

USING A MEASUREMENT SYSTEM

to Strengthen Student Success Reforms

COMPLETE COLLEGE AMERICA

APRIL 2023



Guidebook and Tools for
Data Management and the
Postsecondary Data Partnership

COMPLETE COLLEGE AMERICA

Complete College America (CCA) builds movements for scaled change and transforms institutions through data-driven policies, student-centered perspectives, and equity-driven practices. Since its founding in 2009, CCA has connected a national network of forward-thinking state and higher education leaders and introduced bold initiatives that help states and institutions confront inequities; close institutional performance gaps; and increase college completion rates, especially for historically excluded students.

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CONTENTS

How to Use This Guidebook and Tools _____	2
Why This Guidebook Focuses on the Postsecondary Data Partnership (PDP)_____	2
Clarifying Language_____	4
Why Measurement Systems Are Essential for Reform _____	5
Completion and Enrollment Data Demonstrate the Need for Improvement_____	5
Figure 1: Institutional Performance Gaps Persist at Two- and Four-Year Institutions_____	6
Four Cornerstones of Strong Measurement Systems _____	8
Elements of a Measurement System_____	8
Cornerstone #1: Measure What Matters _____	10
Quantitative and Qualitative Data_____	10
Figure 2: Three Connected Levels of Metrics_____	11
Identify Potential KPIs_____	12
Focus on 6 to 10 KPIs_____	13
Figure 3: Areas of Emphasis for KPIs_____	13
Do Not Worry About Data Availability_____	13
Contextualize, Categorize, Disaggregate, and Supplement Your Metrics_____	14
Figure 4: Contextualized Metrics_____	14
Figure 5: Examples of Common Metrics for Each Stage of Education_____	15
Figure 6: Standard and Additional Disaggregations_____	17
Instructions for the <i>Using a Measurement System</i> Excel Workbook _____	19
Tool 1.1: Identify KPIs_____	20
Tool 1.2: Identify Leading Indicators, Real-Time Metrics, Strategies, and Disaggregations_____	21
Cornerstone #2: Source the Data Your College Needs _____	23
Sourcing Data for Disaggregations_____	27
Figure 7: Sources of Data for Disaggregations_____	27
Democratizing Data Access_____	28
Standardizing Data Methodology and Data Reports_____	29
Safeguarding Privacy While Providing Access to Data_____	30
Tool 2: Identify Data Sources for KPIs, Leading Indicators, and Real-Time Metrics_____	31
Cornerstone #3: Use the National Student Clearinghouse PDP _____	33
Figure 8: PDP Metrics, Attributes, and Benchmarks_____	34
Submitting Data to the PDP_____	35
Figure 9: Process of Submitting Data to the PDP_____	36
Troubleshooting Data for Submission_____	36
PDP Definitions of Metrics_____	37
Tool 3: Align With PDP Metrics and Benchmarks_____	39
Cornerstone #4: Have Regular Conversations About Data _____	40
Have Data Conversations at All Levels_____	40
Set the Ground Rules for Discussing Data_____	42
Avoid Common Pitfalls_____	44
Tool 4: Plan Data Conversations at All Levels_____	46
The Ongoing Process of Using Data Effectively _____	47
Appendix: Metrics Associated with CCA Strategies _____	48
CCA Pillars and Strategies_____	48
Figure 10: Using Metrics Related to Proven Improvement Strategies_____	50

HOW TO USE This Guidebook and Tools



Measurement systems give colleges a structure for collecting, sharing, and acting on data. Complete College America (CCA) created this guidebook to help faculty, staff, college leadership, and policymakers understand and use measurement systems—and specifically use data to improve completion rates, close institutional performance gaps, and facilitate economic mobility for historically excluded students.

This guidebook and its tools can help your college harness data so you can:

- ▶ Know whether your college is meeting its student success mission;
- ▶ Identify institutional performance gaps;

- ▶ Develop and assess the impact of specific strategies, innovative projects, and ongoing operations;
- ▶ Use data to inform decisionmaking; and
- ▶ Share information—and the power to make data-informed decisions—with everyone at your college so everyone can play a role in improvement efforts.

The guidebook and accompanying tools are intended for a college team, but anyone in higher education who wants to use data to drive their decisionmaking can benefit from using them. These resources are relevant to college systems and, depending on a state's setup, state agencies.

Why This Guidebook Focuses on the Postsecondary Data Partnership (PDP)

This guidebook emphasizes identifying metrics, sourcing data, and using the right tools to promote your college's student success agenda. It directly addresses individual colleges' measurement systems, but the same principles apply to postsecondary systems and states.

Although this document can and should be used in tandem with thinking on any data reporting tool, it prioritizes the National Student Clearinghouse's PDP.

The PDP is a nationally available data tool that is provided at nominal cost. It embeds key completion metrics into dashboards with built-in benchmarking, giving colleges quick access to their own data as well as the ability to compare their own performance with other colleges across the country. It represents

the culmination of a national effort to develop a standardized data dictionary for key completion metrics and their predictors.

CCA has been a leader in promoting data-based decisionmaking at colleges and creating common metrics. For the past 10 years, CCA has worked with the Institute for Higher Education Policy, the National Governors Association, the National Center for Higher Education Management Systems, and others to increase consistency and commonality in benchmarking data across states, colleges, and universities. These common metrics—embedded in the PDP—have helped policymakers and the public see how colleges are helping students succeed, and they have created a foundation for policy and practice recommendations.

Ideally, your college will appoint a team to review this guidebook and complete the tools. Because this work is geared toward systems change, the team should be led by a senior administrator—the college president, chancellor, or vice president of student success. The team’s membership should include faculty members, advisers and other staff members, and students. And of course, institutional research staff are a critical part of the team. In addition to setting up the system, institutional research staff can help the college leadership, faculty, and staff become fluent in the measurement system and learn how to use the metrics that are most important for their work. The team should be diverse in terms of both demographics and life experiences.

Once your team is in place, plan to meet at least weekly, with team members reading parts of the guidebook between meetings and then working through the tools together. This work will take time, but most colleges should be able to make significant progress in about six weeks.

Your team will find it easiest to use an Excel spreadsheet or Google sheet for the tools in this guidebook. CCA created the *Using a Measurement System* Excel workbook as a companion for the guidebook. It includes a sheet for each tool. As you complete each tool, your responses will automatically populate future tools and a master tab that you can use as the basis of your college’s measurement system. Download the *Using a Measurement System* Excel workbook at <https://completecollege.org/resource/UsingAMeasurementSystem> and read “Instructions for Using a Measurement System Excel Workbook” on page 19.

As you work through this guidebook and the tools, always remember that measurement systems give colleges tools for improvement, not punishment. As you present your measurement system to various stakeholders, consider whether department chairs and other leaders need training on how to use and discuss data with their teams. The training would focus on using data to inform and generate discussion about strategies for improvement.

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Clarifying Language

In discussing the people affected by racial inequity in education, CCA aims to choose words that underscore essential ideas, acknowledge the people affected by inequity, and are clear and consistent across our communications.

We use the following terms in this report:

BILPOC (Black, Indigenous, Latinx, People of Color).

CCA chose this term in the context of its work on educational attainment. Using CCA's metric of college completion, the data shows consistent institutional performance gaps for Black, Indigenous, and Latinx students.

Historically excluded/historically under-represented/historically underserved.

All of these terms refer to groups that have been denied access to resources (e.g., education and health care) as a result of institutional racism. In the past, CCA used the word *marginalized* in this context. CCA uses the term *historically excluded* now because it most accurately describes the cause of institutional performance gaps.

The term *racially minoritized* underscores the fact that *minority groups* is a designation created by those in power so certain groups could be marginalized or excluded.

Institutional performance gaps. These are gaps among student groups in completion rates and other outcomes. This term puts the focus on the institutional barriers that are the root causes of inequities, whereas the term *equity gaps* implies that students are the cause of (and/or are responsible for changing) gaps in performance and completion.

Students from under-resourced families. In college data, Pell Grant status is a proxy for family income, which typically correlates with completion rates. CCA says *students from under-resourced families* instead of *low-income students* or *students from low-income families*. We use this term because we recognize that family income also correlates with access to food, health care, technology, and other resources that affect students' ability to succeed.



Why Measurement Systems are ESSENTIAL for Reform



Setting clear goals and measuring progress toward them is at the heart of improvement. A college cannot fulfill its mission or effectively serve its students without regularly evaluating its efforts.

Measurement systems are the way colleges track their progress on their most important work. Colleges use measurement systems to set long-term goals, such as improving on-time graduation rates and closing institutional performance gaps, as well as interim goals that lead to these long-term improvements. Colleges also connect their goals to CCA's four pillars and 18 strategies. When colleges implement these strategies with fidelity, they reach their short- and long-term goals, improving their performance and better serving their students.

Measurement systems show the results of each step of this work. They make it possible for colleges, universities, systems, and states to know if they are meeting their interim goals and ultimately increasing attainment, closing institutional performance gaps, and cultivating success for students and communities.

Completion and Enrollment Data Demonstrate the Need for Improvement

Since 2009, CCA has led an effort for colleges to improve completion rates. Today, that completion agenda is more tightly focused on serving students who have been historically excluded, including BILPOC (Black, Indigenous, Latinx, People of Color) and students from under-resourced families.

CCA Pillars and Strategies

PURPOSE

Aligning the college experience to each student's goals for the future

- First-Year Experience
- Career Exploration
- Academic & Career Alignment
- Adult Learner Engagement

STRUCTURE

Building course road maps that make the path to a degree or valued workplace credential clear

- Math Pathways
- Meta Majors
- Academic Maps & Milestones
- Smart Schedules
- Stackable Certificates & Credentials

MOMENTUM

Designing multiple avenues for students to get started, earn credits faster, and stay on track to graduate

- Credit for Competency
- Multiple Measures
- Corequisite Support
- Dual Enrollment
- 15 to Finish/Stay on Track

SUPPORT

Addressing student needs and removing barriers to academic success

- Active Academic Support
- Proactive Advising
- 360° Coaching
- Student Basic Needs Support

See the Appendix on page 48 for more information about the CCA strategies.

