Unified Improvement Planning
Data Analysis for Small Student Populations

This document provides guidance on how schools and districts can effectively understand, use and report data gathered about small student populations in creating and updating Unified Improvement Plans (UIPs). Staff members in small systems often have questions about how to effectively plan with limited access to state required data metrics or how to write a plan when numbers are too small to be reported publicly. Additionally, even larger systems may need to examine the performance of small groups of students when analyzing disaggregated data. This document offers considerations and recommendations regarding improvement planning in small systems or with small student populations.

Protecting Personally Identifiable Information (PII) in a Public Document

In alignment with strong data practices, CDE encourages schools and districts to refer to numbers and percentages in the UIP data narrative to provide specificity to the data story. However, if the numbers being reported are too small, then the public may be able to determine information about individual students (e.g., of the five students with an IEP, one of them is Native American). *Protecting student identity must always take priority.* The Family Educational Rights and Privacy Act (FERPA) prohibits the improper disclosure of personally identifiable information (PII) derived from education records. This necessitates a modified approach to data analysis and reporting when considering small student groups in publicly available documents.

In Colorado, the Department of Education may include specific numbers of students in state reporting when the n-count is 16 students or more for achievement results or 20 students or more for results from the Colorado Growth Model.

Below these thresholds, specific numbers of students in a group are not shared. Districts may use the same thresholds for reporting student performance data in the UIP and may need to report overall trends by referencing more general descriptions for student performance. While CDE will flag UIPs for these kinds of reporting concerns when possible (e.g. through CDE UIP review), and will contact districts if it looks like sensitive data is shared, *the responsibility for protecting personally identifiable information ultimately lies with the district.*

The Value of Disaggregated Data

Many districts in our state manage small school systems and regularly analyze data from small student populations. Larger schools and districts also encounter small n-counts in at least some places during their data analysis. One of the most common reasons a school or district may encounter small n-counts in their data analysis is in disaggregating data to focus on specific student populations. Disaggregated data analysis is a crucial tool for ensuring that all students are being equitably served. For example, identifying gaps in student outcomes with respect to particular student populations can illuminate potential inequities that would be obscured when all student populations are analyzed together. Once gaps are identified, schools and districts can prioritize their improvement efforts appropriately. The analysis of various groups (e.g., students grouped by race, economic status, gifted characteristics, specific learning disability) can enrich an analysis and identify areas for targeted intervention.

However, in schools or districts with particularly high or low percentages of students receiving free or reduced lunch, students with IEPs, English Language Learners, or students from different racial or ethnic groups, the n-counts resulting from disaggregated data analysis may be below the threshold for public reporting. In these situations, the guidance in this document can help frame meaningful data analysis while still protecting PII.

Guidance for reporting data analysis with small student numbers (N-counts)

Aggregate Data for Analysis and Public Reporting

Given the need to examine disaggregated data, either as a tool for addressing student needs equitably or in response to state or federal requirements, both large and small school systems will likely find themselves needing report trends for groups with small n-counts. The best option for reporting the results of these analyses is in fact to aggregate or combine data within grades, between multiple grade levels, or across years to create larger n-counts that demonstrate meaningful patterns and can be publicly reported. See the example below for two ways of approaching the same n-count challenge.

Challenge: The n-count for English Language Learners in each 6th grade class is 4 students (i.e. below threshold for public reporting).

Type of Aggregation	**Sample Approach**	Example
Aggregate into single grade level.	Combine the groups of Multilingual learners (MLs) in 6th grade classes across the school or system.	Across 6th grade, our ML students' math proficiency was 9 points lower than non-ELLs (as measured by CMAS).
Aggregate into multiple grade levels.	Combine the groups of ELLs in 6-8th grade to examine trends for Multilingual Learners (MLs) at the middle school level.	Our school-wide MGP for 6-8th grade MLs on ACCESS was 48.
Aggregate across multiple years.	Combine the data for Multilingual learners (MLs) for three consecutive school years to look at how successive cohorts have performed.	For the years 2023, 2024, and 2025, 6th grade ML growth on CMAS ELA has increased by 13 points.

In cases where aggregating data is not feasible, an analysis of individual student performance may be conducted internally and used to inform a plan, while the public report should describe patterns observed in the data generally without including specific numbers.

