Staff size	25.0	12.5***	35.5**	38.6***	28.9
Years operating					
2 years or fewer	5.6	0.0	6.3	0.0	6.3
3-5 years	30.6	57.1*	37.5	35.7	25.0
6 years or more	63.9	42.9	56.3	64.3	68.8
Student Characteristics (%)					
Ethnicity					
Black	48.9	30.4*	70.7**	84.8***	20.9***
Hispanic	19.8	58.9***	22.3	11.9	20.9
FRPL	69.0	73.0	83.4*	71.0	38.3***
LEP	4.7	15.4***	3.5	7.5	7.2
Special education	10.3	7.3	14.7	11.5	9.6
Number of Schools	**36**	**15**	**16**	**14**	**16**

*Significantly different from middle quartile schools at the 10% level.
**Significantly different from middle quartile schools at the 5% level.
***Significantly different from middle quartile schools at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data--2006-2007 when possible and 2005-2006 otherwise. Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

- ***School Performance.*** In terms of NCLB performance measures, the majority of participating charter schools in CA and other states made AYP in the previous year. In contrast, schools in DC are less likely than those in any other state to have made AYP—14 percent of DC schools pass, compared to the next lowest pass rate of 44 percent for both IL and FL (p=.01). State SINIdesignations follow a similar pattern. Whereas less than 20 percent of the schools in CA and FL are designated SINI, 71 percent of DC schools and 69 percent of IL schools are classified as such. Overall, CA performs the best on both NCLB performance measures while DC performs the worst.

- ***School Characteristics.*** The most significant variations in school characteristics across location are in the total number of teachers and student/teacher ratios. Teaching staff range in size from an average of 13 teachers per school in CA to 39 teachers per school in DC. These values and

those of IL are significantly different than other states. Similarly, CA, DC, and FL have significantly higher student/teacher ratios than other states, on average.

- ***Student Characteristics.*** Schools in CA, IL, DC, and FL significantly differ from schools in other states on several student characteristics. In particular, there is wide variation in student ethnicity. On average, the proportion of black students served by CA, IL, DC, and FL schools significantly differ from the proportion served by other states. DC schools have the highest percentage of black students (85 percent), while FL schools have the lowest (21 percent). Half of the students in other states are black. Not surprisingly, CA has the largest proportion of Hispanic students (59 percent) and those with LEP (15 percent). FRPL eligibility also differs somewhat across location. In all states except for FL, a majority of students qualified for FRPL—at 38 percent, FL is significantly different than other states, where 60 percent of students qualify for this program.[29] Interestingly, although the proportion of students identified as special education significantly differs across award status and VAM quartiles, it does not significantly differ across location. Special education populations range from a high of 15 percent of students in IL schools to a low of 7 percent of students served by schools in CA.

CONCLUSION

This chapter compares baseline performance, school, and student characteristics by award status, VAM performance, and school location for charter schools participating in EPIC. The baseline data show charter school award winners and top quartile schools to be very similar to poorer performing schools in terms of NCLB performance and other school characteristics. The only student characteristics that significantly differ across award status and VAM quartile are FRPL eligibility and special education status—schools that performed well in Year 1 served higher proportions of both types of students, on average. A number of pronounced differences in school and student characteristics were found by location.

[29] Although IL had the highest percent FRPL and was significantly different than other states (p=.01), seven schools in IL are missing FRPL data, which suggests that the results should be interpreted cautiously.

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CHAPTER IV

DC PUBLIC SCHOOLS BASELINE STATISTICS

We begin this chapter with an overview of Together Everyone Achieves More (TEAM) in the District of Columbia, including its relationship to EPIC Year 1 and Year 2 performance awards, and possible future changes to the program. Next, we discuss our plans for evaluating TEAM in DC. Finally, we present our findings on DC baseline (Year 1) characteristics, which include information on school performance measures, as well as school and student characteristics. We compare these characteristics by Year 1 award status to determine whether schools that won awards varied systematically at baseline from those that did not. Although school awards in Years 1 and 2 were not based on a VAM in DC, we also attempt to detect any variation in characteristics across VAM quartiles, given that DC plans to switch to a value-added model similar to the one currently used in Memphis and charter schools in 2009.