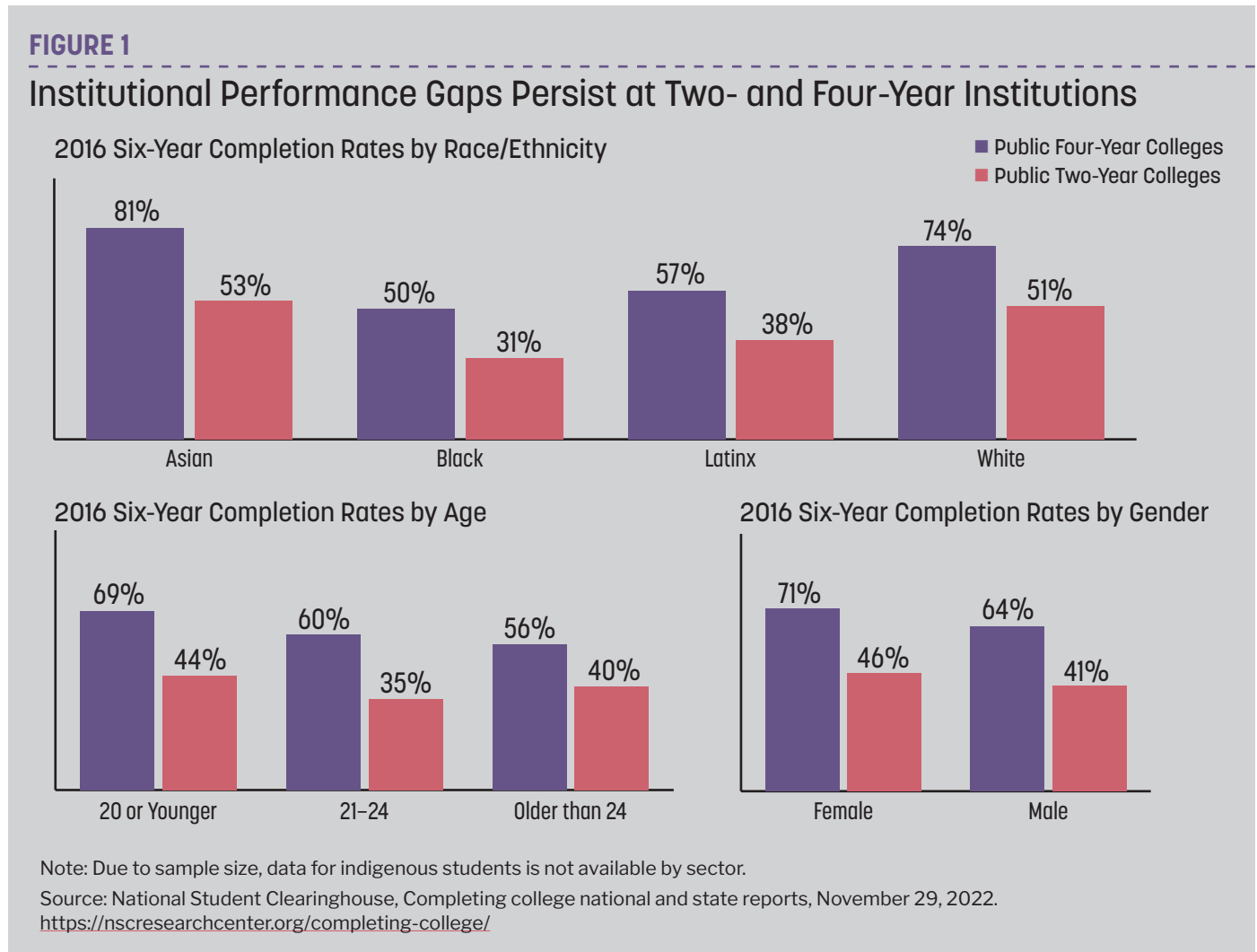
Even as the field has seen progress in overall graduation rates, institutional performance gaps persist at both two- and four-year institutions (Figure 1). These gaps are evident when colleges look at outcomes by race, household income, first-generation status, geography, gender, and other factors.

College completion and enrollment are two high-level metrics colleges track. Changes (and sometimes lack of change) in these metrics are examples of how data is essential for reform.

Institutional performance gaps limit opportunities for both students and communities. Since the COVID-19 pandemic, workers without a college degree have

experienced far worse unemployment rates than those with a credential. Indeed, 11.5 million of the 11.6 million jobs created since the Great Recession ended (in 2009) went to individuals with at least some college experience.¹

In addition, institutional performance gaps have helped create a trillion-dollar-plus student loan crisis. Individuals who take out student loans but do not receive credentials have trouble repaying those loans. While the overall default rate for student loans is 18 percent, that figure is much higher—roughly 40 percent overall and 55 percent for Black students—for borrowers who did not receive credentials.²



1 Georgetown University Center on Education and the Workforce. (2016). America's divided recovery: College haves and have-nots. <https://cew.georgetown.edu/cew-reports/americas-divided-recovery/>

2 Center for American Progress. (2019). The continued student loan crisis for black borrowers. <https://www.americanprogress.org/article/continued-student-loan-crisis-black-borrowers/>



The pandemic has exacerbated long-standing challenges related to both enrollment and completion, particularly for historically excluded students. Many students face food and housing insecurity as well as challenges accessing physical and mental health care, transportation, child care, and technology.

As a result, in the past few years, colleges across the country have faced enrollment declines, which affect students and communities and have budgetary implications for institutions. Community colleges—the institutions that are most likely to serve historically excluded students—had steeper enrollment declines than other sectors. From fall 2019 to fall 2021, public four-year enrollment fell 4 percent, while two-year enrollment dropped nearly 15 percent. The drop-off in college enrollment was particularly steep for Black men at public two-year colleges (24 percent) and for all Indigenous undergraduates (15 percent).³

Thus, while completion rates may be ticking up, colleges must pay attention to who is completing and who is not, who is enrolling and who is not, and who is

transitioning into jobs and who is not. Measurement systems are the key to understanding these and other data points—and using them to close institutional performance gaps, better serve historically excluded students, ensure that employers have well-prepared employees, and ultimately improve local and regional economies.

Reversing declining enrollment is crucial for the sustainability and success of postsecondary education institutions, and using metrics that lead to college enrollment and college completion is the essential first step in achieving this goal. By monitoring and regularly discussing metrics around enrollment, college completion, and the predictors of college completion, colleges can identify trends, measure the effectiveness of their marketing and recruitment strategies, and make data-driven decisions to address declining enrollment. Good management through good measurement helps colleges set goals, track progress, and allocate resources effectively.

³ National Student Clearinghouse, COVID-19: Stay informed with the latest enrollment information, October 20, 2022. <https://nscresearchcenter.org/stay-informed/>



Four Cornerstones of Strong Measurement Systems

This guidebook and its tools explain measurement systems in detail and give colleges a step-by-step process for setting up and using their own measurement systems. (See “How to Use This Guidebook and Tools” on page 2 for recommendations about using the tools.)

The work of setting up and using a measurement system is grounded in four cornerstones. This guidebook examines each of these cornerstones in

detail, and the tools allow you to begin using them immediately. The cornerstones are the foundation of establishing a culture of data-driven decisionmaking. They help colleges use measurement systems to choose effective reforms, maximize the reforms’ impact, and close institutional performance gaps. (For details about CCA’s reform strategies and the metrics related to them, see the Appendix on page 48.)


Elements of a Measurement System

Measurement systems encompass all of the elements colleges use to evaluate progress: metrics (what colleges choose to assess), data (the raw content that populates metrics and is used for evaluation), and statistics and other descriptions that contextualize the metrics and data, showing the reality of what is happening at the college. For example:

- ▶ **Metric:** Percentage of first-year students passing gateway English.
- ▶ **Data:** The raw numbers that show pass rates for each student who attempted gateway English. This student-level data can be viewed in multiple ways, such as by race and ethnicity, instructor, and so on.


- ▶ **Statistics:** A statement or chart that presents the data-populated metric in context. For example, “In 2021, 72 percent of first-year students at Sample College passed gateway English.” These presentations can also provide more detail around metrics, such as changes over time, reasons for the change, and additional views of the data. For example, “Since 2019, when

Sample College replaced all prerequisite developmental education with corequisite support, the percentage of first-year students passing gateway English has increased 10 percentage points. The greatest improvements have been seen for Black students (an increase from 42 percent to 70 percent) and Latinx students (an increase from 45 percent to 68 percent).”


 **Cornerstone #1: Measure what matters.** Data-driven decisionmaking begins with choosing the right metrics so colleges measure the right things.


Metrics should reflect your college's mission and measure progress on reform efforts that are aligned to that mission and grounded in student-first thinking. Too often, colleges' policies and procedures—including how classes are scheduled, which classes are even offered, and the setting and modality for different student support mechanisms—grow out of institution-first thinking and are disconnected from student success. As a result, many of these practices put operational burdens—such as academic planning and paying to graduate—on the student. If your college's metrics focus on putting students first, policy- and procedure-based decisions based on your data will do the same.

Whether your college is developing new metrics or reviewing existing ones, measure what matters. In addition, focus on what you would like to know rather than on the data you currently have. Many colleges decide what to measure based on the data they have on hand. Instead, think about what you would measure in an ideal world, if all data were available to you. With that starting point, you are more likely to identify measures that meet the moment—and your mission. If you know what data you need, you will be able to find it.

 **Cornerstone #2: Source the data your college needs.** Once you know what you will measure, find the data you need. This approach requires being creative, using common definitions, empowering the institutional research function, and selecting the right software tools for your organization. It also depends on data democratization, which involves making data widely accessible so faculty and staff can engage in data-driven decisionmaking.

Everyone needs to be able to measure the effectiveness of their own work and see how that self-assessment fits into related, broader metrics and targets. When all faculty and staff have data, along with commonly defined measures in a single data dictionary, evidence-driven decisionmaking can happen at all levels of the college, from the classroom to the president's and chancellor's offices.

 **Cornerstone #3: Use the National Student Clearinghouse PDP.** While there are several ways to report key data, this guidebook provides specific detail around the PDP because of its national prominence, nominal cost, and two unique attributes: allowing colleges to monitor metrics related to CCA's student reform agenda and helping colleges benchmark metrics against other institutions by type. The PDP is especially useful for institutions that are tracking a consistent set of predictors of college completion, together, for the first time; institutions that are seeking to quickly, democratically report on predictors of college completion they already track; and institutions that are interested in comparing their performance on predictors of college completion across their state or type.

 **Cornerstone #4: Have regular conversations about data.** Colleges that do not talk about data cannot use it effectively. Measuring what matters, using the right data, and using the best reporting system are only the beginning. To use data to improve students' reality, the right people must have the right conversations at the right times about the right data. If you want data to drive decisions that increase performance on the metrics that are most important to your college, then stakeholders must have regular conversations about key information as it arrives.

