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Access to School Librarians, Nurses, and Counselors in the Commonwealth of Pennsylvania

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Executive Summary

While teachers and school leaders clearly have the strongest school-based influence on student outcomes, researchers have also found that professional support personnel also can have an important influence on both cognitive and non-cognitive student outcomes. Moreover, school support personnel have a particularly critical influence on the outcomes for students living in poverty—nearly 800,000 students in Pennsylvania schools in 2015.

In this White Paper, I examine access to three types of professional support personnel—librarians, nurses, and counselors. To varying degrees, research has found that access to librarians, nurses, and counselors can positively impact various student cognitive and non-cognitive outcomes.

Data

This study analyzes employment data provided by the Pennsylvania Department of Education on their website (http://www.education.pa.gov/Data-and-Statistics/Pages/Professional-and-Support-Personnel.aspx#tab-1) that includes information on the employment of all professional faculty and staff in every Pennsylvania school for the 2015-16 school year.

Overall Findings

There are three major findings that are consistent across all three roles (librarians, nurses, and counselors). First, the results clearly document a ***disturbing pattern of inequity with respect to access to librarians, nurses, and counselors in which schools enrolling the students most in need of additional support are the least likely to offer the additional support.*** This pattern of inequity is driven by an antiquated and clearly inequitable system of school funding that remains in place despite recent changes by the Pennsylvania legislature. This inequitable pattern demonstrates that students most in need of access to professional support personnel such as librarians, nurses, and counselors. The failure of the Commonwealth to ensure that these students have access to the professional support staff that their wealthier and White peers have access to creates a two-tiered system of education of haves and have-nots. The continuation of this system has negative ramifications for the Commonwealth in that fewer students than would otherwise be the case are well-prepared to enroll in and successfully complete post-secondary education.

Second, ***schools enrolling relatively few students are far less likely to provide their students access to professional support staff (librarians, nurses, and counselors).*** While this finding is driven in part by charter schools not employing professional support staff, the smallest public schools are still less likely to employ these professional support staff than larger schools. Research suggests that smaller schools—especially those located in smaller districts—simply cannot afford to employ such staff, particularly at a full-time level.

Third, ***despite having the economic means to do so, very few charter schools employ librarians, nurses, and counselors.*** Why this is the case is unclear. But lack of financial ability is certainly not a viable reason given that: (a) hundreds of millions of dollars sent to charter schools for special education instruction is not spent on special education students; and, (b) charter schools close to $1,000 more per student on administration than public school districts, even after removing the influence of district size and school location in the state. Because charter schools are located primarily in major urban centers, students in Pennsylvania cities increasingly must choose between public schools that do not employ these professional support staff and charter schools that do not employ these professional support staff. This is not *real* choice.

Librarians

Students in high-poverty schools, schools with large proportions of students of color, schools in low-wealth districts, and urban schools have less access to both part-time and full-time librarians.

Charter schools were much less likely to provide their students with access to any librarian or a full-time librarian. In fact, fewer than 15% of charter schools employed any type of librarian at any school. In comparison, at least 66% of public schools offered a librarian of any type across all three school levels.

Consistent with prior research, a far lower percentage of schools with the smallest student enrollments than schools with the greatest student enrollments employed a librarian of any type and especially a full-time librarian. For a full-time librarian, the differences were at least 50 percentage points across all three school levels

Finally, a much lower percentage of urban schools than schools in other locales employed any librarian and a full-time librarian. Sadly, less than 22% of urban schools across all three levels employed a full-time librarian—even though urban schools tend to have larger enrollments than other schools.

Nurses

The most consistent related to nurses is that a far lower percentage of charter schools employed any nurse or a full-time nurse, regardless of whether or not the nurse . In fact, 30% or fewer charter schools employed a full-time nurse. Startlingly, only 15% of elementary charter schools employed a full-time nurse compared 34% of public elementary schools.

The second most consistent finding is that smaller schools across all three school levels were less likely to employ any nurse or a full-time nurse. This is consistent with prior research from other states.

The third consistent finding was that a lower percentage of schools located in towns employed a full-time nurse. While partially a result of schools located in towns being of smaller size, rural schools are typically even smaller but are more likely than town schools to employ a full-time nurse. Thus, some other factor is influencing the lack of access to nurses provided by schools in Pennsylvania towns.

At the secondary school level, a lower percentage of schools with the highest concentrations of students living in poverty employed any nurse and a full-time nurse as compared to schools with the lowest concentrations of students in poverty. The differences were larger at the middle school level than the high school level.

Counselors

At the secondary school level, students in schools serving the highest concentrations of students living in poverty and students of color had far less access to either a part-time or a full-time counselor than schools with the lowest concentrations of students living in poverty and students of color. Moreover, students in secondary schools located in low-wealth districts had less access to either a part-time or a full-time counselor than their peers enrolled in schools located in high-wealth districts.

Students in charter schools were far less likely to have access to a either a part-time or a full-time counselor across all three school levels. Strikingly, fewer than 52% of charter schools at the elementary school or middle school levels employed either a part-time or a full-time counselor. At the high school level, less than 70% of schools employed either a part-time or a full-time counselor as compared to at least 90% of public schools. In fact, even when comparing schools with similar student enrollments, charter schools were less likely than public schools to employ either a part-time or a full-time counselor.

At the secondary level, a lower percentage of schools located in urban districts employed any counselor or a full-time counselor. The same was true for the employment of any counselor at the elementary school level, but the results were mixed with respect to the employment of a full-time counselor. Thus, the evidence shows a lower percentage of urban districts employed counselors as compared to schools in other locales.

Finally, consistent with prior research, school size (number of students enrolled) is strongly associated with the employment of a counselor and especially with employment of a full-time counselor. Specifically, smaller schools were less likely to employ any counselor or a full-time counselor. This was true across all three school levels.

Introduction

Policymakers and the public often focus on the characteristics of teachers and, to a lesser extent, school leaders employed in Pennsylvania. This focus is appropriate given that research has consistently found that teacher and leader quality are the two school characteristics most associated with student outcomes. Research, however, also concludes that other school personnel such as librarians, nurses, and counselors also influence student cognitive and non-cognitive outcomes. This White Paper from the Center for Evaluation and Education Policy Analysis (CEEPA) located in the Education Policy Studies Department at The Pennsylvania State University focuses on the level of access to librarians, nurses, and counselors in schools throughout the Commonwealth. This study examines access to professional staff in four separate sections: librarians, nurses, counselors, and student-counselor ratio. In appendix A, I detail the data and methodology employed in conducting this study. In appendix B, I provide the full results for each of the four comparisons included in the main body of this study.

Access to School Librarians

While there is not voluminous evidence about the relationship between access to librarians and student achievement, the extant research does suggest a positive relationship such that students that have access to a school library staffed by a qualified librarian tend to have greater achievement as well as growth in achievement, even after controlling for other factors (Krashen, Lee, & McQuillan, 2012; Lance, & Hofschire, 2012; Lonsdale, 2003; Subramaniam, Ahn, Waugh, Taylor, Druin, Fleischmann, & Walsh, 2015). Moreover, this finding is strongest for students living in poverty since they tend to have less access to books at home and increasingly have less access to books through public libraries (Krashen, 2010; Park & Yau, 2014; Pribesh, Gavigan, & Dickinson, 2011). Further, Constantino (2005) notes that many students in affluent communities have access to more books than students living in poverty have access to through all sources in aggregate. Finally, access to libraries and librarians has also been found to be positively associated with children engaging with literature, developing hobbies, and developing social skills (Jones, 2009).

Findings

School Size

Consistent with prior research, a lower percentage of smaller schools than larger schools employed a librarian and a full-time librarian for all three levels of schooling. Indeed, across all three levels, less than 11% of the smallest schools employed a full-time librarian. The differences for full-time librarians were particularly large—50 percentage points at the middle school level and greater than 60 percentage points for elementary and high schools.