OVERVIEW OF TEAM IN DC

Beginning in 2007, all traditional public schools in the District of Columbia Public Schools (DCPS) system were eligible for TEAM awards.[30] In December 2007, Mayor Adrian Fenty and Schools Chancellor Michelle Rhee presented the first set of awards to three elementary schools. Unlike the Memphis and charter sites, which distributed awards based on performance in the VAM, DC linked awards to increases in proficiency rates between the 2005/2006 and the 2006/2007 school years. Each of the award winning schools experienced more than a 20-percentage point gain in students attaining proficiency in both math and English Language Arts. In September 2008, the second round of awards went to six DC schools, again based on proficiency rate gains. Three award winners were elementary schools, one was a middle school, one was a high school and one served ungraded students.

[30] In DC, the awards are referred to as TEAM awards instead of EPIC awards, which is the term used for Memphis and Charter schools. Public charter schools were not eligible for a TEAM award, although some competed in the EPIC charter school consortium.

These schools increased the percentage of students who were proficient in reading by between 20 and 48 percentage points between the 2006/2007 and 2007/2008 school years. They showed equally striking improvements in math proficiency.[31]

The distribution and magnitude of the TEAM awards in DC differed from those of the EPIC awards in Memphis and charter schools. First, DC distributed awards to non-instructional staff, including guidance counselors ($4,000) and support staff ($2,000). Second, only Gold-Gain awards were made in DC; no schools received Silver-Gain awards. Finally, while the principal and assistant principal awards ($10,000 and $9,000, respectively) were similar to those in Memphis, teachers at the award-winning DC schools each received $8,000, compared with $1,500 per teacher at Gold-Gain Memphis and charter schools in the 2007-2008 school year.

Some aspects of the TEAM program are likely to change in the future. First, DC plans to begin using a VAM to evaluate schools that is similar to the one currently used in Memphis and the charters. Second, staff at the DC central office have informed MPR that they are in the process of closing or restructuring many of their "alternative schools," including schools housed within correctional facilities, family centers, and special education schools. Thus, for the purpose of describing baseline schools and evaluating TEAM/EPIC in the future, DCPS has requested that we focus only on traditional public schools.[32]

EVALUATION OF TEAM IN DC SCHOOLS

To estimate the impact of incentives on student outcomes in DC, we must compare outcomes from eligible and ineligible schools. Because all traditional public schools were eligible for awards in DC, there was no relevant comparison group of nonparticipants. The only exception was the charter school consortium, which is a poor comparison group. Potentially large differences between the charter and non-charter schools at baseline were compounded by some DC charter schools' eligibility for the EPIC charter program and the fact that DCPS had a new chancellor (Michelle Rhee), who could affect results for the regular public schools, compared to the charters during this period. As a result, we do not plan to look for causal links between the TEAM program and student outcomes in DC.

Although we currently cannot directly estimate the impact of incentives on student outcomes in DC, we can, in future reports, offer insight into whether the incentives drive teachers to attempt to improve their practices. For incentives to have an impact, educators must be aware that they exist, want to improve their own performance because of the incentives, and believe that they can do so. Using information from the spring 2008 principal

[31] This baseline report examines only the schools that won awards in the first year because data for the second year is not yet available.

[32] This report is based on MPR's understanding as of 10/1/2008 of which schools were "traditional" schools in the fall of 2008. We have since been told that the following schools should also be included in our analyses: Marshall EC, Reed LC, Takoma EC, Walker-Jones/R.H. Terrell EC, and Winston EC. The schools ending in "EC" are "Education Centers" that serve atypical grade configurations (e.g. K-8). The school ending in "LC" is a "Learning Center" that is an elementary school embedded in a community center.

survey and the planned 2009 teacher survey, we can examine all of these issues and estimate the fractions of school staff who are aware of EPIC, who want to improve performance because of EPIC awards, and who believe that they can do so.