Thus, advisers, deans, project managers, presidents, and chancellors should hold check-ins that embrace a quantitative component to assessing progress along the metrics identified as important by their college. This approach also requires trust. In particular, colleges must commit to never using data punitively. When colleges use data wisely, the color red on a scorecard is not immediately interpreted as “bad”; instead, it is seen as a signal for attention and possibly intervention. And the intervention(s) should be the topic of discussion.



Measure What Matters

The first element of a measurement system is metrics, which are the specific elements colleges choose to assess. What colleges choose to measure and how they measure it determines how they view students' lived realities. Understanding the typical student experience—the reality of students' daily lives and interactions with the college—is essential so colleges' decisions help more students meet their goals, which typically are completing courses and earning credentials.

Quantitative analysis has tremendous value for mission-driven work because it can help identify reforms that lead to results. Using data to make decisions is not just a technocratic approach to solving problems. It is a democratic approach. Numbers show us reality. They put all students on the same footing and help presidents, faculty, and all other college personnel understand every student's experience, not just the experiences of the students they meet. Moreover, disaggregating the numbers by race, ethnicity, and household income reveals critical institutional performance gaps. Stakeholders must see the data so they can understand the specific reality of inequity on their campus—and be inspired to take action to close institutional performance gaps.

To measure what matters, colleges should establish their metrics. Colleges should begin with institution-level metrics, which include key performance indicators (KPIs), leading indicators, and real-time metrics.



KPIs are the top-level metrics. These are big-picture data points—such as degree completion rates—that the college has identified as the key guideposts of success. The Board of Trustees will review these measures at each meeting, and everyone at the college should be aware of them. KPIs typically take multiple semesters or years to change. Colleges should follow 6 to 10 KPIs, and all other metrics should relate to these KPIs.



Leading indicators are metrics that change more frequently (e.g., from semester to semester) and roll up into the KPIs. Leading indicators can inform semester-by-semester activities. Leadership, as well as many faculty and staff, can use these metrics to regularly assess and improve service to students. For a completion rate KPI, leading indicators might be retention rates and English and math pass rates in a student's first year.

Quantitative and Qualitative Data

Colleges may supplement their quantitative analysis with qualitative data, such as responses in student focus groups and conversations with students that provide insights into teaching, learning, and student persistence. Such qualitative information gives stakeholders valuable context, reminds them that each data point is a person, and helps them see the impact of their actions. At the same time, while qualitative data captures useful feedback, it elevates the voices of a small set of students. For this reason, qualitative and quantitative data are complementary. Quantitative data shows the typical student experience, and qualitative data tells the human story behind the numbers.



Real-time metrics are metrics that roll up into leading indicators and then KPIs. They provide a continuous and current snapshot of specific performance data and might change daily, weekly, or monthly. Because they can be updated frequently, they are used to monitor ongoing performance and make immediate adjustments. Real-time metrics for retention rates might include daily reviews of re-enrollment patterns during a registration cycle; real-time metrics for English and math pass rates might include student grades at various points in the semester.

In addition to institution-level metrics, each academic and staff department should have its own real-time metrics, and each of these metrics should roll up into an institutional KPI. Continuing with the completion rate KPI, advisers might have metrics such as the percentage of students who have a semester-by-semester plan or the percentage of their advisees who have registered for the next semester. All faculty, student services staff, and administrators should have real-time metrics that they regularly review.

Figure 2 shows examples of KPIs with related leading indicators and real-time metrics.

FIGURE 2

Three Connected Levels of Metrics

Because KPIs change slowly, colleges need additional metrics—leading indicators and real-time metrics—that can be tracked more frequently and provide insight into expected progress on the KPIs.



KPI: Median earnings after graduation



Leading Indicator: Graduation rates



Real-Time Metrics:

Week-to-week re-enrollment during a registration cycle
Monitoring students who will graduate at the end of the semester if they pass all of their courses



KPI: Degree completion rates



Leading Indicators:

Retention rates
English and math pass rates in a student's first year



Real-Time Metrics:

Student grades at various points in the semester
Spring re-enrollment data





Identify Potential KPIs

KPIs show how well your college is serving students according to the metrics you deem most important. These KPIs should reflect your college's mission, values, and top priorities.

The leadership team reviewing potential KPIs should include, at a minimum, faculty, advisers and other professional staff, and student representatives, in addition to managerial and executive staff. Bringing these parties to the table is not a mere shared governance gesture; these are the parties that will be most affected by these measures, both in terms of services emphasized and additional metrics that derive from the KPIs.

Your college, university, system, or state likely has some KPIs in place already. CCA recommends that you periodically revisit them and determine if they need to be changed or refined. As you do this work, review and consider what other stakeholders have defined as the most critical measures of student success.

Colleges typically look at three categories of KPIs:

1. Metrics that align with your college's strategic plan.

Your college's strategic plan is the most important factor in determining metrics, and the needs outlined in your strategic plan likely overlap with the following two categories of KPIs. For example, your college, university, system, or state may have specific attainment goals, such as a commitment to have a certain number of students in the region possess credentials of economic and educational value within a specified timeframe. If your college has goals along those lines, you need to set corresponding targets for total graduates from your college; graduates from specific programs; and graduates by various demographic groups, such as race, ethnicity, and household income.

Examining your mission and what makes your college unique also may help you identify metrics, and this examination will certainly yield targets specific to your

college's context and history. As you consider different metrics, determine which should be institution-level KPIs, which should be leading indicators, and which should be real-time metrics for the college or for individual academic or staff departments.

2. Metrics derived from best practice.

While the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) provides a great deal of data, it does not cover all measures you may want to track. For example, IPEDS does not report on institutional efficiency metrics, such as cost per completion. It also does not cover other completion/graduation metrics, such as time to degree, that are included in the PDP and other tools. These more specific metrics can help you track how well your college is implementing the strategies in each of CCA's pillars. For examples of metrics, see the Appendix (page 48), which includes metrics aligned with the CCA strategies and the PDP.

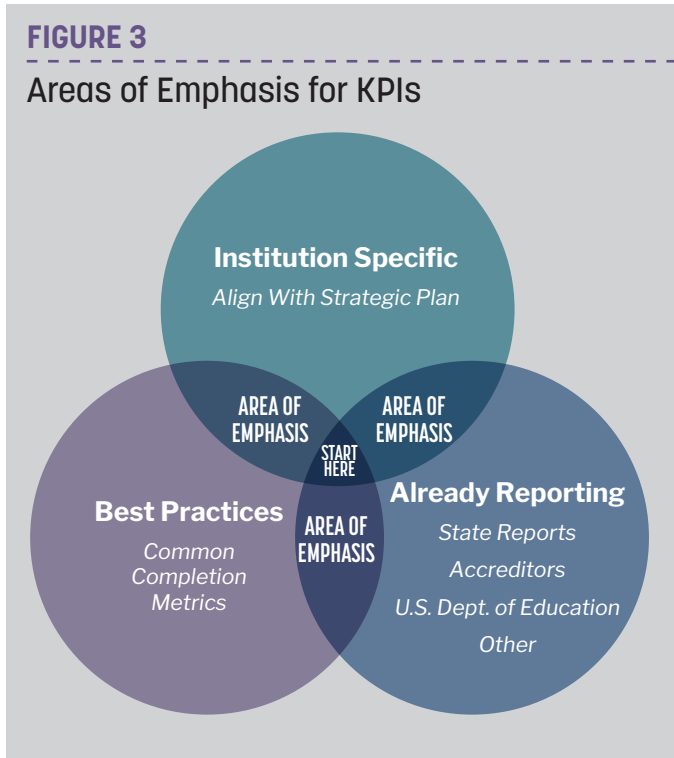
3. Metrics about your college you already make public through accreditors, the U.S. Department of Education College Scorecard, or IPEDS.

Using some metrics that your college already reports or publishes can be helpful when developing KPIs. For example, IPEDS captures graduation rates at 100 percent of expected completion time for full-time students (e.g., attainment of a two-year degree in two years or a four-year degree in four years) as well as 150 percent and 200 percent completion times. For full-time and part-time students, IPEDS also has metrics for four-, six-, and eight-year timeframes. Choosing variations of these metrics, such as different timeframes, usually does not make sense. Using standard metrics—such as those that are part of IPEDS, the PDP, or any other reporting your college is already doing—allows you to use data you already are collecting and keeps your data in alignment with other sources available to the public, the press, and accreditors. For PDP users, consider which metrics in the PDP align with KPIs for your college.

Focus on 6 to 10 KPIs

To avoid mission creep and information overload, focus on 6 to 10 KPIs. Start by identifying a broader set of KPIs, and then narrow your focus. As you discuss potential KPIs, consider which metrics sit at the intersection of two or three of the categories just discussed.

Figure 3 shows the areas of emphasis that fall at the intersections of the three categories: metrics that align with your institution’s strategic plan, metrics that derive from best practices, and metrics your college is already reporting.



Do Not Worry About Data Availability

Once you determine you know what you want to measure, you will be able to find the data you need. When you are establishing your metrics, focus only on identifying what you want to measure. If you do the reverse and consider metrics based on available data, you limit your world view to the status quo and cut off conversations about what measures matter and what student reality you will depict.

Establish your metrics first. Then turn to data availability and data integrity, which are addressed in Cornerstone #2.

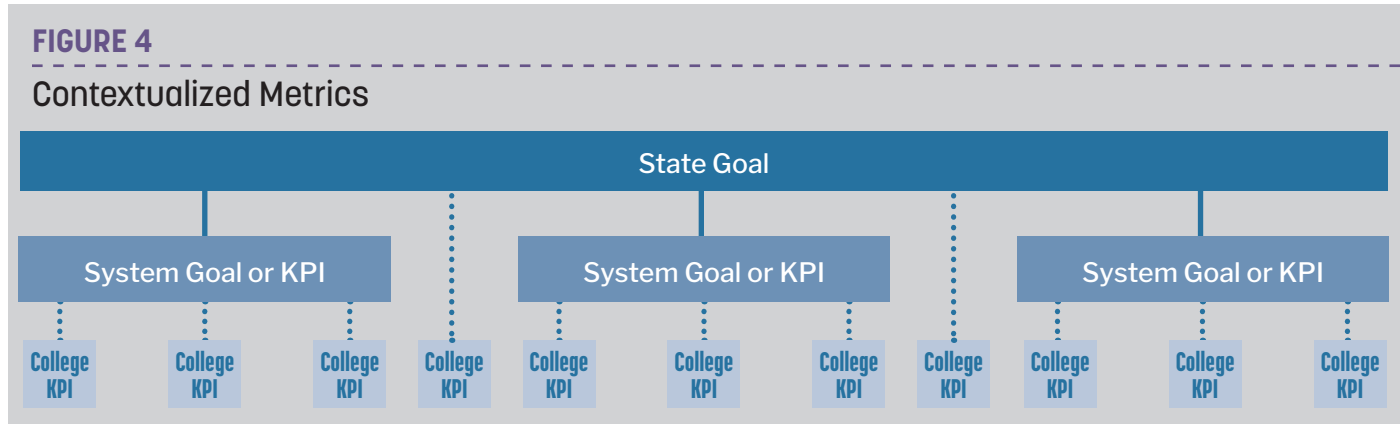
Contextualize, Categorize, Disaggregate, and Supplement Your Metrics

As noted earlier, KPIs, leading indicators, and real-time metrics are all connected. Therefore, you have to consider all of these metrics together. What does your college need to measure? Which metrics should be KPIs, and which should flow from KPIs and be treated as leading indicators or real-time metrics?