Percent of Students Living in Poverty

Across all three school levels, a far greater percentage of low-poverty schools than high-poverty employed a librarian and a full-time librarian. At the middle- and high- school levels, the differences were particularly large—greater than 55 percentage points for any librarian and greater than 50 percentage points for a full-time librarian. Strikingly, less than 22% of high-poverty schools employed a full-time librarian. ***Thus, in Pennsylvania, schools that could benefit most from the presence of a librarian are the least likely to have a librarian.*** Given that students in high-poverty schools often have less access to books at home and often have less access to public libraries, such students benefit more from access to libraries and librarians more than their peers in low-poverty schools, ***this inequity creates an additional barrier to academic achievement for students in high-poverty schools.***

Percent of Students of Color

At the elementary school level, a slightly greater percentage of schools with low proportions of students of color employed a librarian than schools with large proportions of students of color. There was essentially no difference for the employment of a full-time librarian.

At the middle- and high- school levels, a greater percentage of schools with low proportions of students of color employed a librarian and a full-time librarian than schools with high proportions of students of color. Specifically, greater than 72% of schools with the lowest proportions of students of color employed a librarian as compared to less than 25% for schools with the lowest proportions of students of color.

Thus, at least at the secondary school level, schools with students most in need of access to a librarian were the least likely to have access to them.

District Wealth of School

In this analysis, district wealth was measured by the market value of the housing in the district divided by the personal income of the residents in the district. The result is the MVPI aid ratio used in determining certain state aid amount provided to school districts.

A greater percentage of schools in high-wealth districts than schools in low-wealth districts employed librarians or full-time librarians. The differences were particularly stark for full-time librarians with greater than 50 percentage point gaps at all three school levels. The gap at the middle school level was almost 70 percentage points with 89% of schools in high-wealth districts employing a full-time librarian and only 20% of schools in low-wealth districts employing a full-time librarian. This is not surprising given that schools in high-wealth districts tend to have greater per pupil revenue and expenditures, thus can afford to hire more librarians and full-time librarians. In sum, students enrolled in schools in high-wealth districts had far greater access to librarians and full-time librarians than their peers enrolled in schools in low-wealth districts. Given that students in low-wealth districts are more likely to benefit from access to librarians, this current inequity creates

Charter School Status

Across all three school levels, a lower percentage of charter schools employed librarians and full-time librarians. Strikingly, less than 15.5% of charter schools employed a librarian at any of the three school levels and the same was true for full-time librarians. ***Thus, students in charter schools were far less likely to have access to a librarian—either part-time or full-time—than their peers in public schools.***

School Geographic Locale

Of the four geographic locales, urban schools were the least likely to employ part-time or full-time librarians while suburban schools were the most likely to do so. This was true across all three school levels. The differences were particularly large at the middle- and high- school levels. For example, at the middle school level, only about 31% of urban schools employed a part-time or a full-time librarian as compared to nearly 77% of suburban schools. At the high school level, only about 24% of urban schools employed a part-time for full-time librarian as compared to more than 81% in suburban schools. T**hus, once again, we see that students most in need of access to librarians are the least likely to have access to them.**

Summary of Access to Librarians

Consistent with other analyses of access to resources in the Commonwealth of Pennsylvania, the above analysis clearly shows a disturbing pattern of inequitable access to librarians. Specifically, students in high-poverty schools, schools with large proportions of students of color, schools in low-wealth districts, and urban schools have less access to both part-time and full-time librarians.

The differences between schools serving the lowest and highest concentrations of students living in poverty (low- and high-poverty schools) were incredibly substantial—at least 33 percentage points across all school levels and greater than 50% at the secondary school levels.

Further, charter schools were much less likely to provide their students with access to any librarian or a full-time librarian. ***In fact, fewer than 15% of charter schools employed any type of librarian at any school. In comparison, at least 66% of public schools offered a librarian of any type across all three school levels.***

Consistent with prior research, a far lower percentage of schools with the smallest student enrollments than schools with the greatest student enrollments employed a librarian of any type and especially a full-time librarian. For a full-time librarian, the differences were at least 50 percentage points across all three school levels

Finally, a much lower percentage of urban schools than schools in other locales employed any librarian and a full-time librarian. Sadly, less than 22% of urban schools across all three levels employed a full-time librarian—even though urban schools tend to have larger enrollments than other schools.

Table 1: Percentage of Schools Employing at Least One Librarian and at Least One Full-Time Equivalent Librarian by School Level and Selected School Characteristics (2015-16)

School Characteristic	Elem Schools		Middle Schools		High Schools	
	Librarian	FT Librarian	Librarian	FT Librarian	Librarian	FT Librarian
Small School	76.3	4.0	53.7	10.3	39.7	10.6
Large School	83.6	65.0	76.5	60.6	82.1	78.1
Diff: SS - LS	**-7.3**	**-61.0**	**-22.8**	**-50.3**	**-42.4**	**-67.5**
Low Poverty	92.9	65.8	85.7	71.4	82.1	68.9
High Poverty	59.6	21.2	24.8	13.5	25.8	17.9
Diff: LP - HP	**33.3**	**44.7**	**60.9**	**57.9**	**56.3**	**51.0**
Predominantly Not SoC	87.3	26.3	78.2	45.1	72.0	33.3
Predominantly SoC	61.9	25.4	19.5	11.3	24.5	19.9
Diff: Not SoC - SoC	**25.4**	**0.9**	**58.6**	**33.8**	**47.5**	**13.5**
High Wealth	95.0	77.6	97.9	89.4	95.0	87.5
Low Wealth	78.8	32.7	45.0	20.0	55.3	34.0
Diff: HW - LW	**16.2**	**44.9**	**52.9**	**69.4**	**39.7**	**53.5**
Public Schools	83.1	36.5	68.1	43.4	66.3	43.0
Charter Schools	15.2	9.1	9.0	9.0	13.9	13.9
Diff: Public - Charter	**67.9**	**27.4**	**59.2**	**34.5**	**52.3**	**29.1**
Urban	54.2	19.9	30.5	16.9	23.8	22.2
Suburban	88.1	45.9	76.7	56.9	81.1	65.7
Town	82.3	26.3	77.6	44.7	76.8	47.4
Rural	87.8	34.1	78.8	43.4	79.3	35.6

Data Source: PDE Educator Enrollment file, 2016; PDE School Performance Profile

Access to School Nurses in Pennsylvania

Many students have medical needs that can only be treated by trained medical professionals such as nurses. Moreover, students have accidents and medical emergencies. For example, two students have recently died in Philadelphia schools that did not have a full-time nurse to immediately address the medical needs of students. This has occurred with increasing frequency across the country as school districts struggle to provide such services with reduced budgets.

The Pennsylvania Department of Education notes that, "According to the Pennsylvania Public School Code, all students are to have access to school nurse services. School nurses are registered nurses with a bachelor's degree, licensed by the Department of State, Board of Nursing, and certified by the Department of Education. School nurses work under the same Nurse Practice Act and rules as registered nurses in any other practice setting." (Pennsylvania Department of Education, 2017)

Recent research has found that student access to nurses—especially full-time nurses—are associated with improved student outcomes. Specifically, access to nurses is associated with reduced student absenteeism due to illness and injury (Allen, 2003; Biag, Srivastava, Landau, & Rodriguez, 2015; Lineberry & Ickes, 2015; Pennington & Delaney, 2008; Rodriguez et al., 2013; Smith & Sherrod, 2013; Weismuller, Grasska, Alexander, White, & Kramer, 2007; Wyman, 2005; Zirkel & Brown, 2015). For example, full-time nurses sent home only 5% of students complaining of illness compared to part-time and unlicensed personnel that sent home roughly 18% of students complaining of illness.(Pennington & Delaney, 2008). Such outcomes have resulted in researchers concluding that employing a full-time, registered nurses actually save money in the long run through reduced medical costs, costs to parents missing work, and costs to teachers assisting students that missed instructional time (Rodriguez et al., 2013; Wang, Vernon-Smiley, Gapinski, Desisto, Maughan, & Sheetz, 2014;Wyman, 2005). Indeed, in their study of a Massachusetts health intervention program, having full-time nurses resulted in a net benefit of $2.20 for every $1.00 invested in the program. The problem for districts is that many of the cost benefits are realized by parents, teachers, and employers, not school districts. Thus, school district investments may appear as a loss to the school district budget.