BASELINE CHARACTERISTICS

In the remaining portion of this chapter, we compare baseline characteristics to determine if there are significant differences across award status and performance quartiles on the VAM.[33] The baseline characteristics fall into three broad categories: (1) school performance measures, (2) school characteristics, and (3) student characteristics.

School performance and school characteristics data were obtained from publicly available data. To estimate student characteristics, we created a data set of student-level data for each school for the students who were included in the VAM data set.

The following characteristics are measured:

- ***School Performance Characteristics.*** the proportion of schools in each category making Adequate Yearly Progress (AYP), percentage of schools identified as in need of improvement (SINI), and the average percentage of students scoring proficient on the District of Columbia Comprehensive Assessment System (DC-CAS) math and English Language Arts exams. These data are for the 2006-2007 school year.

- ***School Characteristics.*** the total number of students, the student/teacher ratio, and the total number of teachers. These data are from the Common Core of Data for the 2005-2006 school year which was the most recent year of data available at the time of this report.

- ***Student Characteristics.*** the percentage of students who are black, Hispanic, eligible for free or reduced lunch (FRPL), limited English proficient (LEP), and identified as being in special education. These data are for students used to calculate the VAM scores and are for the 2006-2007 school year.

Since sample sizes are small, even large variations across groups are unlikely to generate much statistical significance because of the likelihood that these differences occurred by chance. This is particularly true for comparisons between award and non-award winners.

[33] VAM performance was measured for the 2006-2007 school year using methods similar to that used in Memphis. See Booker and Isenberg (2008) for details.

Baseline Characteristics by Award Status

Table IV.1 shows the baseline characteristics of schools by award status. Only three schools won awards in 2007, and these are compared to 129 non-award winning schools.

Table IV.1. Baseline Statistics by Award Status, DC Public Schools

Category	Award Recipients	Non-Award Schools
School Performance (%)		
AYP pass	100.0	22.8***
SINI	0.0	78.7***
Student proficiency		
ELA proficiency	56.5	38.2
Math proficiency	45.1	30.9
School Characteristics		
Enrollment	287.3	382.1
Student-teacher ratio	17.1	13.6
Staff size	17.0	31.3
Student Characteristics (%)		
Ethnicity		
Black	92.2	83.6
Hispanic	6.6	10.2
FRPL	82.9	65.8
LEP	7.8	6.4
Special education	16.6	15.5
Number of Schools	**3**	**129**

*Significantly different from the award recipients at the 10% level.
**Significantly different from the award recipients at the 5% level.
***Significantly different from the award recipients at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year).

- ***Performance Characteristics.*** Significant differences did exist with respect to performance measures. Award winning schools were much more likely to make AYP in this period year (100 percent) than non award winners (23 percent) and much less likely to be classified as in need of improvement for failing to make AYP in consecutive years (0 percent of award schools compared with 79 percent of non award schools). The differences along NCLB performance measures may be explained in part by the structure of the DC awards. Like the DC awards metric, the "Safe-Harbor" provision of NCLB enables schools to make AYP based on the increase in the percentage of students scoring proficient on state exams. As a result, schools that make large gains in percent proficient are also likely to make AYP.

- ***School and Student Characteristics.*** In general, schools that won awards and schools that did not win awards are similar. On average, between 6 and 8 percent of students are LEP and between 6 and 11 percent were Hispanic. Just over 15 percent were identified for special education. Although a higher proportion of students in the schools that won awards were black (92 percent compared to 84 percent) and eligible for FRPL (83 percent compared to 66 percent), there was no significant variation in these characteristics across categories and it is possible that this variation occurred by chance. Similarly, although award winning schools tended to be smaller (287 average students compared to 382 in non-award schools) there was no significant relationship between award status and school size.

Of 12 comparisons by award status, only 2 were significantly different. These differences were limited to performance on NCLB-related measures. School and student characteristics did not vary significantly by award status.