As you define your metrics, use four tactics—contextualize, categorize, disaggregate, and

supplement—to narrow your KPIs and identify their related leading indicators and real-time metrics.

Contextualize. Your college’s metrics may derive from broader goals, such as statewide goals that encompass multiple colleges. As noted earlier, statewide goals can inform system and/or college KPIs. Contextualizing your KPIs means putting them in the context of these broader goals or KPIs, as shown in Figure 4.



Categorize. Since colleges are essentially in the business of creating successful alumni, you should include metrics for each stage of students’ educational process: pre-college efforts to promote college-going behavior (access and enrollment), in-college progress toward completion, completion itself, and post-completion success. In addition, at least one or two efficiency measures that help assess financials are useful.

Figure 5 shows common metrics used to assess the college’s efforts at each stage of students’ educational process.



FIGURE 5

Examples of Common Metrics for Each Stage of Education

PRE-COLLEGE (ACCESS AND ENROLLMENT)

- ✔ Total enrollment
- ✔ Dual credit matriculating into college
- ✔ Returning adults—some college, no degree
- ✔ Bridge from GED/HiSET/ESL (General Educational Development Test, High School Equivalency Test, English as a Second Language)

PROGRESS TOWARD COMPLETION

- ✔ Fall-to-fall retention
- ✔ English/math pass rates in first year

COLLEGE COMPLETION

- ✔ Graduation rate
- ✔ Time to degree
- ✔ Total graduates
- ✔ Credits to degree

POST-COMPLETION SUCCESS

- ✔ Median earnings
- ✔ Transfer, post-completion
- ✔ Percentage employed in area of education
- ✔ Alumni survey feedback score

EFFICIENCY

- ✔ Average class size
- ✔ Cost per graduate
- ✔ Cost per enrollment
- ✔ Change in revenue from retention

Disaggregate. To improve student success and meet targets, colleges must identify and discuss variations in outcomes. Critical information comes from disaggregating data by various student groups, program cohorts, and other factors.

The importance of using disaggregated data cannot be overstated. It is the foundation of addressing equity and of data-driven management. If the data shows differences in outcomes among different student groups—demographic, academic, and other types of groupings—then your college has an institutional performance gap to note and address.

For example, if your college’s completion rate is lower than you want it to be, look for variations by race and ethnicity, zip codes, Pell Grant status, and other factors. If your pass rate for college math is lower than you want it to be, look at differences in outcomes among instructors. Dig into the data, find the variations, and then discuss ways to close the gaps.

Perhaps your college needs programs that address the specific needs of Black males or better efforts to introduce science, technology, engineering, and math (STEM) options to female students. Maybe your math instructors with the most success can share their approaches with other instructors. Perhaps your college needs a more robust emergency aid fund for students who have unexpected financial needs.

The goal is to disaggregate data in a variety of ways to identify institutional performance gaps, which are any variations in outcomes among different student groups. Then identify and address the underlying causes of these variations.

CCA uses two categories of disaggregations—standard disaggregations and additional disaggregations—which are explained in Figure 6.



**FIGURE 6****Standard and Additional Disaggregations****STANDARD DISAGGREGATIONS**

Colleges should use standard disaggregations for every metric. They are:

- ✓ Race and ethnicity;
- ✓ Pell Grant status;
- ✓ Gender;
- ✓ Age; and
- ✓ Enrollment status (full time/part time).

ADDITIONAL DISAGGREGATIONS

Colleges also should identify additional disaggregations that are specific to each metric. Most metrics have at least one disaggregation that is typically used to better understand it. For example, enrollment is frequently disaggregated by new students versus returning students or dual enrollment versus college going only.

The Appendix on page 48 provides examples of additional disaggregations for about three dozen metrics. These additional disaggregations include, for example:

- ✓ Academic factors such as major and/or the pass rates of subsequent courses in the credit-bearing sequence.
- ✓ Academic readiness, which is important for reforms to developmental education.
- ✓ Assigned instructors, advisers, and tutors so each of these individuals can measure their own performance and see how it fits in with broader, institution-wide measures of success. This type of disaggregation is especially important as you democratize data access and make it relevant to all parties (see page 28).
- ✓ Cohort tracking associated with specific interventions.
- ✓ Geographic classification (urban/suburban/rural). This disaggregation is particularly useful for systems and states.
- ✓ Support factors, such as use of tutors.

Supplement. After you identify your college’s 6 to 10 KPIs, supplement them with leading indicators and real-time metrics. For example, you likely need additional metrics to set goals for and to assess your college’s academic quality and specific student services. You also may identify additional metrics that provide context around your KPIs. For instance, for a completion KPI, a college might choose to monitor re-enrollment patterns for students in tiers, based on their proximity to college completion (e.g., 75–100 percent of coursework complete, inclusive of courses in progress). Looking closely at these supplemental data points and disaggregating them will enrich your

understanding of the student experience and may help you identify necessary reforms.

Your college reports hundreds of measures to IPEDS throughout the year, most of which are descriptive and helpful in their own way. When selecting KPIs, choose which measures resonate with your goals for student success. These are the ones your student success reforms—which should align with CCA pillars and strategies—will move. (See the Appendix on page 48 for details about CCA strategies.)



INSTRUCTIONS

for the *Using a Measurement System* Excel Workbook



CCA created the *Using a Measurement System* Excel workbook as a companion for this guidebook. It is organized into six tabs, with one tab for each tool and a final tab named “Master.” As you complete a tool, the next tabs will automatically populate with relevant information. This automatically populated content appears in blue.

The master tab collects all the responses from all tools except Tool 4 (“Plan Data Conversations at All Levels”), which should be shared widely throughout the college.

The master tab allows you to see all of your responses in one place. Use it to see the full plan for your measurement system, track your progress, identify patterns, and gain insights that may not be apparent when looking at individual tools in isolation.

CCA encourages you to view this workbook as a living document. It is designed to be flexible, adaptable, and regularly updated as circumstances change. Various sections of this document will be subject to updates and changes over time. For instance, you may need to revisit your KPIs, incorporate changes in data availability, or modify your stakeholder contacts.

Other sections, such as participants in data conversations, also may change over time. Update these and other elements as needed to reflect the current state of practice.

Using the workbook:

- ▶ This guidebook provides directions for each tool. The directions appear at the end of the Cornerstone related to the tool. Please read and follow these directions for each tool.
- ▶ Do not change text that appears in blue. Blue text has been automatically populated using content from a previous tool or pre-populated with standard responses. To change text, go back to the tab where you originally entered the text. The directions for each tool provide reminders about where you can update automatically populated text.
- ▶ In some tools, there may be cells that you do not use. Do not delete cells that you are not using as that may affect the Excel formulas. Instead, leave the placeholder text as it is so you can add additional information in the future.
- ▶ If you do not replace placeholder text—for example, “KPI 10” in Tool 1.1 or “Leading Indicator 5” in Tool 1.2—the placeholder text will appear when content automatically populates. If you do not add text to a cell that is blank, a zero (0) will appear when content automatically populates.
- ▶ Please do not change the names of the tabs. Doing so may affect the Excel formulas.

Download the Excel workbook at <https://completecollege.org/resource/UsingAMeasurementSystemExcelWorkbook>.



TOOL 1.1

Identify KPIs

A	B
Tool 1.1: Identify KPIs	
Brainstorm KPIs	6 to 10 KPIs
	KPI 1
	KPI 2
	KPI 3
	KPI 4
	KPI 5
	KPI 6
	KPI 7
	KPI 8
	KPI 9
	KPI 10



It is best to use an Excel spreadsheet or Google sheet for all of the Tools in this guidebook. We recommend using the *Using a Measurement System* Excel workbook created as a companion for this guidebook. It includes a sheet for each Tool in the guidebook. See page 19 for guidance on using the workbook.

Download the *Using a Measurement System* Excel workbook at <https://bit.ly/3nkrchp>.

In this tool, your college team will identify 6 to 10 KPIs for your college. Use the “Tool 1.1” sheet in the *Using a Measurement System* Excel workbook.

Use Cornerstone #1 and the Appendix (page 48) to help you complete this tool.

Directions

1. Working as a team, brainstorm KPIs for your college. Write the team’s ideas in Column A (Brainstorm KPIs). Make sure all of your KPIs are student focused, and do not base your ideas on what data is currently available.
2. After you finish brainstorming possible KPIs, discuss the list as a group and narrow it down to 6 to 10 KPIs.
3. List your college’s 6 to 10 KPIs in Column B (6 to 10 KPIs). Write one KPI per row. If you have prioritized the KPIs, put the highest priority ones first. You will use these KPIs for the remaining exercises.
4. If you have fewer than 10 KPIs, leave the placeholder text in the remaining cells as it is. If you want to add more KPIs in the future, you will have the space to do so. (Do not delete cells that you are not using as that may affect the Excel formulas.)



TOOL 1.2

Identify Leading Indicators, Real-Time Metrics, Strategies, and Disaggregations

A	B	C	D	E	F
Tool 1.2: Identify Leading Indicators, Real-Time Metrics, Strategies, and Disaggregations					
KPIs	Leading Indicators	Real-Time Metrics	Student Success Strategies	Standard Disaggregations	Additional Disaggregations
KPI 1	Leading Indicator 1	Metric 1	Student Success Strategy 1	Race/Ethnicity, Pell Status, Gender, Age, Full-Time/Part-Time	
		Metric 2	Student Success Strategy 2		
		Metric 3	Student Success Strategy 3		
		Metric 4	Student Success Strategy 4		

In this tool, your college team will continue working with the KPIs you identified in Tool 1.1. Building on these KPIs, you will identify leading indicators and real-time metrics. You then will align these metrics with improvement strategies and identify relevant disaggregations. Use the “Tool 1.2” sheet in the *Using a Measurement System* Excel workbook.