While this study relies on data provided by the Pennsylvania Department of Education, discussions with practitioners and members of Intermediate Units were unsure of the accuracy of the data relative to the qualifications of the nurses employed in Pennsylvania public schools. While school code appears to require that school nurses be both registered nurses as well as hold school nurse certification, Intermediate Unit personnel familiar with employment practices of school districts were not entirely confident that schools were employing nurses with these qualifications. Thus, the results in this section may actual overstate the degree to which schools are employing school nurses that actually meet the employment requirements set forth in the Commonwealth's public school code. On the other hand, school districts may provide school nursing services through contracts with outside agencies and not be reporting the employment of nurses since the district does not directly employ the nurse. To the extent that this practice is widespread, the school nurse data might understate the degree to which schools ensure students have access to school nurses.

Findings

School Size

Consistent with prior research, a lower percentage of smaller schools than larger schools employed nurses and full-time nurses for all three levels of schooling. The differences for full-time nurses were particularly large—greater than 50 percentage points at both the elementary- and middle- school levels and nearly 70 percentage points for high schools.

Percent of Students Living in Poverty

At the elementary level, there were mixed results. Specifically, there were essentially no differences in the percentages of schools employing nurses between low- and high-poverty schools. At the middle- and high- school levels, however, greater percentages of low-poverty schools than high-poverty schools employed

nurses and full-time nurses. Thus, at the secondary level, schools with students that often have less access to health care at home are also less likely to have access to health care at school. Research suggests this may partially explain why students at high-poverty schools have lower attendance rates.

Percent of Students of Color

Interestingly, a lower percentage of schools with the lowest proportions of students color employed full-time nurses as compared to schools with greater proportions of students of color. The opposite was true for the employment of nurses overall. Specifically, as compared to schools enrolling the greatest proportions of students of color, a greater percentage of schools enrolling the lowest proportions of students of color employed at least one nurse. The contradictory results are partially explained by the influence of school size. Specifically, schools with few students of color tend to have smaller enrollments while schools with more students of color tend to have larger enrollments and greater school size is strongly associated with greater employment of full-time support staff, including nurses.

District Wealth of School

In this analysis, district wealth was measured by the market value of the housing in the district divided by the personal income of the residents in the district. The result is the MVPI aid ratio used in determining certain state aid amount provided to school districts.

Interestingly, a lower percentage of high-wealth than low-wealth schools employed any nurse and a full-time nurse at the elementary school level. One would expect the opposite result. At the middle- and high-school levels, a greater percentage of high-wealth than low-wealth schools employed a full-time nurse and the differences were quite large.

Strikingly, across all three school levels, less than 50% of schools in low-wealth districts employed a full-time nurse. At the middle school, about 72% of schools in high-wealth districts employed a full-time nurse as compared to only about 43% of schools in low-wealth districts. At the high school levels, the corresponding percentages were 83% and 47%, respectively.

Thus, students in schools located in low-wealth districts were far less likely to employ a full-time nurse despite the fact that such schools had far greater percentages of students living in poverty and, thus, a far greater percentage of children that need access to a full-time nurse.

Charter School Status

Across all three school levels, a lower percentage of charter schools employed nurses and full-time nurses. Only about one-third of charter schools employed any nurse—part-time or full-time—across all three school levels. This was substantially lower than for public schools. ***Thus, students in charter schools were far less likely to have access to a nurse—either part-time or full-time—than their peers in public schools.***

School Geographic Locale

With respect to geographic locale, the results were mixed across the three school levels with respect to the employment of any nurse. When examining the results for the employment of a full-time nurse, a consistently greater percentage of urban and suburban schools employed a full-time nurse than town or rural schools at the secondary level (middle schools and high schools).

Table 2: Percentage of Schools Employing at Least One Nurse and at Least One Full-Time Equivalent Nurse by School Level and Selected School Characteristics (2015-16)

School Characteristic	Elem Schools		Middle Schools		High Schools	
	Nurse	FT Nurse	Nurse	FT Nurse	Nurse	FT Nurse
Small School	68.6	11.7	80.9	20.6	64.2	18.5
Large School	92.9	65.6	89.4	76.5	90.1	88.1
Diff: S – L	**-24.3**	**-53.9**	**-8.5**	**-55.9**	**-25.8**	**-69.5**
Low Poverty	83.7	32.3	94.7	62.4	88.1	78.1
High Poverty	81.8	46.6	82.7	53.4	67.5	49.7
Diff: LP - HP	**1.9**	**-14.3**	**12.0**	**9.0**	**20.5**	**28.5**
Predominantly Not SoC	82.0	25.4	85.0	36.1	80.7	45.3
Predominantly SoC	80.5	49.5	72.2	51.9	68.9	54.3
Diff: Not SoC - SoC	**1.5**	**-24.1**	**12.8**	**-15.8**	**11.8**	**-9.0**
High Wealth	85.7	30.4	95.7	72.3	95.0	82.5
Low Wealth	88.5	46.2	85.0	42.5	95.7	46.8
Diff: HW - LW	**-2.7**	**-15.7**	**10.7**	**29.8**	**-0.7**	**35.7**
Public Schools	80.9	33.9	89.1	54.8	85.1	59.8
Charter Schools	27.3	15.2	35.8	25.4	35.4	30.4
Diff: Public - Charter	**53.6**	**18.8**	**53.3**	**29.4**	**49.6**	**29.4**
Urban	87.5	51.4	78.4	56.8	73.8	61.9
Suburban	78.5	30.2	90.9	57.3	91.8	76.0
Town	81.9	27.6	81.6	36.8	88.4	48.4
Rural	77.5	34.1	81.4	41.6	91.3	53.8

Data Source: PDE Educator Enrollment file, 2016; PDE School Performance Profile

Summary of Access to School Nurses

The most consistent finding is that a far lower percentage of charter schools employed any nurse or a full-time nurse. In fact, 30% or fewer charter schools employed a full-time nurse. Startlingly, only 15% of elementary charter schools employed a full-time nurse compared 34% of public elementary schools. This lack of access is particularly disturbing because charter schools enroll a high proportion of students living in poverty—the very type of students most in need of access to a nurse.

The second most consistent finding is that smaller schools across all three school levels were less likely to employ any nurse or a full-time nurse. This is consistent with prior research conducted in other states. Across all three schools, fewer than 21% of the smallest schools employed a full-time nurse.

The third consistent finding was that a lower percentage of schools located in towns (as identified by the National Center for Education Statistics) employed a full-time nurse. While partially a result of schools located in towns being of smaller size, rural schools are typically even smaller but are more likely than town schools to employ a full-time nurse.

At the secondary school level, a lower percentage of schools with the highest concentrations of students living in poverty employed any nurse and a full-time nurse as compared to schools with the lowest concentrations of students in poverty. The differences were larger at the middle school level than the high school level.