Baseline Characteristics by VAM Quartile Scores

Table IV.2 shows the baseline characteristics by VAM quartile. Although awards in DC schools were not based on the VAM used in the other sites, the comparison is relevant, since DC plans to switch to the VAM in 2009. Better performing schools in the VAM would not necessarily win awards in 2007 under the proficiency-based DC award model. Schools first were separated by school level (elementary, middle, high) and then placed in quartiles based on performance in MPR's VAM. For each school level, we combined the two middle quartiles and then merged the different school levels to produce a total of 65 schools in the middle quartiles, compared with 30 in each of the top and bottom quartiles. All tests of statistical significance were between the top or bottom quartile and the middle two quartiles.

- ***Performance Characteristics.*** Schools in the top quartile were significantly different from those in the middle quartiles in three of the four characteristics measured. The top quartile of all schools was much less likely than the middle quartiles to be designated as in need of improvement (67 percent of top quartile schools needed improvement, compared to 82 percent of schools in the middle quartile). Similarly, the average percentage of students scoring proficient on English Language Arts and math tests was significantly higher for schools in the top quartile of the VAM. For English language, average percent proficient ranged from 48 percent of students in the top quartile to only 29 percent in the bottom quartile. For math, the top quartile averaged 42 percent proficient, while the bottom quartile averaged 21 percent. Across all quartiles, only a small proportion of schools made AYP, even in the top quartile. It is interesting to note that even schools that increased their value-added scores by the greatest margins still had difficulty meeting the requirements of NCLB.

Table IV.2. Baseline Statistics by VAM Quartile Scores, DC Public Schools

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance (%)			
AYP pass	33.3	18.5	20.0
SINI	66.7*	81.5	86.7
Student proficiency			
ELA proficient	48.0**	36.6	29.1*
Math proficient	42.2***	28.7	21.3*
School Characteristics			
Enrollment	397.5	379.3	393.9
Student-teacher ratio	14.0	13.1	14.5
Staff size	32.7	31.8	30.3
Student Characteristics (%)			
Ethnicity			
Black	69.1***	88.7	93.9
Hispanic	17.3**	8.6	5.8*
FRPL	61.6	66.7	75.1
LEP	10.2*	5.7	3.6
Special education	14.5	15.9	16.8
Number of Schools	**30**	**65**	**30**

*Significantly different from middle quartile schools at the 10% level.
**Significantly different from middle quartile schools at the 5% level.
***Significantly different from middle quartile schools at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

- ***School Characteristics.*** Across all school levels, there were no significant differences between quartiles in terms of school characteristics. Average school size ranged between 379 and 397 for all schools—as expected, elementary schools tended to be smaller and high schools tended to be larger. Student/teacher ratios averaged around 14.

- ***Student Characteristics.*** Student characteristics, on the other hand, varied significantly by quartile. Out of 10 comparisons by VAM quartile, 4 were significant. Schools in the top quartile served a significantly lower proportion of students who were black; schools in the top quartile averaged 69 percent black students, compared to 89 percent black in the middle quartiles and 94 percent black in the bottom quartile. Top quartile schools also served a higher percentage of students who were Hispanic and LEP; on average, schools in the top quartile served a student body that was 17 percent Hispanic and 10 percent LEP, compared to 9 percent Hispanic and 6 percent LEP for schools in the middle quartiles. One other difference distinguished the bottom quartile. These

schools served a higher proportion of students eligible for FRPL (75 percent compared to 67 percent in the middle quartiles).

Appendix Tables A.10 to A.12 show similar VAM comparisons by school level (elementary, middle and high). In general, these tables show very few significant differences, with the exception of elementary schools. Of the 24 comparisons considered for each level, one is significant for high schools (the percentage of students identified for special education is significantly larger for schools in the bottom quartile than those in the middle quartiles) and only 2 are significant for middle schools. For elementary schools, six significant relationships exist between VAM quartiles and baseline characteristics, but all of these differences also exist when school levels are combined. In many cases, the differences are greater in size for individual school levels, but become significant only in the combined table. With one exception, differences between quartiles are limited to school performance and student characteristics.