Use Cornerstone #1 and the Appendix (page 48) to help you complete this tool.

Directions

1. Text in Column A (KPIs) appears in blue because it has been automatically populated with your KPIs from Tool 1.1. If you need to modify your KPIs, go back to Tool 1.1 and update them in Column B.



It is best to use an Excel spreadsheet or Google sheet for all of the Tools in this guidebook. We recommend using the *Using a Measurement System* Excel workbook created as a companion for this guidebook. It includes a sheet for each Tool in the guidebook. See page 19 for guidance on using the workbook.

Download the *Using a Measurement System* Excel workbook at <https://bit.ly/3nkrchp>.



Measure What Matters

2. Use Column B (Leading Indicators) to list up to five leading indicators for each KPI. Write one leading indicator per cell. If you have fewer than five leading indicators, leave the placeholder text in the remaining cells as it is. If you want to add more leading indicators in the future, you will have the space to do so. (Do not delete cells that you are not using as that may affect the Excel formulas.)

You do not need to have the same number of leading indicators for each KPI. As with the KPIs, make sure all of your leading indicators are student focused, and do not base your ideas on what data currently is available.

Remember that leading indicators change more frequently than KPIs (e.g., from semester to semester) and roll up into the KPIs. They might include measures such as retention rates or English/math pass rates in a student's first year, which can provide insight into the likelihood of future success or challenges.

3. Use Column C (Real-Time Metrics) to list up to four real-time metrics for each leading indicator. If you have fewer than four real-time metrics, leave the placeholder text in the remaining cells as it is. If you want to add more real-time metrics in the future, you will have the space to do so. (Do not delete cells that you are not using as that may affect the Excel formulas.)

You do not need to have the same number of real-time metrics for each leading indicator. Make sure all of your leading indicators are student focused, and do not base your ideas on what data currently is available.

Remember that real-time metrics provide a continuous and current snapshot of specific performance data. They are updated frequently and are used to monitor ongoing performance and make immediate adjustments if necessary.

4. In column D (Student Success Strategies), list up to four student success strategies your college is using or will use to move the needle on the KPI, leading indicators, and real-time metrics in each row. Include all relevant strategies. If you have fewer than four student success strategies, leave the placeholder text in the remaining cells as it is. If you want to add more student success strategies in the future, you will have the space to do so. (Do not delete cells that you are not using as that may affect the Excel formulas.)
5. Column E (Standard Disaggregations) is pre-populated with the disaggregations you should use for every KPI, leading indicator, and real-time metric: race/ethnicity, Pell Grant status, gender, age, and enrollment status (full time/part time).
6. Use Column F (Additional Disaggregations) to list additional disaggregations that are specific to each KPI, leading indicator, and/or real-time metric. See the Appendix (page 48) for examples of additional disaggregations.

Note: As you work through this tool, your team may make adjustments to your list of KPIs. You might decide, for example, that one of your KPIs works better as a leading indicator. That is fine. It means you are working toward a well-designed data management system. If you want to change a KPI, change it in Column B of Tool 1.1. Then it will repopulate to the other worksheets.

In addition, the same metric may be repeated in two places. For example, graduation rate is a KPI. It also is a leading indicator of post-graduation KPIs. In the same way, retention may be both a KPI and a leading indicator of the graduation rate KPI.

Source the Data Your College Needs

Once you have identified your KPIs, leading indicators, and real-time metrics, you need to source your data with your institutional research team.

Collecting data for some metrics is straightforward. For example, you can find most completion and enrollment data in reports you can pull from a student information system (SIS). Common SIS platforms include Oracle PeopleSoft; Jenzabar; Anthology; Workday; and Ellucian Banner, Colleague, and PowerCampus. Other data appears in reporting tools, such as the PDP (covered in Cornerstone #3) and various business intelligence or reporting tools that use Tableau and other platforms. And for some metrics, your team will have to develop clear definitions and pull together a few different types of data.

The following examples illustrate three ways to define metrics and source data.

Example #1: Student Intentionality

Some metrics, such as those associated directly with student success reforms, are not always easy to source.

For instance, national evidence shows that students who are intentional about their academics—are excited by their selected major and connect it to personal and professional goals—are more likely to complete college. Thus, advising conversations should lead to choices of specific majors—an associate of arts in philosophy or an associate of applied science in advanced manufacturing instead of a plan for a generic associate of arts degree.

Tracking pathway or major chosen is a straightforward endeavor that is captured in every SIS, but how can a college track how confident a student is in their major choice?





Source the Data Your College Needs

This metric likely requires a survey instrument, provided repeatedly, to understand each student's confidence in their academic pursuit. This information provides a descriptive data point that is potentially predictive of success in leading indicators, such as fall-to-spring retention and percentage of full-time students who earn 30 credits in their first year. This data also is immediately actionable because it clearly shows which students are likely to benefit most from academic and career advising.

The problem, of course, is that this information is rarely captured. Therefore, this example also demonstrates why you should not base your metrics on the data you already have. The proper order is figuring out what you want to measure and then identifying the data you need to source. In this example, there are many options for sourcing data about student intentionality. You can capture it through:

1. A shared spreadsheet that all advisers can access. All advisers would open each advising session with a question about purpose, the same way that academic advisers check for student academic “vital signs.” Advisers would then add their information to the shared spreadsheet.
2. An advising tool you already have.
3. An added field in an admissions application or program change form (for new students or those changing programs).
4. A question that pops up in the learning management system (LMS) once every semester for all students.
5. A first-year experience course artifact, specifically associated with learning outcomes on self-sufficiency in academic and career planning.

Example #2: Percentage of Students Using Academic Pathways

Having a clear academic pathway is another proven strategy for student success, but it is rarely measured because measuring it typically requires strong back-end reporting from a sophisticated advising tool.

But it is essential to collect data about how many students are registering for courses along semester-by-semester academic plans that are mapped out to certificate or degree completion. Without this information, you cannot know whether your guided pathways intervention is effective at bolstering student success rates and closing institutional performance gaps.

The process for capturing this information may involve, at the outset, advisers or advising directors manually counting aspects of planner content or even uploaded attachments of semester-by-semester plans in a folder shared among advising staff. While this data requires high-intensity manual collection, it is immediately invaluable. It also can generate demand for advising tools that capture this information more automatically. (See page 44 for an example of a college that used this approach.)

Example #3: Completion Rates for Gateway English and Math

Colleges might use this metric to predict or to improve college completion. They also can use it to measure the effectiveness of remediation reform, such as corequisite education. In a corequisite education model, students who need or request additional support are immediately enrolled in credit-bearing, college level courses while receiving additional support to ensure their success.⁴

Cohort tracking is essential to see how many students complete courses that count toward graduation requirements—if students complete these courses at all—and how long students take to complete them. For example, colleges should track the percentage of students deemed to be academically unprepared who passed gateway English and/or math in their first year. To get that statistic for your college, you must track the progress of all students deemed academically unprepared. Specifically, you should look at what classes these students place into; what courses they actually take; and then, a year later, how many of them passed gateway math and English in the first year.

⁴ To learn more about corequisite education, see CCA's publications *No Room for Doubt* and *Corequisite Works: Student Success Models at the University System of Georgia*.



The metric becomes complex in three ways:

1. It requires a standard definition of “academic readiness needs” to define the cohort and a standard definition of “gateway” to know what student achievement means in this context. How does a college determine whether a student is not adequately prepared?

The typical approach is to establish a threshold—determined by the college, system, or state—for entry into college-credit-bearing English and math coursework and then identify the students who were not prepared well enough to meet this threshold. These are the students you should track for this metric.

Ideally, you should track all students who were not prepared well enough to meet the threshold even if they never attempt gateway math, gateway English, and even college itself. Having this data can help you understand whether the college is disincentivizing enrollment by telling students they are not ready for college-level coursework. (Corequisite options might encourage more of these students to attempt college.)

That said, if it is easier to source the data, you can limit your cohort to students who enrolled in gateway English and/or math.

Next, define the “gateway” courses and whether they are prerequisite courses that are not credit bearing, corequisite courses, or conventional standalone credit-bearing courses. Typically, passing the gateway course is defined as passing a course that bears college credit, so passing a prerequisite course does not count as passing a gateway course.

The details of what counts as a credit-bearing course are important, particularly for corequisite courses, which can be constructed in two different ways. Sometimes one course (with one course code) combines the corequisite learning and the credit-bearing section, and that course is considered a gateway course. Sometimes the corequisite learning and the credit-bearing section have separate course codes; in those cases, only the credit-bearing section should be counted as a gateway course.

2. Cohort tracking demands precision in comparing students' success rates. In this example, the college is exploring whether an intervention (corequisite education) helps students pass gateway math or English. Therefore, while comparing the pass rates of a corequisite course with the conventional standalone gateway course may yield some insights, it is not a useful comparison. The useful comparison is between two types of students who were determined to have academic readiness needs: students who enrolled in a corequisite course versus those who took a prerequisite-driven route.
 3. The reporting tool must capture these complexities by allowing for both filtering by cohort and making side-by-side comparisons. For this metric, at minimum, colleges usually need to track, per student, the following placement information across all semesters:
 - ▶ Any standardized test or transcript information.
 - ▶ Course(s) for which the student is eligible.
 - ▶ Course enrollment status:
 - Course name, number, and section;
 - Type of course (corequisite, prerequisite, standalone);
 - Grade/withdrawal status; and
 - Timing of any past attempts to take the course.
 - ▶ Prior academic history (e.g., in prerequisite remediation).
- The most critical metric is total quarters or semesters needed to pass gateway math, English, or both. This metric should be tracked from the time of admission, enrollment, or first attempt in these subjects. This comparison is the most effective way to evaluate your intervention (as opposed to same-semester comparisons of course pass rates in corequisites versus prerequisites or standalone credit-bearing coursework).



Sourcing Data for Disaggregations

Next, consider how you will source the data you need for disaggregations. As noted in Figure 6 on page 17, you likely will disaggregate data by a variety of factors, including demographic, academic, and support factors.

You may find the relevant data in your SIS, such as Banner or PeopleSoft; your LMS, such as Blackboard or Canvas; or in advising tools, such as EAB Navigate or Civitas.