Access to School Counselors in Pennsylvania

Counselors can play a pivotal role in preventing dropout and absenteeism--especially at the high school level—by: providing social support; monitoring and mentoring students; developing personal and social skills; and, involving teachers, administrators, and parents throughout the process (White & Kelly, 2010.). Counselors also impact both access to and success in advanced coursework such as AP classes (Rowell & Hong, 2015). Moreover, academic support programs and services offered by counselors for students in poverty and students of color can help create more equitable outcomes (Rowell & Hong, 2015).

Importantly, counselors also attend to students' non-academic needs. Counselors, for example, help to address the social, emotional, and personal factors that may impede a students' academic success, sometimes through the use of developmental transition interventions (Milsom, Goodnough, & Akos, 2007). The issues addressed by counselors can include students' feelings of belonging, academic and educational aspirations, self-efficacy, and social as well as academic identities, especially for racial/ethnic minority students (Akos & Ellis, 2008). These efforts, in turn, can assist in the development of a more positive school climate, particularly for racial/ethnic minority students (Akos & Ellis, 2008).

School counselors have also been found to affect the college- and career-readiness of students. Several variables related to counselors affect career- and college-readiness: low student-to-counselor ratios, amount of time spent in contact with school counselors, time in contact with counselors early in high school, parental contact with counselors, and the number of school counselors available (Bryan, Holcomb-McCoy, Moore-Thomas, & Day-Vines, 2010). Finally, counselors are most crucial to the college aspirations of female and Black students, as research has found these sub-populations of students rely most heavily on the assistance of counselors (Bryan, et al., 2010).

Smaller student-to-counselor ratios are strongly correlated with schools having positive student outcomes, such as greater graduation rates and lower disciplinary incidents--especially in high-poverty schools—as well as greater college application rates (Bryan, et al., 2011; Carrell & Carrell, 2006; Carey, & Dimmitt, 2012; Lapan, Gysbers, Stanley, & Pierce, 2015). Thus, a significant number of studies have found that providing students with access to counselors through relatively low student-counselor ratios can help students—especially students living in poverty—to successfully complete high school and enroll in post-secondary institutions of higher education.

Findings for Employed Counselors

School Size

Consistent with prior research, a lower percentage of the smallest schools than the largest schools employed any counselor and a full-time counselor for all three levels of schooling. The differences for the employment of a full-time counselor were particularly large for elementary schools—almost 84% of the largest schools employed a full-time counselor as compared to only about 21%of the smallest schools. At the middle school level, 90% of the largest schools employed a full-time counselor as compared to only about 54% of the smallest schools. At the high school level, greater than 97% of the largest schools employed a full-time counselor compared to only 64% of the smallest schools.

Percent of Students Living in Poverty

Consistent with prior research and research in general about differences between low- and high-poverty schools, the results show that a far greater percentage of low-poverty schools than high-poverty schools employed any counselor as well as a full-time counselor for all three school levels. At the elementary school level, 76% of low-poverty schools employed a full-time counselor as compared to only about 54% of high-poverty schools. At the middle school, the discrepancy between low- and high-poverty schools was even greater—almost 95% of low-poverty schools employed a full-time counselor compared to only 45% of high-poverty schools. Finally, greater than 97% of low-poverty high schools employed a full-time counselor

compared to about 71% of high-poverty high schools. ***Thus, across all three levels of schools in Pennsylvania, the students that rely most on counselors are the least likely to have access to them.***

Percent of Students of Color

At the elementary school level, the results of the analysis were mixed. With respect to the employment of any counselor, a greater percentage of schools with the least students of color employed any counselor as compared to schools with the most students of color. The difference, however, was not particularly large—just 11 percentage points. Alternatively, a lower percentage of schools with the least students of color employed a full-time counselor than schools with the most students of color.

At the middle school level, there were very large differences in access to both any counselors and full-time counselors between schools with the least and most students of color. With respect to the employment of any counselor, almost 92% of schools with the least students of color employed any counselor as compared to only 48% of schools with the most students of color. Similarly, almost 95% of schools with the least students of color employed a full-time counselor as compared to only 45% of schools with the most students of color.

Finally, at the high school level, about 93% of schools with the least students of color employed any counselor as compared to only about 74% of schools with the most students of color. With respect to the employment of a full-time counselor, the respective percentages were 87% and 72%.

Thus, ***at both the middle- and high- schools, students in schools with the least students of color were far more likely to have access to any counselor and a full-time counselor than students in schools with the most students of color.*** These results clearly show that the percentage of students of color enrolled in a school was negatively associated with access to counselors.

District Wealth of School

In this analysis, district wealth was measured by the market value of the housing in the district divided by the personal income of the residents in the district. The result is the MVPI aid ratio used in determining certain state aid amount provided to school districts.

At the elementary school level, there were mixed results. Specifically, about the same percentage of schools in low-wealth and in high-wealth districts employed a counselor. Only a slightly greater percentage of schools in high-wealth districts employed a full-time counselor than schools in low-wealth districts.

At the middle school level, a greater percentage of schools in high-wealth districts employed both any counselor and a full-time counselor than schools in low-wealth districts. The difference for the employment of any counselor was about 13 percentage points while the difference for the employment of a full-time counselor was about 23 percentage points.

At the high school level, all schools in high-wealth districts employed any counselor as well as a full-time counselor. The percentage for schools in low-wealth districts was only slightly lower—about 94% for both the employment of any counselor and of a full-time counselor.

While a greater percentage of schools in high-wealth districts than in low-wealth districts employed full-time counselors, only the difference at the middle school level was large (23 percentage points).

Charter School Status

Across all three school levels, a lower percentage of charter schools employed counselors and full-time counselors. At the elementary school and middle school levels, less than 52% of charter schools employed a counselor or a full-time counselor. At the high school level, less than 70% of charter schools employed a counselor or a full-time counselor. With the exception of difference for full-time counselors at the elementary school level, the differences between public schools and charter schools were rather substantial—at least 23 percentage points at the high school level and at least 38 percentage points at the middle school level. ***Thus, students in charter schools were less likely to have access to a counselor—either part-time or full-time—than their peers in public schools.***

School Geographic Locale

In this analysis, I examine the employment of counselors in schools in four geographic locales: urban, suburban, town, and rural. At the elementary school level, the lowest percentage of schools employing any counselor was for the urban locale while the highest percentage was for schools in the town locale. With respect to full-time counselors, the lowest percentage of schools was in the town locale at 48.7%. There were only small differences in the percentages of schools employing a full-time counselor across the other locales.

At the middle school and high school levels, the lowest percentages of schools employing a counselor or a full-time counselor were, by far, in the urban locale. At the middle school level, the percentage of urban schools employing a counselor was only 53% and the percentage employing a full-time counselor was almost 47%. These percentages were at least 40 percentage points lower than the percentages for the schools in the other locales. At the high school level, less than 76% of urban schools employed a part-time or a full-time counselor. This was at least 15 percentage points below any other locales.