CONCLUSION

The baseline data show DC award winning schools to be very similar to non-award winning schools in terms of student and school characteristics. Differences in school performance might have resulted from the similarity between the Safe-Harbor criteria for making AYP and the structure of the DC awards, which are based on increases in school proficiency rates.

Differences in baseline characteristics across VAM quartiles were more prevalent than in comparisons across award status. Since the VAM measures average improvement in student test scores instead of the change in percent proficient at a school level, the link between performance on the VAM and performance on NCLB is not as direct; schools could make dramatic improvements in student value-added scores but might still fail to make AYP, or students might not meet proficiency cutoffs on math and English Language Arts exams. It is likely, however, that schools making large value-added gains also would increase the proportion of students meeting proficiency standards.

School characteristics were not significantly different across value-added quartiles in DC, but student characteristics did vary significantly for different quartiles, particularly among elementary and high schools. This is particularly interesting, since similar differences did not exist between schools that won awards in the DC model and those that did not. In fact, the small number of schools that won awards in DC actually had a higher proportion of students who were black and eligible for FRPL, in direct contrast to the schools in the top quartile of the VAM, although these differences were not significant by award status.

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APPENDIX A
SELECTED BASELINE STATISTICS

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Table A.1. Student Sample vs. Overall School Characteristics MCS That Include Only Tested Grades

	Tested Students (%)	All Students (%)
Ethnicity		
Black	95.4	94.5*
Hispanic	2.9	3.0
FRPL	85.1	84.8
Male	50.7	52.0**
Number of Schools	**19**	

Note: Includes schools whose grades served fall between 3 and 8.

The data for tested students are for the students in our VAMs for the 2006-2007 school year. The data for all students are from the Common Core of Data for 2005-2006 school year.

Table A.2. Student Sample vs. Overall School Characteristics Charter Schools That Include Only Tested Grades

Characteristic	Tested Students (%)	All Students (%)	Number of Schools with Nonmissing Values for Both VARS
Ethnicity			
Black	52.1	52.2	7
Hispanic	31.9	26.8	7
FRPL	65.2	67.7	7
LEP	12.2	16.2	5
Special Education	13.8	9.5*	5
Male	49.6	48.2	4

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: Includes schools whose grades served fall between 3 and 8.

The data for tested students are for the students in our VAMs for the 2006-2007 school year. The data for all students are from publicly available data for the 2006-2007 school year when possible and from the 2005-2006 school year otherwise.

Table A.3. Student Sample vs. Overall School Characteristics DC Schools That Include Only Tested Grades

Characteristic	Tested Students (%)	All Students (%)
Ethnicity		
Black	86.7	86.0
Hispanic	10.2	10.3
FRPL	69.1	70.3
LEP	5.3	5.7
Special Education	18.2	19.1
Male	48.3	49.8
Number of Schools	**12**	

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: Includes schools whose grades served fall between 3 and 8.

The data for tested students are for the students in our VAMs for the 2006-2007 school year. The data for all students are from the Common Core of Data for 2005-2006 school year.

Table A.4. Baseline Statistics for MEMPHIS Elementary Schools By VAM Quartile Scores

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance			
AYP pass (%)	100.0	95.9	72.0***
SINI (%)	4.2	6.1	8.0
Student proficiency (%)			
ELA proficient	87.0	84.4	79.2***
Math proficient	87.5**	82.9	75.9***
Promotion rate	95.7	95.7	95.2
School Characteristics			
Enrollment	500.7	564.9	529.3
Student-teacher ratio	16.5	16.0	16.4
Staff size	30.1*	34.9	31.8
Teacher ethnicity (%)			
White	34.1	33.4	32.2
Black	65.1	64.2	66.3
Hispanic	0.1	0.4	0.7
Master's or Ph.D. (%)	61.6	60.3	59.1
Student Characteristics (%)			
Ethnicity			
Black	92.7	88.4	92.7
Hispanic	4.1	54.4	3.8
FRPL	87.3	86.6	88.9
LEP	3.4	4.3	3.2
Special education	11.6	11.2	11.0
Number of Schools	**25**	**49**	**25**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Notes: Only Memphis schools eligible for an EPIC award in 2008-2009 are included in these statistics.