Figure 7 provides examples of attributes you might use to disaggregate data and sources for relevant data.

Note: This figure is not exhaustive.

FIGURE 7

Sources of Data for Disaggregations

DEMOGRAPHIC	ACADEMIC	SUPPORT
<i>Likely in SIS</i>	<i>Mostly in SIS, also in LMS</i>	<i>In SIS and advising tools</i>
<ul style="list-style-type: none"> ✓ Race/ethnicity ✓ First-generation status ✓ Gender ✓ Pell Grant status ✓ Age band ✓ Time period (semester/quarter, fiscal/academic year) ✓ Special populations (e.g., international students, veterans, specific/custom cohorts) ✓ Source high school 	<ul style="list-style-type: none"> ✓ Full time versus part time ✓ Program of study ✓ Meta major ✓ Certificate or degree pursued ✓ Academic standing/grade point average band ✓ Credits earned to date ✓ Math/English readiness ✓ Dual enrollment status ✓ Custom groupings for at-risk student definitions 	<ul style="list-style-type: none"> ✓ Course instructor ✓ Assigned adviser ✓ Early alert status ✓ Use of tutoring service ✓ Use of advising services ✓ College/campus for systems and colleges with multiple locations ✓ Modality (online, face to face, hybrid)



Democratizing Data Access

Managing change demands measuring the outcomes you care about. Therefore, *everyone* must be steeped in the metrics and the data populating them.

All faculty and staff should know the relationship between any course success measure and the metrics it predicts, such as graduation and post-completion metrics. At the same time, stakeholders should know the metrics that lead to course pass rates, such as use of tutoring, homework grades, or rates of students enrolling daily or weekly into corequisites versus standalone or prerequisite alternatives. Such contextualization, combined with disaggregation by demographics, are the basics of understanding exactly how the measure depicts student reality and institutional performance gaps.

All parties should track metrics at all levels—KPIs, leading indicators, and real-time metrics—that are relevant to their jobs. For example:

A **faculty member** may need to track specific course success metrics, as well as metrics related to subsequent success. English 101 professors and chairs of English departments should, for instance, know the percentage of students who pass English 101 and then go on to pass English 102.

An **adviser** may need to know, for their caseload, proportions of their advisees with various risk indicators. These indicators can include risks flagged by faculty; risks signaled by academic status at the start of the semester; and risks noted in data provided through an LMS, such as homework assignment performance. Knowing persistence rates via daily updates on registration for the next semester may also be helpful.

A **director, dean, vice president, president, system head, or state leader** may need all these data points, or some subset, across disciplines and job functions. Some measures, such as college-wide enrollment totals, may be best presented daily but at a high level. For other measures, presentations that are less frequent (e.g., monthly or annually) but have greater depth may be more useful. Greater depth may include, for example, providing disaggregations by instructor, adviser, major, demographic, or other dimensions and their intersections. Some deans or department chairs may need to track

progress for specific programs; others may need to review the entire college.

Once you have identified the measures you care about and have cascaded them upward and downward to the respective metrics that they predict and the ones that predict them (leading indicators), create a table showing the job functions that need access to each metric. Then, use this table to make sure that the correct software permissions are configured in the relevant systems that populate that data.

Provide aggregate, college-wide data to all faculty and staff on all KPIs, pushing availability as far as possible without infringing upon student or staff confidentiality. Your reporting tools should furnish dashboards on likely KPIs and indicators for your college in a way that allows you to share and train, at minimum, all director-level operational leads, if not all student services staff and faculty department heads as well. This wide distribution serves at least three purposes:

1. **Empowerment.** When faculty, advisers, and other staff feel empowered to ask questions about data and/or request new data, they have more evidence-based conversations about student success.
2. **Effectiveness.** With access to data, all employees across the college can tie their own more focused measures back to top-line KPIs and see how their work fits with the rest of the college and fulfills your mission.
3. **Transparency.** When reports and underlying methodology are clear and accessible—through the PDP and supplementary tools, tables, and charts—you can minimize rogue reporting on different methodologies or doubt sown when data submission and calculation procedures are opaque or invisible.

The principle of data democracy also extends to those outside your college, including the public, policymakers, and others. When you make information accessible, you can use data to prove your efficiency and evidence-driven approach to student success. This quantitative proof complements qualitatively described achievements in teaching, learning, and scholarship.

Standardizing Data Methodology and Data Reports

Reports about metrics derived from KPIs, as well as the KPIs themselves, need standard definitions. The measurement system only works if it has clear definitions. Some would suggest that writing definitions is a prerequisite to reporting on the metrics in the first place, but typically surfacing the data is required to elevate discrepancies and then iron them out, including through (re)definition.

To this end, you can develop these definitions and standardize reporting tools. Through this process, you can surface the methodology in practice, developing depth across the community on the standard definitions and, more importantly, the agreed-upon reporting tools that use those definitions.



Your goal is to make sure that all employees understand the importance of—and use—standard, agreed-upon definitions, methods, and reports and avoid finding their own solutions. Your college must avoid narratives that contradict, are confusing, or preserve the status quo (intentionally or not). Conversation and education on newly established, standard definitions behind metrics and reports not only mitigate competing data portrayals but also move

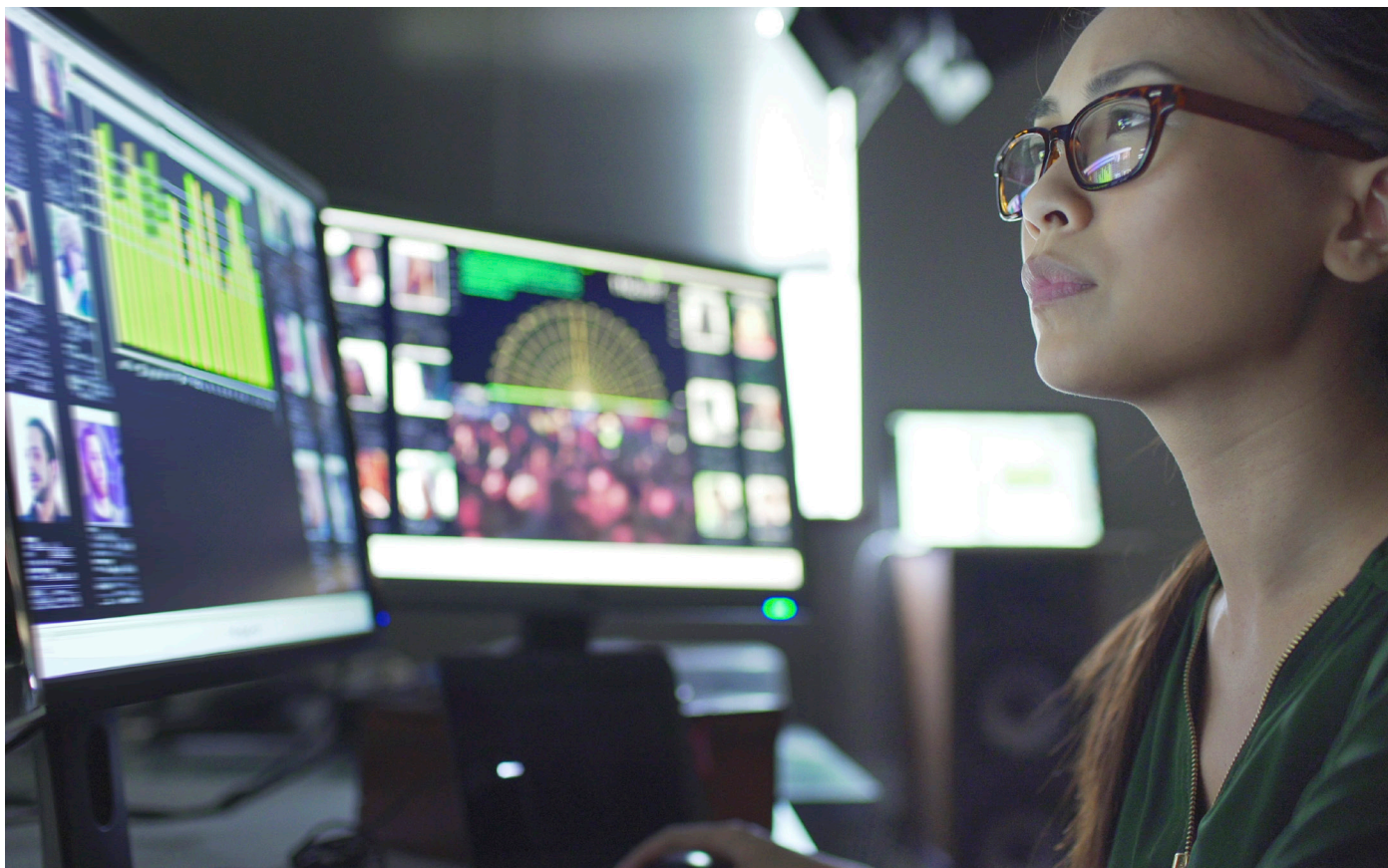
conversation around data validity to the implications of the data itself.

When developing a data dictionary—definitions of the data terms your college will use—start with the metrics before getting into the underlying components. Begin with existing sources for definitions, such as the PDP, IPEDS, and accreditor requirements. Build a Venn diagram showing where your measures overlap with those covered in these and other reporting tools. When developing definitions around student completion, if the measures you've chosen significantly overlap or are congruent with what you need to report to IPEDS, use the federal definition to allow for benchmarking against other colleges. From there, examine other dictionaries that are common for universal leading indicator metrics, such as those from the PDP, which were co-authored by CCA.

To be able to do this work, it is critical that your **institutional research team is empowered to standardize these definitions.**

This individual or department must be the lead in triangulating definitions from multiple sources and confirming where in your systems infrastructure key data resides. Leaders in different domains, from student success to finance to academics, must have better access to data on these definitions and be far more empowered to pull and talk about them. The institutional researcher's role is to serve as the holder of the data, establishing the definitions, reporting templates, and sourcing on timelines and in formats that meet the expectations and verification standards of the rest of college leadership.

Finally, providing data access means leaning toward data availability—especially when sharing information that is in aggregate—while not disclosing personally identifiable information. Many academic and advising roles, not to mention leadership, should be able to see such aggregate information, especially if they are involved in retention and enrollment campaigns.



Safeguarding Privacy While Providing Access to Data

Your data team must know about and abide by the Family Educational Rights and Privacy Act (FERPA). Under FERPA, students have rights to the privacy and non-disclosure of their information. At the same time, colleges and universities have a “legitimate educational interest” to review student information to undertake job responsibilities, including those involved in student retention and recruitment. Review FERPA regulations with your legal department and ensure that you strike a fair balance between tight privacy with democratized access to aggregate information and sufficient availability of data for specialists and leadership to do their jobs.