While suburban schools across all three levels had greater percentages than schools in either the town or rural locales, the differences were relatively small. ***Thus, students with the least access to counselors overall and full-time counselors were those enrolled in schools in urban areas.***

Table 3: Percentage of Schools Employing at Least One Counselor and at Least One Full-Time Equivalent Counselor by School Level and Selected School Characteristics (2015-16)

School Characteristic	Elem Schools		Middle Schools		High Schools	
	Counselor	FT Counselor	Counselor	FT Counselor	Counselor	FT Counselor
Small School	78.2	20.9	75.0	53.7	78.1	64.2
Large School	88.9	83.6	90.9	90.2	97.4	97.4
Diff: S – L	**-10.7**	**-62.7**	**-15.9**	**-36.5**	**-19.2**	**-33.1**
Low Poverty	91.1	76.0	97.0	94.7	97.4	97.4
High Poverty	73.9	54.4	48.1	45.1	73.5	70.9
Diff: LP - HP	**17.1**	**21.6**	**48.9**	**49.6**	**23.8**	**26.5**
Predominantly Not SoC	85.1	44.6	91.7	83.5	93.3	87.3
Predominantly SoC	73.4	60.4	42.9	38.3	73.5	72.2
Diff: Not SoC - SoC	**11.8**	**-15.8**	**48.9**	**45.1**	**19.8**	**15.1**
High Wealth	91.30	82.6	95.74	95.7	100.00	100.0
Low Wealth	93.27	76.0	82.50	72.5	93.62	93.6
Diff: HW - LW	**-2.0**	**6.6**	**13.2**	**23.2**	**6.4**	**6.4**
Public Schools	85.7	60.3	84.3	78.5	93.2	90.1
Charter Schools	51.5	48.5	46.3	40.3	69.6	67.1
Diff: Public - Charter	**34.2**	**11.8**	**38.0**	**38.2**	**23.6**	**23.0**
Urban	76.4	61.6	53.1	46.5	75.4	73.8
Suburban	85.4	65.6	94.5	91.7	97.9	97.0
Town	92.7	48.7	92.1	86.8	95.8	95.8
Rural	85.1	57.5	92.0	83.2	98.1	90.9

Data Source: PDE Educator Enrollment file, 2016; PDE School Performance Profile

Summary of Access to School Counselors

At the secondary school level, students in schools serving the highest concentrations of students living in poverty and students of color had far less access to either a part-time or a full-time counselor than schools with the lowest concentrations of students living in poverty and students of color. Moreover, students in secondary schools located in low-wealth districts had less access to either a part-time or a full-time counselor than their peers enrolled in schools located in high-wealth districts.

Thus, at the secondary school level, students most in need of having access to school counselors were the least likely to actually have access to them. Given that lack of access to an effective school counselor places a serious impediment to students entering high education, these inequities most certainly have a negative impact on both the number of students entering higher education and the diversity of students entering higher education in Pennsylvania.

For elementary schools, the results were mixed. Indeed, there was no clear pattern with respect to the employment of any counselor or a full-time counselor across schools with high concentrations of students living in poverty, high concentrations of students of color, and schools located in low-wealth districts.

In addition, ***students in charter schools were far less likely to have access to a either a part-time or a full-time counselor across all three school levels.*** Strikingly, fewer than 52% of charter schools at the elementary school or middle school levels employed either a part-time or a full-time counselor. At the high school level, less than 70% of schools employed either a part-time or a full-time counselor as compared to at least 90% of public schools. In fact, even when comparing schools with similar student enrollments, charter schools were less likely than public schools to employ either a part-time or a full-time counselor.

At the secondary level, a lower percentage of schools located in urban districts employed any counselor or a full-time counselor. The same was true for the employment of any counselor at the elementary school level, but the results were mixed with respect to the employment of a full-time counselor. Thus, evidence shows a lower percentage of urban districts employed counselors relative to schools in other locales.

Finally, consistent with prior research, school size (number of students enrolled) is strongly associated with the employment of a counselor and especially with employment of a full-time counselor. Specifically, smaller schools were less likely to employ a part- or full- time counselor. This was true across all school levels.

Findings for Student-Counselor Ratio

Percentage of Schools Meeting Selected Student-Counselor Ratios

Before examining potential disparities in access to various student-counselor ratios based on school characteristics, I first document the overall percentages of schools meeting various student-counselor ratios by school level for the 2015-16 school year. As shown in Table 4, only 50 elementary schools (3.1%) and 73 middle schools (11.0%) met the recommended 250:1 student-counselor ratio. According to research, the most important level for schools to offer a 250:1 student-counselor ratio is at the high school level because counselors play a critical role in assisting student efforts to navigate the college application process, particularly for students who are first-generation college applicants. Unfortunately, only 173 high schools (22.9%) in the Commonwealth met the recommended 250:1 student-counselor ratio. Thus, overall, few schools across the Commonwealth were able to meet the recommended 250:1 student-counselor ratio. The failure to meet this recommendation likely adversely affects student outcomes—particularly with respect to student mental health and college-going outcomes.

Table 4: Number and Percentage of Schools
Meeting Various Student-Counselor Ratios by School Level (2015-16)

School Level	Total Number of Schools	Student-Counselor Ratio							
		250:1		300:1		350:1		400:1	
		N	%	N	%	N	%	N	%
Elementary	1,616	50	3.1	123	7.6	228	14.1	383	23.7
Middle	666	73	11.0	164	24.6	266	39.9	336	50.5
High	755	173	22.9	330	43.7	472	62.5	552	73.1
Total	3,037	296	9.7	617	20.3	966	31.8	1271	41.9

Data Source: PDE Educator Enrollment file, 2016; PDE School Performance Profile

School Size

While smaller schools tend to be less likely to employ a counselor, they are more likely to have a low student-counselor ratio when they do employ a counselor. Indeed, across all three school levels, a greater percentage of smaller schools than larger schools met the recommended 250:1 student-counselor ratio. At the elementary school and middle school levels, a greater percentage of smaller schools met the 400:1 student-counselor ratio. At the high school level, a slightly greater percentage of larger schools than smaller schools met the 400:1 student-counselor ratio. ***Most striking about the overall result is that less than 40% of elementary schools, 25% of middle schools, and 33% of high schools met the recommended 250 students to one counselor ratio.*** Clearly, too many Pennsylvania schools fail to provide students the individual attention that they need from counselors.

Percentage of Students Living in Poverty

At the elementary school level, there were no substantial differences in the percentages of schools meeting either the 250:1 or 400:1 student-counselor ratios. At the middle school level, there was no substantial difference in the percentages of low-poverty or high-poverty schools meeting the recommended 250:1 student-counselor ratio. Unfortunately, only about 10% of each group of schools actually met this recommended ratio. At the less stringent 400:1 student-counselor ratio, a greater percentage of low-poverty schools than high-poverty schools met this standard. At the high school level, a greater percentage of low-poverty than high-poverty schools met both the 250:1 and 400:1 student-counselor ratio standards. ***Thus, at the secondary school level, a greater percentage of low-poverty than high-poverty schools were able to offer their students a student-counselor ratio that afforded students the opportunity to have more individual attention from the counselor.*** This was particularly true at the high school level.

Percentage of Students of Color

At the elementary school, there were only minimal differences in the percentages of low- and high-poverty schools with student-counselor ratios of 250:1 or 400:1. Less than 4% of both sets of schools met the recommended 250:1 ratio while about 23% of both sets of schools met the less stringent ratio of 400:1.

At the middle school level, a greater percentage of schools with the least students of color had student-counselor ratios of less than 250:1 and less than 400:1 than schools with the most students of color. Few schools from either group, however, met the recommended 250:1 ratio. Specifically, only 15% of the schools with the least students of color met the 250:1 ratio while only 6% of the schools with the most students of color. Alternatively, 62% of the schools with the least students of color met the least stringent 400:1 ration as compared to only about 16% of the schools with the most students of color.

At the high school level, a slightly greater percentage of schools with the least students of color met the recommended 250:1 student-counselor ratio than schools with the most students of color. Specifically, 22% of the schools with the least students of color met the 250:1 standard as compared to only about 14% of the schools with the most students of color. At 28 percentage points, the difference between the schools with the least students of color (76.0%) and schools with the greatest proportion of students of color (47.7%) was even greater for the 400:1student-counselor ratio.

Thus, for secondary schools, not only were schools with the lowest proportions of students of color more likely to employ counselors, but they also were more likely to smaller student-counselor ratios than schools with the greatest proportions of students of color. Given that students in schools with greater proportions of students of color are more likely to benefit from access to a counselor, this inequity likely has negative consequences in the Commonwealth.