School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

Table A.5. Baseline Statistics for MEMPHIS Middle Schools by VAM Quartile Scores

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance			
AYP pass (%)	83.3	63.6	20.0
SINI (%)	20.0	27.3	40.0
Student proficiency (%)			
ELA proficient	82.4	83.3	80.0
Math proficient	79.2	80.4	77.8
Promotion rate	96.9**	90.1	89.7
School Characteristics			
Enrollment	737.3	867.0	791.0
Student-teacher ratio	16.5	18.5	16.4
Staff size	41.2	46.3	46.5
Teacher ethnicity (%)			
White	22.3	24.5	24.4
Black	75.1	73.8	75.5
Hispanic	0.2	1.0	0.1
Master's or Ph.D. (%)	68.2	55.2	65.2
Student Characteristics (%)			
Ethnicity			
Black	95.3	93.8	95.9
Hispanic	2.3	3.1	2.3
FRPL	84.6	81.1	89.7
LEP	1.4	81.1	89.7
Special education	10.7	10.6	12.2
Number of Schools	**6**	**11**	**5**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Notes: Only Memphis schools eligible for an EPIC award in 2008-2009 are included in these statistics.

School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

Table A.6. Baseline Statistics for MEMPHIS High Schools by VAM Quartile Scores

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance			
AYP pass (%)	50.0	33.3	50.0
SINI (%)	25.0	55.6	25.0
Student proficiency (%)			
ELA proficient	87.5	86.5	87.5
Math proficient	79.8	73.5	79.8**
Promotion rate	82.1**	77.4	82.1
School Characteristics			
Enrollment	1,356.8	1,120.7	1,356.8
Student-teacher ratio	20.4	2.8	20.4
Staff size	66.3	53.1	66.3
Teacher ethnicity (%)			
White	28.1	33.4	28.1
Black	68.7	64.8	68.7
Hispanic	1.3	0.3	1.3
Master's or Ph.D. (%)	59.9	62.3	59.9
Student Characteristics (%)			
Ethnicity			
Black	96.5	95.9	96.5*
Hispanic	2.3	1.9	2.3
FRPL	75.1	80.5	75.1
LEP	1.9	1.1	1.9
Special education	7.6	9.1	7.6
Number of Schools	**4**	**9**	**4**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Notes: Only Memphis schools eligible for an EPIC award in 2008-2009 are included in these statistics.

School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

Table A.7. Baseline Statistics for Charter Elementary Schools by VAM Quartiles

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance (%)			
AYP pass	71.4	56.3	33.3
SINI	28.6	25.0	50.0
School Characteristics			
Enrollment	224.1	245.9	471.4***
Student-teacher ratio	17.8	15.6	21.1**
Staff size	15.0	17.2	27.1**
Years operating			
2 years or fewer	0.0	0.0	0.0
3-5 years	50.0	47.1	42.9
6 years or more	50.0	52.9	57.1
Student Characteristics (%)			
Ethnicity			
Black	49.8	55.1	84.5**
Hispanic	42.5**	16.7	10.6
FRPL	76.5	70.0	74.0
LEP	12.8	6.6	4.3
Special education	22.4*	11.7	9.8
Number of Schools	**8**	**17**	**8**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data—2006-2007 when possible and 2005-2006 otherwise. Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

Table A.8. Baseline Statistics for Charter Middle Schools by VAM Quartiles

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance (%)			
AYP pass	72.7	69.6	30.0*
SINI	18.2	39.1	30.0
School Characteristics			
Enrollment	329.2**	539.4	550.2
Student-teacher ratio	16.1	18.3	17.6
Staff size	24.1*	32.5	31.3
Years operating			
2 years or fewer	0.0	4.2	9.1
3-5 years	36.4	25.0	18.2
6 years or more	63.6	70.8	72.7
Student Characteristics (%)			
Ethnicity			
Black	46.4	52.3	35.6
Hispanic	25.7	27.2	17.6
FRPL	72.0	59.8	45.8
LEP	13.0	7.1	5.2
Special education	11.6	9.3	7.2
Number of Schools	**11**	**24**	**11**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data—2006-2007 when possible and 2005-2006 otherwise. Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