Automate access requirements in reporting tools and permissions within the SIS, LMS, advising system, and other systems. These settings should be defined by each functional area—and validated with institutional

research—before the appropriate personnel encode the roles and tasks in software security features.

If possible, automate the process of providing security parameters to new employees as part of onboarding, and associate data availability with specific job functions instead of individual people. In most cases, individuals should have a subset of the security access available to the person or people they report to. For example, a new adviser who starts at your college should have access parameters set to their caseload and provisioned automatically at their start date, across all systems. These access permissions should be associated with the job-level “adviser.” Advisers’ permissions should be a subset of the permissions available to their supervisor, most likely the advising director or dean. Each adviser should view their own caseload, and the supervisor should be able to view all caseloads.



TOOL 2

Identify Data Sources for KPIs, Leading Indicators, and Real-Time Metrics

A	B	C	D	E	F	G	H
Tool 2: Identify Data Sources for KPIs, Leading Indicators, and Real-Time Metrics							
KPIs	KPI Data Sources	Leading Indicators	Leading Indicator Data Sources	Real-Time Metrics	Real-Time Metrics Data Sources	Standard Disaggregations	Additional Disaggregations
KPI 1		Leading Indicator 1		Metric 1		Race/Ethnicity, Pell Status, Gender, Age, Full-Time/Part-Time	0
				Metric 2			
				Metric 3			
				Metric 4			

In this tool, you will identify data sources for your KPIs, leading indicators, and real-time metrics. Use the “Tool 2” sheet in the *Using a Measurement System* Excel workbook.

Use Cornerstone #2 and the Appendix (page 48) to help you complete this tool.

Directions

- Text in Column A (KPIs), Column C (Leading Indicators), and Column E (Real-Time Metrics) appears in blue because these columns have automatically populated with your content from previous tools. If you want to edit your KPIs, change them in Tool 1.1. If you want to edit your Leading Indicators, or Real-Time Metrics, change them in Tool 1.2.
- In Column B (KPI Data Sources), list reports with metrics that align with your KPIs. Separate each source with a comma. Consider the following sources:
 - IPEDS reporting that relates to your KPI. For example, if one of your KPIs is median earnings after graduation, you would need to track graduation rates. IPEDS captures graduation rates at 100 percent and 150 percent of expected completion time for full-time students. If you can be specific about your metric, such as “IPEDS 100 percent completion rate for full-time students,” include that detail. If you want to reference IPEDS generally, write “IPEDS.”



It is best to use an Excel spreadsheet or Google sheet for all of the Tools in this guidebook. We recommend using the *Using a Measurement System* Excel workbook created as a companion for this guidebook. It includes a sheet for each Tool in the guidebook. See page 19 for guidance on using the workbook.

Download the *Using a Measurement System* Excel workbook at <https://bit.ly/3nkrchp>.



Source the Data Your College Needs

- ▶ College Scorecard reporting that relates to your KPI. Again, be general or specific. If you want to reference College Scorecard generally, write “College Scorecard.”
 - ▶ Any other reports that relate to your KPI, such as those required by your state or system, those required by your accreditor, and any other requirements or sources.
3. In Column D (Leading Indicator Data Sources), list the sources you will use to gather data for each leading indicator. Separate each source with a comma.
 4. In Column F (Real-Time Metrics Data Sources), list the sources you will use to gather data for each real-time indicator. Separate each source with a comma.
 5. As you identify data sources, consider the disaggregations you will use for each KPI, leading indicator, and real-time metric. These disaggregations are automatically populated in Columns G and H so you can refer to them. (If you want to change your additional disaggregations, change them in Tool 1.2.)

Reminder: If you identify more than one report in a column, separate the reports with a comma so the content transfers clearly to the master tab.



Use the National Student Clearinghouse PDP

The National Student Clearinghouse's PDP is a data and reporting tool for tracking student success metrics. It offers a powerful vision: that colleges, universities, systems, and state policy leaders should have basic data access to aid a relentless pursuit of results on common measures of student success.

College credentials in programs of economic and educational value provide an engine for social mobility, and the PDP helps colleges, universities, systems, and states have a full picture of student progress and outcomes on measures that predict the likelihood of credential attainment, on-time graduation, and post-completion success.

Although institutional research departments will need to invest time to submit the data, the PDP ultimately allows your institution to generate more useful information with limited bandwidth. Beyond meeting multiple data submission/reporting requirements for organizations like CCA, the PDP allows interactive, real-time data to be shared across participating institutions. One set of dashboards can serve the needs of many different stakeholders at the college (e.g., faculty, staff, and specific departments), freeing time and resources for additional data requests. When

institutional research teams do not have to spend time simply pulling data that people at the college need, they can focus on more substantive work, including analyzing, understanding, and acting upon data—and training others across the college, system, or state to do the same.

The PDP counts all students—first time, transfer, part time, and full time. Covering all institution types and every transfer type (e.g., in-state and out-of-state transfers), the PDP helps most on measures related to enrollment, gateway course completion, credit accumulation rate, credit completion ratio, retention within and across colleges, transfer activity, and graduation outcomes.

Filters and dimensions include starting cohort type (e.g., “first time, part time”), cohort term, credential type sought, age, race and ethnicity, gender, Pell Grant status, first-generation-to-college status, grade point average bands, English and math readiness, and more. Aggregated dashboards and an analysis-ready file allow for exploration of course modality as well. Finally, the tool can be linked to institutional websites for public access.

FIGURE 8

PDP Metrics, Attributes, and Benchmarks

The PDP tracks the following metrics and associated attributes. In addition, the PDP embeds benchmarks, also using the filters noted, so colleges can access their own data and compare their performance with other colleges across the country. CCA can help colleges determine how to act on this data.

METRICS	ATTRIBUTES	BENCHMARKS
<ul style="list-style-type: none"> ✔ Credit accumulation ✔ Credit completion ratio ✔ Enrollment ✔ Completion rates ✔ Gateway course completion ✔ Time to credential and credentials conferred ✔ Within-term and term-to-term retention ✔ Transfer activity 	<ul style="list-style-type: none"> ✔ First-time students/transfer in ✔ Cohort academic year and starting term ✔ Credential type sought ✔ Full time/part time ✔ Dual enrollment ✔ Summer enrollment ✔ Age band ✔ Race/ethnicity ✔ Gender ✔ Pell Grant status ✔ Grade point average band ✔ Math readiness ✔ English readiness 	<ul style="list-style-type: none"> ✔ State ✔ Public/private ✔ Two year/four year ✔ Carnegie classification ✔ Historically Black College or University (HBCU) ✔ Hispanic-Serving Institution (HSI) ✔ Predominantly Black Institution (PBI) ✔ Tribal College or University (TCU) ✔ Native American Serving Non-Tribal Institution (NASNTI) ✔ Asian American and Native American Pacific Islander-Serving Institution (AANAPISI)

Submitting Data to the PDP

To set up the PDP at your college, submit the data using the process shown in Figure 9 (page 36).

Each time an institution submits data it provides two files to the National Student Clearinghouse. The first file is a student cohort file that has one row per student and one column for each key attribute (e.g., race/ethnicity). This file provides information for all of the attributes the PDP reports. The second file has one row for every student course enrollment, such as “Student ID + Biology 101.” It provides information for measuring components such as pass rates. This data matches with other National Student Clearinghouse data for transfer, graduation, and other outcomes, as well as for benchmarking within the PDP.

Include data for all undergraduates who attempted at least one course at your institution in the term for which you are submitting. As described previously, you will submit a cohort data file with students as the unit of analysis and a course data file for course-level information, both in either .txt or .csv format. These files are optionally supplemented by a financial aid data file. Name and file specifications and conventions

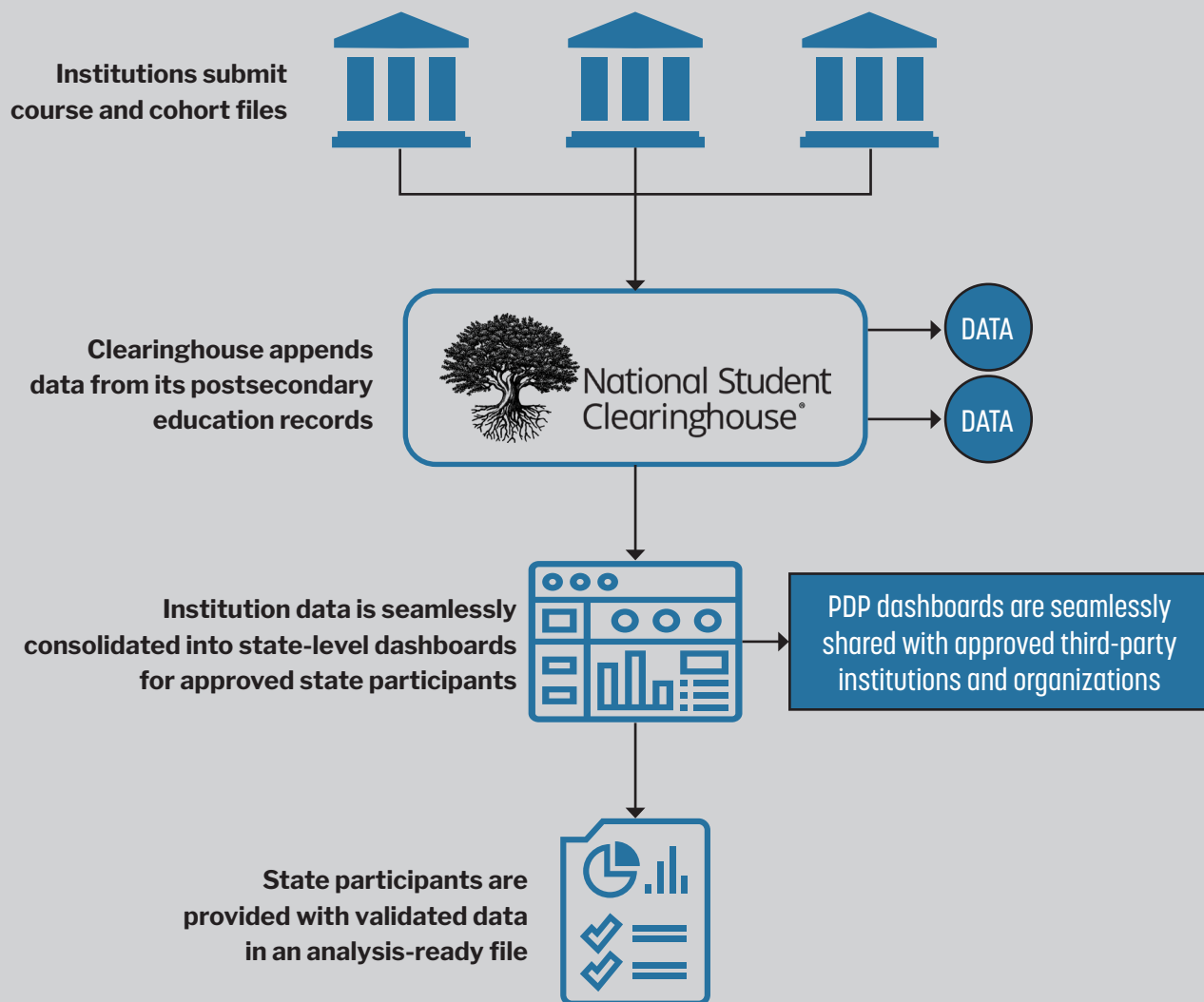
are also available in a comprehensive [National Student Clearinghouse PDP submission guide](#), which includes a data dictionary for variables that make up the metrics tracked.⁵