District Wealth of School

At the elementary school level, almost none of either the schools in high- or low-wealth schools met the 250:1 student-counselor ratio standard. However, a slightly greater percentage of schools in low-wealth

schools than in high-wealth schools met the 400:1 student-counselor standard. Yet, the percentage for high-wealth schools was only about 29%.

At both the middle- and high- school levels, a greater percentage of schools in high-wealth districts than schools in low-wealth districts met the 250:1 and the 400:1 student-counselor ratio standards. The difference between schools in high-wealth and schools in low-wealth districts was particularly large for high schools meeting the 250:1 student-counselor ratio. Specifically, almost 63% of high schools in high-wealth districts met the 250:1 student-counselor ratio standards as compared to only about 21% of schools in low-wealth districts.

Thus, at the secondary level, schools in high-wealth districts tended to provide students with lower student-counselor ratios than students in low-wealth districts. Given that research has shown that students in schools in low-wealth districts are more likely to benefit from the personal attention of counselors, this lack of access likely has negative consequences for a number of students in the Commonwealth.

Charter School Status

Interestingly, at the elementary school level, a greater percentage of charter schools than public schools met both the 250:1 and 400:1 student-counselor ratios. This may be explained by charter schools generally having smaller student enrollments, thus making meeting student-counselor ratios somewhat easier.

Alternatively, at the middle school level, the reverse was true--a greater percentage of public schools than charter schools met both the 250:1 and 400:1 student-counselor ratios. For the 400:1 student-counselor ratio, almost 53% of public schools met the standard as compared to only 22% of charter schools.

Finally, about the same percentage of charter and public schools met the 250:1 student-counselor ratio. However, a far greater percentage of public schools (76.0%) than charter schools (47.7%) had a student-counselor ratio of less than 400:1.

School Geographic Locale

At the elementary school level, almost none of the schools in the four locales met the 250:1 student-counselor ratio standard and there were only minimal differences between schools at the 400:1 student-counselor ratio.

At the middle school level, a lower percentage of urban schools than schools located in the other three locales met either the 250:1 or the 400:1 student-counselor ratios. At the 250:1 student-counselor ratio, none of the four locales had more than 15% of schools meeting the standard.

At the high school level, the urban locale had the lowest percentage of schools (10.3%) meeting the 250:1 student-counselor ratio while about 30% of the schools in the suburban and rural locales met the same standard. With respect to the 400:1 student-counselor ratio, only about 41% of the schools in the urban locale met the standard compared to between 85% and 88% for schools in the other three locales.

While the results were mixed across the various school levels and student-counselor ratios, the evidence suggests that ***students in urban schools tend to have less access to a counselor that can provide them individual attention than students in schools in the other three locales.*** Given that urban schools often enroll students that do not have access to adults who completed college or do not have access to adequate mental health care outside of school, having access to school counselors is a critical support for such students. Providing these students have less access to counselors and less access to counselors that can provide individualized attention creates an additional barrier to high achievement for these students.

Summary for Student-Counselor Ratios

The most consistent—and arguably the most important finding—regarding the student-counselor ratio is that very few schools in the Commonwealth met the recommended 250:1 student counselor ratio. Indeed, far too few schools offered the personalized attention from a counselor that is recommended by the

American School Counselor Association. This likely has adverse impacts on students in the Commonwealth—in particular students with limited access to private counselors and students who might be the first in their family to apply for college.

The second consistent and important finding is that schools that historically serve the students with the greatest needs for access to counselors—schools with high concentrations of students living in poverty, schools with high concentrations of students of color, and schools in low wealth districts—are the least likely to offer low student-counselor ratios that would allow for more personalized attention to be provided to students. This lack of access to student-counselor ratios that would afford high-need students the personalized attention they require is likely to have adverse effects on such students regarding both cognitive and non-cognitive outcomes.

Third, and not surprisingly, smaller schools were generally more likely to meet the 250:1 and the 400:1 student-counselor ratios. The one exception was for high schools at the 400:1 student-counselor ratio level.

Fourth, at the secondary level, a lower percentage of charter schools than public schools in the were able to offer 250:1 or 400:1 student-counselor ratios.

Finally, at the secondary level, a lower percentage of urban schools than schools in the other locales were able to meet the two student-counselor ratios included in this study.

Table 5: Percentage of Schools with a Student-Counselor Ratio of 250:1 and 400:1 by Selected School Characteristics (2015-16)

School	Elem Schools		Middle Schools		High Schools	
Characteristic	< 250:1	< 400 : 1	< 250:1	< 400 : 1	< 250:1	< 400 : 1
Small School	13.2	37.2	25.0	65.4	32.5	74.2
Large School	0.0	15.5	3.8	55.3	21.2	82.1
Diff: S - L	**13.2**	**21.8**	**21.2**	**10.1**	**11.3**	**-7.9**
Low Poverty	2.5	24.3	11.3	72.9	32.5	88.1
High Poverty	3.6	22.1	9.8	20.3	15.9	47.0
Diff: LP - HP	**-1.1**	**2.2**	**1.5**	**52.6**	**16.6**	**41.1**
Predominantly Not SoC	2.2	22.6	15.0	62.4	22.0	76.0
Predominantly SoC	3.7	24.1	6.0	15.8	13.9	47.7
Diff: Not SoC - SoC	**-1.5**	**-1.5**	**9.0**	**46.6**	**8.1**	**28.3**
High Wealth	1.2	28.6	17.0	74.5	62.5	100.0
Low Wealth	1.0	19.2	7.5	52.5	21.3	83.0
Diff: HW - LW	**0.3**	**9.3**	**9.5**	**22.0**	**41.2**	**17.0**
Public Schools	2.7	23.4	11.4	53.6	22.8	76.6
Charter Schools	21.2	36.4	7.5	22.4	24.1	43.0
Diff: Public - Charter	**-18.5**	**-12.9**	**3.9**	**31.2**	**-1.3**	**33.6**
Urban	5.6	19.9	5.6	20.2	10.3	41.3
Suburban	1.6	21.8	12.3	66.8	30.9	88.0
Town	4.3	26.7	10.5	57.9	18.9	85.3
Rural	3.3	25.7	15.0	63.7	30.3	88.5

Data Source: PDE Educator Enrollment file, 2016; PDE School Performance Profile

Final Summary for Librarians, Nurses, and Counselors

There are three major findings that cut across the results for librarians, nurses, and counselors that stem from this study.

First, the results clearly document a disturbing pattern of inequity with respect to access to librarians, nurses, and counselors in which schools enrolling the students most in need of additional support are the least likely to offer the additional support. This pattern of inequity is driven by an antiquated and clearly inequitable system of school funding that remains in place despite recent changes by the Pennsylvania legislature. This inequitable pattern demonstrates that students most in need of access to professional support personnel such as librarians, nurses, and counselors. The failure of the Commonwealth to ensure that these students have access to the professional support staff that their wealthier and White peers have access to creates a two-tiered system of education of haves and have-nots. The continuation of this system has negative ramifications for the Commonwealth in that fewer students than would otherwise be the case are well-prepared to enroll in and successfully complete post-secondary education.

Second, schools enrolling relatively few students are far less likely to provide their students access to professional support staff (librarians, nurses, and counselors). While this finding is driven in part by charter schools not employing professional support staff, the smallest public schools are still less likely to employ these professional support staff than larger schools. Research suggests that smaller schools—especially those located in smaller districts—simply cannot afford to employ such staff, particularly at a full-time level.

Third, despite having the economic means to do so, very few charter schools employ librarians, nurses, and counselors. Why this is the case is unclear. But lack of financial ability is certainly not a viable reason given that: (a) hundreds of millions of dollars sent to charter schools for special education instruction is not spent on special education students; and, (b) charter schools close to $1,000 more per student on administration than public school districts, even after removing the influence of district size and school location in the state. Because charter schools are located primarily in major urban centers, students in Pennsylvania cities increasingly must choose between public schools that do not employ these professional support staff and charter schools that do not employ these professional support staff. This is not *real* choice

Policy Recommendations

There are three major policy recommendations that stem from the findings of this report. I provide these recommendations below.