Table A.9. Baseline Statistics for Charter High Schools by VAM Quartiles

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance (%)			
AYP pass	50.0	30.0	50.0
SINI	100.0	40.0	50.0
School Characteristics			
Enrollment	445.5	476.8	484.0
Student-teacher ratio	16.8	15.0	14.0
Staff size	37.0	30.7	40.0
Years operating			
2 years or fewer	25.0	10.0	0.0
3-5 years	0.0	40.0	75.0
6 years or more	75.0	50.0	25.0
Student Characteristics (%)			
Ethnicity			
Black	66.9	30.0	34.2
Hispanic	28.3	31.1	48.1
FRPL	79.6	62.8	69.5
LEP	0.4	5.0	1.0
Special education	7.0	5.5	14.9**
Number of Schools	**4**	**10**	**4**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data—2006-2007 when possible and 2005-2006 otherwise. Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

Table A.10. Baseline Statistics for DC Elementary Schools By VAM Quartile Scores

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance (%)			
AYP pass	36.4	21.7	27.3
SINI	63.6*	82.6	81.8
Student proficiency			
ELA proficient	50.7***	37.7	34.2
Math proficient	43.1***	27.5	24.3
School Characteristics			
Enrollment	329.8	307.4	332.0
Student-teacher ratio	14.7	13.8	14.6
Staff size	24.6	23.8	24.7
Student Characteristics (%)			
Ethnicity			
Black	65.2***	89.5	93.0
Hispanic	18.4**	8.3	6.6
FRPL	61.9	69.5	77.1
LEP	11.8*	6.0	4.5
Special education	15.1	16.0	15.4
Number of Schools	**22**	**46**	**22**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

Table A.11. Baseline Statistics for DC Middle Schools By VAM Quartile Scores

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance (%)			
AYP pass	25.0*	0.0	0.0
SINI	75.0	90.0	100.0
Student proficiency			
ELA proficient	36.8	25.8	15.4
Math proficient	39.7	23.4	13.2
School Characteristics			
Enrollment	550.8**	362.0	498.3
Student-teacher ratio	13.8	12.4	13.5
Staff size	40.3	31.0	37.0
Student Characteristics (%)			
Ethnicity			
Black	79.1	85.4	99.3
Hispanic	10.6	11.6	0.7
FRPL	67.0	68.0	75.0
LEP	4.1	6.4	0.9
Special education	16.4	19.9	19.6
Number of Schools	**4**	**10**	**4**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

Table A.12. Baseline Statistics for DC High Schools By VAM Quartile Scores

Category	Top Quartile	Middle Quartile	Bottom Quartile
School Performance (%)			
AYP pass	25.0*	22.2	0.0
SINI	75.0	66.7	100.0
Student proficiency			
ELA proficient	43.2	42.2	9.8
Math proficient	38.7	40.0	9.9
School Characteristics			
Enrollment	616.5**	765.8	630.3
Student-teacher ratio	9.8	10.4	14.9
Staff size	70.0	74.0	54.3
Student Characteristics (%)			
Ethnicity			
Black	81.1	88.1	93.4
Hispanic	17.6	6.4	6.6
FRPL	53.7	49.2	61.6
LEP	7.7	2.7	1.0
Special education	9.4	10.5	22.8**
Number of Schools	**4**	**9**	**4**

*Significantly different from the tested students at the 10% level.
**Significantly different from the tested students at the 5% level.
***Significantly different from the tested students at the 1% level.

Note: School performance measures and school characteristics were obtained from publicly available data (Common Core of Data for 2005-2006 school year). Student characteristics were averaged across all students included in the VAM (2006-2007 school year). VAM quartiles were based on 2006-2007 school year performance.

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