One final note: In groups with small n-counts, outliers may strongly influence the aggregated outcomes, so that average student proficiency may fluctuate widely from year to year. In this situation, relying on growth data (e.g., from a locally administered assessment) can be a more effective way to understand student learning trends over time.

Considerations for Specific Sections of the UIP

Review of Current Performance

All UIPs must include the data narrative and its essential components (i.e., description of the school/district, trend statements, student performance priorities, root causes and validation of root causes). It is especially important for small schools and districts to provide some context in the narrative about the size of the student population or of specific student groups and to name any challenges in reporting performance data in a way that protects students' identities. Where the group performance analyzed does not meet n-count thresholds for public reporting, the UIP may simply document the relevant context (e.g., student enrollment) and explain the process used to analyze the data, without reporting specific results.

Analyzing Trends

Follow the guidance above to approach trend analysis and reporting with small n-counts: aggregate smaller groups by grade or by year to identify and report large scale trends, or describe general trends in the data without reporting specific numbers.

Specific Guidance for Small Systems

Many of the resources and guidance documents created for all schools, including the UIP quality criteria, are also valid for small systems. These are available at http://www.cde.state.co.us/uip/uip_general_resources

When considering smaller student groups, state and local assessment data may not yield strong enough trends to inform data analysis, improvement planning, and progress monitoring for the UIP. In addition to using state and local assessment data to indicate annual targets and interim measures, consider how non-assessment data can be used (e.g., as a leading indicator) to supplement assessment data. For example, early warning systems that monitor attendance, behavioral incidence and course performance can be summarized in the current performance section. A response plan to the indicators in the early warning system may then be a major improvement strategy at the school. For more information concerning the appropriate use of non-assessment data please see this resource: http://www.cde.state.co.us/uip/using-non-assessment-data-09-09-2020

Combined District plans for Small Systems

Districts with less than 1,200 students are eligible for the opportunity to write a combined improvement plan for the district and its schools. The circumstances of these plans will be unique, as they may represent the analysis of student performance, root causes and strategies within multiple school buildings. In addition, districts with less than 1,200 students may not receive complete School and District Performance Frameworks (SPF/DPF) and may need to rely more heavily on local data to analyze trends and make improvement decisions. For more guidance on drafting a single plan for a district and all its schools, please see the combined plan guidance, available on the UIP general resources page: https://www.cde.state.co.us/uip/uip_general_resources.

Example of disaggregated Student Academic Achievement data reporting when some disaggregated groups do not meet the threshold for public reporting:

Evidence-Based Reading and Writing (EBRW) - Percent of Students meeting or exceeding the benchmark in 2019

	All Students	ML	FRL	IEP	Black	Hispanic	Students of Color
PSAT 9	30.1%	7.9%	28.6%	4.2%	*	28.6%	28.6%
PSAT 10	27.4%	7.3%	25.1%	8.7%	*	27.0%	26.8%
SAT	20.6%	2.5%	21.1%	*	*	19.2%	19.8%
Combined	26.3%	6.2%	25.1%	5.5%	31.6%	25.3%	25.3%

**Cannot report due to low n count concerns and personally identifiable information*

Math - Percent of Students meeting or exceeding the benchmark in 2019

	All Students	ML	FRL	IEP	Black	Hispanic	Students of Color
PSAT 9	23.3%	8.8%	23.5%	4.2%	*	22.4%	22.5%
PSAT 10	10.5%	3.1%	9.4%	*	*	9.8%	10.4%
SAT	8.3%	3.8%	9.0%	*	*	7.7%	8.5%
Combined	14.6%	5.5%	14.4%	1.8%	5.3%	13.9%	14.3%

**Cannot report due to low n count concerns and personally identifiable information*

Considerations for Specific School Models and Plan Types

Federal Identification

The federal Every Student Succeeds Act (ESSA) draws more focused attention to the performance of specific historically underserved student populations, including students with disabilities [in Colorado, students with an individualized education program (IEP], English learners, economically disadvantaged students (in Colorado, students who qualified for free or reduced-price meals), and students from major racial/ethnic groups. Comprehensive, Targeted, and Additional Targeted Support and Improvement identifications must complete a comprehensive needs assessment (e.g., data analysis of the UIP). The basis for the identifications includes the use of aggregation of three years of state data. Thus, identified schools may be required to analyze disaggregated groups in their UIP that may be reportable when aggregated over three years, but not one or two years. Utilize the school profiles created by CDE's ESEA team and recommendations in this guidance to complete these analyses. Most of the presentation of this in the public UIP can now be met through assurances.