First, and most obvious, is the need for the Commonwealth to create a fair school finance system that provides every district the funds necessary to provide their students and adequate education. Clearly this is not currently the case despite the recent changes enacted by the Legislature. Rather than wait 30 years for the inequities to be eradicated by the recent changes in school finance, the Legislature should remove the hold harmless provisions adopted in the early 1990s and adopt a system in which the hold harmless provisions is slowly removed over a period of five to ten years. This would hasten the creation of a fair and equitable school finance system. Doing so would at least provide the fiscal means by which all schools could employ librarians, nurses, and counselors.

Second, the Legislature could adopt a faster and arguably easier solution by mandating that all schools employ at least a part-time librarian, full-time nurse, and a sufficient number of counselors to maintain a specific student-counselor ratio such as 350:1. The Legislature could fund the mandate through a separate funding stream that specifically targets these positions. Districts could apply for waivers from the mandate from PDE. Districts with waivers, of course, would also not receive the funding.

Third, the state could include the type of information provided in this White Paper in a supplement to the SPP or through a state website. This would align with the Governor's support for transparency in Pennsylvania. The information might then be used by local taxpayers and organizations to advocate for the employment of individuals in these three professional support staff positions.

About the Center for Education Evaluation and Policy Analysis

This brief was written by Dr. Ed Fuller, Executive Director of the Center for Evaluation and Education Policy Analysis. Dr. Fuller can be contacted at ejf20@psu.edu. The views contained within this brief do not necessarily reflect the opinions and beliefs of the Department of Education Policy Studies, the College of Education, or Penn State University.

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Appendix A: Data and Methods

The data on the number and number of full-time equivalents of the professional support personnel was for the 2015-16 "Professional Personnel Individual Staff Data" file located on the PDE website (http://www.education.pa.gov/Data-and-Statistics/Pages/Professional-and-Support-Personnel.aspx#tab-1). A full-time equivalent is when an individual is assigned to a position for 100% of a school day. So, one full-time equivalent (FTE) is equal to one person assigned to a position for one school day. A school could have multiple people assigned to a position for less than a full-day, but the aggregate assignment levels of all individuals can still meet or exceed 1.0 FTE. For example, two individuals could be assigned to ne a nurse for 0.5 FTEs—or one-half of a school day. Combined, that school offers the equivalent of a full-time (1.0 FTE) nurse. The data on school size and school demographics was also downloaded from the PDE website. Most of the data was downloaded from the School Performance Profile website.

Because some personnel were reported at the district level rather than at an individual school level, I summed the number of personnel and personnel FTEs across all schools in a district and then distributed those personnel across the schools. This took some discretion on my part as different districts presented different situations. For example, the Pittsburgh School District reported that 54 schools did not have a nurse assigned to the particular school. However, the district also reported having 37.9 nurse FTEs assigned to the district but not to a particular school. Thus, I assigned 0.7 FTEs of a nurse to each of the 54 schools (37.9 nurse FTEs / 54 schools = 0.7 nurse FTEs per school). In another case, a school district has 1.0 nurse FTEs assigned to each school in the district except for one school. Further, the school had 1.0 nurse FTEs assigned to the district, but not assigned to the school. In this case, I assigned the nurse to the school that was listed as not having a nurse. In short, I tried to make decisions that would err on the side of caution and assign personnel to individual schools as much as possible.

Importantly, both districts and charter schools reported individuals employed through sub-contracts with other organizations. Both school districts and charter schools, in fact, reported that about 0.4% of their positions were filled by individuals employed through sub-contracts with other organizations, including Intermediate Units. Thus, both school districts and charter schools had the opportunity to list any nurses, librarians, or counselors employed through sub-contractors. Whether, in fact, school districts and charter schools availed themselves of this opportunity is impossible to determine. However, what is abundantly clear is that both school districts and charter schools listed sub-contracted employees for many positions and, thus, had the opportunity to list any sub-contracted nurses, librarians, or counselors. PDE should ensure that schools list every personnel performing professional duties at a school, regardless if the individual is a district employee or an employee of another organization that provides sub-contracted personnel to districts.

To calculate the student-counselor ratio, I divided the total school enrollment from the School Performance Profile data by the number of reported counselor full-time equivalents (FTEs) included in the educator employment data file from PDE. Schools with a student-counselor ration below a particular level such as 250 to 1 were assigned a value of "1" while all other schools were assigned a value of "0". For those schools with no counselor employed by the school, a value of "0" was assigned to the school for all variables indicating a particular student – counselor ratio.

I relied on descriptive statistics to examine issues of access to librarians, nurses, and counselors. Because I had access to the universe of all schools and their employed librarians, nurses, and counselors, there was no need to use statistical analyses to compere differences across types of schools. Indeed, because I had access to all schools in Pennsylvania, the differences displayed in the sections below can be considered to be statistically significant. The reader, however, must make a judgment call as to whether the differences are practically significant—large enough to warrant concern.

Regression analysis could have been employed to simultaneously examine the influence of multiple school characteristics. However, at the time of this report, PDE had not yet released school characteristic for the 2015-16 school year. When that data is released and verified to be accurate, a more in-depth analysis of the data could occur.

Appendix B: Full Results

Table A-1: Full Results for Quintiles of School Size by School Level (2015-16)

School Size	Number of Schools	Librarians		Nurses		Counselors		Counselor Ratio	
		Any	FT	Any	FT	Any	FT	250:1	400:1
Elementary School									
1 to 283	325	76.3	4.0	68.6	11.7	78.2	20.9	13.2	37.2
284 to 384	324	84.6	20.4	76.2	19.1	83.0	43.8	1.5	43.8
385 to 476	321	82.2	37.4	80.1	33.0	87.2	73.5	0.6	13.7
477 to 593	323	81.7	53.3	81.1	38.4	87.9	78.9	0.0	8.0
> 594	323	83.6	65.0	92.9	65.6	88.9	83.6	0.0	15.5
Total	1616	81.7	36.0	79.8	33.5	85.0	60.1	3.1	23.7
Middle School									
0 to 376	136	53.7	10.3	80.9	20.6	75.0	53.7	25.0	65.4
377 to 510	132	52.3	28.0	80.3	43.9	75.0	71.2	18.9	35.6
511 to 629	132	53.8	37.9	85.6	53.0	77.3	75.8	3.0	34.1
630 to 818	134	74.6	63.4	82.8	65.7	84.3	82.8	3.7	61.2
> 818	132	76.5	60.6	89.4	76.5	90.9	90.2	3.8	55.3
Total	666	62.2	39.9	83.8	51.8	80.5	74.6	11.0	50.5
High School									
1 to 369	151	39.7	10.6	64.2	18.5	78.1	64.2	32.5	74.2
370 to 538	151	55.0	20.5	78.8	43.0	91.4	90.7	30.5	64.2
539 to 773	151	60.3	37.1	81.5	57.6	90.7	90.7	15.2	72.8
774 to 1180	151	66.9	53.6	84.8	76.2	96.0	95.4	15.2	72.2
> 1180	151	82.1	78.1	90.1	88.1	97.4	97.4	21.2	82.1
Total	755	60.8	40.0	79.9	56.7	90.7	87.7	22.9	73.1

Table A-2: Full Results for Quintiles of Percentage of Students Living in Poverty by School Level (2015-16)