Alternative Education Campuses

Alternative Education Campuses (AECs) may not have sufficiently high student participation in CMAS, PSAT/SAT, WIDA ACCESS or COALT to receive reportable results on the AEC SPF. Supplemental measures are thus collected, aggregated and analyzed to produce the AEC SPF. As AECs serve a diverse population, the specific needs of disaggregated groups should also be analyzed and responded to within the UIP. See below two context-specific considerations:

- Some AECs are organized around a population focus (e.g, a student with a learning disability, English language acquisition). In these scenarios, schools should be careful not to neglect other student populations (e.g. gifted students) as they identify improvement strategies.
- Attendance, behavioral data and course completion may no longer be part of an early warning system at an AEC, where a significant number of students may have low attendance, high behavioral incidence and are behind in course completion. The collection and analysis of this data may still be valuable to track progress in implementing interventions and for target setting.

READ Act

All schools serving students in grades K-3 and with students identified with a Significant Reading Deficiency are expected to analyze READ assessments in grades K-3 to determine trends within and across grade levels and include targets that specifically address K-3 literacy development as it relates to READ assessments. The use of percentages and cross year aggregation is recommended.

Example: Approach to reporting the results of the READ Act assessment over multiple years:

- Percentage of students at each grade level (K-3) meeting or exceeding grade level expectations
- Percentage of students at each grade level (k-3) scoring below grade level expectations
- Percentage of students at each grade level (K-3) identified as having a significant reading deficiency

If the count is too low to report grade level data, READ data can be included as a K-3 group, following the same criteria outlined above. Schools may also consider including overall trend information for individual measures (e.g., Acadience Reading). This can help identify areas of focus for systems improvement.

Schools may also consider including additional trend data that describes specific strengths and challenges within foundational skills (e.g. phonemic awareness, phonics, vocabulary). This level of analysis will aid in identification and planning targeted strategies to continue closing gaps in early literacy.

Example: Percentage of Students Meeting or Exceeding Expectations in Phonological Awareness

Acadience Reading: Phoneme Segmentation Fluency	2019-2020	2020-2021	2021-2022
Kindergarten	50%	55%	60%
1st Grade	60%	70%	70%

This expectation can also primarily be met through assurances, however, these recommendations may be helpful for schools digging deeply into early literacy needs.

Appendix: Detailed Guidance

Suggestions for Common Situations or Contexts*:*

Situation or Context	Suggestion	Example or guiding questions
State CMAS, PSAT/SAT, WIDA ACCESS or COALT data is not available.	Use the DPF/SPF performance indicator areas (i.e., achievement, growth, post-secondary and workforce readiness) to focus the collection and analysis of local data. If there are gaps in the data because of small n-counts, acknowledge that in the UIP and include analysis of local data to supplement.	"Due to N-size, CMAS growth is not included in this UIP. However, growth on NWEA MAP for Reading indicates that our MGP for our 6th graders is 57."
Performance among groups or across time is similar.	Aggregate the data by group or by time. Reporting may identify data trends or patterns across more than one school year, grade level, clustered levels (e.g., primary, intermediate), school levels (elementary, middle, high), and/or by cohorts depending on the size of the group.	"For the past three years, the 21 students in grades 4-5 have had lower student growth percentiles for MAPs math than other students within the school, and below the typical level of 35."
Aggregation does not adequately provide numbers that are large enough yield representative or meaningful results.	Individual student-level metrics (e.g., student growth percentiles) may provide more accurate and actionable data about school and district performance than summary metrics. The school/district may perform this student-level analysis internally, and then describe the analysis and findings in the UIP without sharing specific numbers and percentages to avoid identifying students.	"We analyzed math data for individual students across our K-12 school and noted that in the majority of cases, students who were proficient in math in 3rd grade were no longer proficient by the time they got to 8th grade."
State or local assessment data doesn't yield clear trends for analysis.	Consider using non-assessment data to supplement state and/or local assessment data to get a clear picture of the group of students in question. E.g., attendance, behavioral interventions, and course performance can all add nuance to the overall performance and needs of a group of students.	"Attendance records show that students with IEPs are more likely than their peers to miss daily instructional delivery and class activities."