% Students in Poverty	Number of Schools	Librarians		Nurses		Counselors		Counselor Ratio	
		Any	FT	Any	FT	Any	FT	250:1	400:1
Elementary School									
0.0 to 21.7	325	92.9	65.8	83.7	32.3	91.1	76.0	2.5	24.3
21.8 to 36.6	321	85.4	34.0	76.9	30.2	88.8	62.3	3.7	23.1
36.7 to 48.0	324	81.8	30.6	77.5	29.0	88.0	57.7	3.4	24.7
48.1 to 65.9	339	87.3	27.7	79.1	30.4	82.9	50.1	2.4	24.2
> 65.9	307	59.6	21.2	81.8	46.6	73.9	54.4	3.6	22.1
Total	1616	81.7	36.0	79.8	33.5	85.0	60.1	3.1	23.7
Middle School									
0.0 to 26.1	133	85.7	71.4	94.7	62.4	97.0	94.7	11.3	72.9
26.2 to 40.7	133	74.4	49.6	82.0	47.4	92.5	88.7	9.0	60.9
40.8 to 57.7	134	75.4	40.3	79.9	40.3	90.3	82.1	14.2	56.7
57.8 to 83.1	133	50.4	24.8	79.7	55.6	74.4	62.4	10.5	41.4
> 83.1	133	24.8	13.5	82.7	53.4	48.1	45.1	9.8	20.3
Total	666	62.2	39.9	83.8	51.8	80.5	74.6	11.0	50.5
High School									
0.0 to 26.7	151	82.1	68.9	88.1	78.1	97.4	97.4	32.5	88.1
26.8 to 37.3	151	76.2	49.0	88.7	59.6	98.0	94.0	22.5	84.1
37.4 to 46.3	151	67.5	35.8	80.8	51.7	94.0	89.4	23.8	79.5
46.4 to 63.4	151	52.3	28.5	74.2	44.4	90.7	86.8	19.9	66.9
> 63.4	151	25.8	17.9	67.5	49.7	73.5	70.9	15.9	47.0
Total	755	60.8	40.0	79.9	56.7	90.7	87.7	22.9	73.1

Table A-3: Full Results for Quintiles of Percentage of Students of Color by School Level (2015-16)

% Students of Color	Number of Schools	Librarians		Nurses		Counselors		Counselor Ratio	
		Any	FT	Any	FT	Any	FT	250:1	400:1
Elementary School									
0.0 to 4.4	323	87.3	26.3	82.0	25.4	85.1	44.6	2.2	22.6
4.5 to 8.6	323	88.9	42.7	79.9	27.2	90.7	58.5	3.4	20.1
8.7 to 15.4	324	86.7	43.8	78.4	34.0	90.1	67.9	2.5	25.0
15.5 to 37.4	323	83.6	41.5	78.0	31.6	85.8	69.0	3.7	26.6
> 37.4	323	61.9	25.4	80.5	49.5	73.4	60.4	3.7	24.1
Total	1616	81.7	36.0	79.8	33.5	85.0	60.1	3.1	23.7
Middle School									
0.0 to 5.3	133	78.2	45.1	85.0	36.1	91.7	83.5	15.0	62.4
5.4 to 10.9	133	85.7	56.4	89.5	48.1	97.0	93.2	9.0	66.2
11.0 to 30.8	134	73.9	55.2	87.3	64.2	94.8	90.3	11.2	63.4
30.9 to 84.0	133	53.4	31.6	85.0	58.6	75.9	67.7	13.5	44.4
> 84.0	133	19.5	11.3	72.2	51.9	42.9	38.3	6.0	15.8
Total	666	62.2	39.9	83.8	51.8	80.5	74.6	11.0	50.5
High School									
0.0 to 3.1	150	72.0	33.3	80.7	45.3	93.3	87.3	22.0	76.0
3.2 to 6.1	151	77.5	43.7	86.1	54.3	97.4	91.4	23.2	84.1
6.1 to 13.8	150	68.7	52.7	87.3	66.7	96.7	95.3	28.7	86.7
13.9 to 46.4	151	60.9	49.7	76.8	63.6	92.7	92.1	26.5	70.9
> 46.4	151	24.5	19.9	68.9	54.3	73.5	72.2	13.9	47.7
Total	753	60.7	39.8	79.9	56.8	90.7	87.6	22.8	73.0

Table A-3: Full Results for Quintiles of Percentage of Students of Color by School Level (2015-16)

District Wealth MVPI 2015-16	Number of Schools	Librarians		Nurses		Counselors		Counselor Ratio	
		Any	FT	Any	FT	Any	FT	250:1	400:1
Elementary School									
0.150 to 0.376	316	90.5	73.1	85.1	35.4	93.0	85.4	2.2	29.1
0.377 to 0.488	317	89.9	35.6	79.2	33.1	92.1	65.0	4.4	24.6
0.489 to 0.583	315	86.0	24.4	78.7	28.9	87.0	55.9	3.5	26.0
0.584 to 0.677	319	83.7	27.9	77.4	29.5	80.3	40.4	2.2	23.5
> 0.678	313	64.9	21.7	84.3	42.8	76.0	54.6	1.3	13.4
Total	1580	83.0	36.6	80.9	33.9	85.7	60.3	2.7	23.4
Middle School									
0.150 to 0.404	138	93.5	68.8	96.4	68.1	98.6	92.0	15.2	72.5
0.405 to 0.525	102	79.4	55.9	87.3	54.9	97.1	96.1	8.8	69.6
0.526 to 0.638	121	76.0	44.6	81.8	40.5	93.4	86.0	12.4	62.0
0.639 to 0.737	189	41.8	22.2	89.9	56.6	60.8	55.0	9.0	25.4
> 0.738	49	55.1	24.5	87.8	44.9	85.7	75.5	12.2	55.1
Total	599	68.1	43.4	89.1	54.8	84.3	78.5	11.4	53.6
High School									
0.150 to 0.417	119	89.1	74.8	95.8	78.2	100.0	94.1	42.0	94.1
0.418 to 0.547	120	83.3	61.7	93.3	75.0	98.3	96.7	22.5	91.7
0.548 to 0.635	120	79.2	45.8	91.7	60.0	98.3	93.3	27.5	85.8
0.636 to 0.727	120	80.8	37.5	88.3	50.0	97.5	95.0	19.2	81.7
> 0.728	119	37.8	21.0	97.5	61.3	80.7	80.7	15.1	54.6
Total	598	74.1	48.2	93.3	64.9	95.0	92.0	25.3	81.6

Table A-4: Full Results for Public Schools and Charter Schools by School Level (2015-16)

School Type	Number of Schools	School Size	% of Students in Poverty	% of Students of Color
Elementary School				
Public Schools	1583	452	43.9	22.4
Charter Schools	33	326	69.4	70.2
Total	1616	450	44.4	23.3
Middle School				
Public Schools	599	603	51.1	31.8
Charter Schools	67	637	69.8	75.5
Total	666	607	52.9	36.2
High School				
Public Schools	676	814	43.1	20.2
Charter Schools	79	1027	65.9	63.8
Total	755	837	45.5	24.7

Table A-5: Full Results for Geographic by School Level (2015-16)

Geographic Location	Number of Schools	School Size	% of Students in Poverty	% of Students of Color
Elementary School				
Urban	216	517	78.8	68.9
Suburban	758	467	33.9	20.5
Town	232	404	48.1	10.9
Rural	369	414	42.3	7.8
Total	1575	452	44.1	22.8
Middle School				
Urban	213	608	82.4	77.7
Suburban	253	697	35.9	21.9
Town	76	520	45.2	9.3
Rural	113	476	40.1	8.5
Total	655	610	52.8	36.3
High School				
Urban	126	855	77.0	75.1
Suburban	233	1105	34.7	20.5
Town	95	692	39.2	8.2
Rural	208	580	39.4	5.5
Total	662	872	44.9	24.6