The PDP system runs two validation checks on your data file submissions: structural validation for format and field validation for values. To resolve any errors, you can view a validation error log and connect with National Student Clearinghouse at PDPService@studentclearinghouse.org. Once your data is validated, you will certify your submission and follow processes for ongoing data updates.

The data you will receive will come in the form of Web-accessible Tableau dashboards that highlight the metrics shown in Figure 8 (page 34). The data will align with CCA’s pillars and strategies, and it will partly align with measures you identified in Cornerstone #1. In addition, you will receive a .csv-based analysis-ready file that includes each student’s data as a single row, which allows for deeper analysis and matching to datasets from other tools, as identified in Cornerstones #1 and #2.



⁵ National Student Clearinghouse. (2022, August 4). *Postsecondary Data Partnership (PDP) data file submission guide*. <https://help.studentclearinghouse.org/pdp/wp-content/uploads/PDPDataSubmissionGuide.pdf>

FIGURE 9**Process of Submitting Data to the PDP****Troubleshooting Data for Submission**

More often than not, PDP implementation reveals gaps in a college's internal metrics and data entry.

A common example is in gateway course completion. As explained on pages 24–26, this metric is the percentage of students who complete gateway math or English, with a critical disaggregation showing whether a student has been deemed adequately prepared in the subjects. This metric is based on your college's determinations of which courses:

1. Count for college credit, such as English 101 and Mathematics 117;
2. Do not count for college credit, including prerequisite remediation courses that typically have numbers that are 100 or less, such as English 098 or Mathematics 090; or

- Embed corequisite learning in an associated section alongside credit-bearing coursework. The corequisite courses are typically tagged the same as the standalone credit-bearing courses (e.g., English 101, indistinct from other sections), tagged at the section level (e.g., English 101-C), or given an entirely new course name (e.g., English 100).

For colleges offering corequisite education, it is important to track pass rates for gateway English (or math) for students deemed “academically prepared” or “college ready” versus students deemed “not

academically prepared” or “not college ready.” To do so, you will need to track corequisite courses by either course or section (as described in #2 and #3 in the previous two paragraphs). In other words, your SIS needs to allow for entry and registration into designated corequisite courses. Then you will need to map to codes for credit-bearing math or English in the PDP. Therefore, knowing how you define and track your metrics—the exercises involved in the first section of this guidebook—is critical for a sound implementation of the PDP or of any reporting tool.

PDP Definitions of Metrics

This guidebook emphasizes the value of the National Student Clearinghouse’s PDP in tracking student momentum toward college completion. As such, it is important to know the metrics tracked most prominently by the PDP and how the PDP defines them. These definitions explain data requirements for fields that will need to be populated from your SIS—and the beneficial data you will receive in return.

These are the exact metrics and descriptions provided by the PDP’s interactive dashboards and the National Student Clearinghouse definitions of them.⁶

Credit Accumulation Rate by Year: Provides a view of how successful students are at completing enough credits starting from their first year of enrollment until the end of their fourth academic year. It is designed to help measure the extent to which students are progressing toward on-time completion. The disaggregates clarify which students are (or are not) gaining academic momentum early to help determine interventions to help students succeed.

Credit Completion Ratio: Offers a view of how successful students are at completing the credits they attempt in their first academic year. As higher first-year credit completion rates are linked with higher credential completion rates, this metric can help identify student populations needing early intervention. A student’s individual credit completion ratio is derived by dividing

the total number of credits earned in the first academic year by the total number of credits attempted. The average of all student ratios across an academic year yields the institution’s credit completion ratio for that academic year.

Gateway Course Completion by Grade: Shows how many first-year students successfully complete their Math or English gateway courses. First-year gateway course completion is a critical leading indicator of students’ likelihood for credential completion, which can help alert institutions about how to better support gateway course-taking and completion among new students.

Retention/Persistence: First-to-second-year retention and persistence rates are presented for six consecutive student cohorts. Retention describes how many students are still enrolled or who have earned a degree from the cohort institution before the end of the student’s second academic year. Persistence reflects how many students are still enrolled in their second year or completed a credential at another institution. These data are first derived by checking whether a student has attempted credits at the cohort institution in his or her second academic year. If the student’s second year data is not submitted in an institution’s course file, the PDP leverages data supplied through the Clearinghouse’s nationwide enrollment and degree reporting services.

⁶ National Student Clearinghouse. (n.d.). *Key performance indicators (KPIs)*. <https://demo.studentclearinghouse.org/colleges/pdp/key-performance-indicators/>

Retention/Persistence Term-to-Term: Provides a view of retention and persistence rates for students who attended as a first-time or transfer-in student over time, giving a term-to-term view of the student population within their first two academic years.

Transfer: Provides information on students who earned a certificate, an associate, a bachelor's, or did not earn a credential before or after transfer. It also includes information on an institution's overall transfer rate. Outcomes will be provided for up to 6 cohorts of students and are available for up to 2, 3, 4, 6 and 8 years after a student's first enrollment when possible. Note that only data for cohorts in which the full time frame has elapsed will be displayed. This dashboard includes three filters; "earned credit milestones" which displays the number of credits a student earned prior to transfer, bucketed in 6 credit increments, "transferred within" with options including 2, 3, 4, 6 and 8 years, and "institution type" which allows a user to select 2 year institutions, 4 year institutions or both.

Outcomes Measures: Provides a view of completion rates and other outcomes for students who attended the cohort institution by three categories: 1) those who earned a certificate or an associate, 2) those who earned a bachelor's, and 3) those who are still enrolled at either the cohort or another institution. This information identifies groups of students for whom early intervention might boost completion and retention rates at the institution.

Credentials Conferred & Time to Credential: Credentials conferred reflects the academic year in which each credential was awarded, not the cohort year. Because the credentials reflected in this measurement are not restricted to the students submitted in the cohort file, a single student can have multiple credentials reflected. Credentials earned by students who stopped out for more than five years after first enrolling are excluded from this measure. Each credential type offered by the institution is available and disaggregated.





TOOL 3

Align With PDP Metrics and Benchmarks

A	B	C	D	E	F	G
Tool 3: Align With PDP Metrics and Benchmarks						
KPIs	Leading Indicators	Real-Time Metrics	Standard Disaggregations	Additional Disaggregations	PDP Metrics	PDP Benchmarks
KPI 1	Leading Indicator 1	Metric 1	Race/Ethnicity, Pell Status, Gender, Age, Full-Time/Part-Time	0		
		Metric 2				
		Metric 3				
		Metric 4				

In this tool, you will determine which of your metrics are part of the PDP and identify the appropriate type of benchmarking for each of them. Use the “Tool 3” sheet in the *Using a Measurement System* Excel workbook.

Use Cornerstone #3 to help you complete this tool.

Directions

- Text in Column A (KPIs), Column B (Leading Indicators), Column C (Real-Time Metrics), Column D (Standard Disaggregations), and Column E (Additional Disaggregations) appears in blue because these columns have automatically populated with your content from previous tools. If you want to edit your KPIs, change them in Tool 1.1. If you want to edit your Leading Indicators, Real-Time Metrics, or Additional Disaggregations, change them in Tool 1.2.
- To complete Column F (PDP Metrics), refer to Figure 8 on page 34. Choose PDP metrics that align with your KPIs. The definitions for these metrics can be found on pages 37–38. In Column F, write the specific PDP metric related to your KPI. For example, if your KPI is “median earnings after graduation,” you would want to track completion rates, which is a metric in the PDP. Thus, you would write “completion rates” in Column F.
- To complete Column G (PDP Benchmarks), decide the appropriate level of benchmarking for each KPI. Figure 8 on page 34 can help you determine the appropriate type of benchmarking (e.g., state or institutional level benchmarking) for each KPI.



It is best to use an Excel spreadsheet or Google sheet for all of the Tools in this guidebook. We recommend using the *Using a Measurement System* Excel workbook created as a companion for this guidebook. It includes a sheet for each Tool in the guidebook. See page 19 for guidance on using the workbook.

Download the *Using a Measurement System* Excel workbook at <https://bit.ly/3nkrchp>.



Have Regular Conversations About Data

Having regular conversations about data is the key to having an effective measurement system. Without these conversations, the measurement system is only words on pages and numbers on charts. Colleges that want to improve outcomes and close institutional performance gaps must require employees to have regular conversations about data. These conversations—by all people, at all levels of the institution—make data central to decisionmaking. They also create a culture of shared responsibility and accountability.

Just as the college has goals that are tied to data, every individual should have goals that are tied to data. And they should have regular conversations about the metrics that are connected to their work. Every individual at every level should feel ownership of at least one metric—and have regular conversations to monitor metrics, share information, and collaborate on strategies for student success and organizational performance. (As noted on page 11, some of these metrics will be specific to an academic or staff department; those more specific metrics should roll up into an institutional KPI.)

Have Data Conversations at All Levels

Every employee should participate in at least one regularly scheduled, recurring conversation about data.

There are many types of data conversations. State leaders, systems leaders, and college leaders may bring together teams of people to discuss key metrics. College leaders will use metrics to track progress on all of the college's goals. Department heads may set up teams of faculty or staff members to discuss department-level metrics. For example:

► **Example 1.** A state commissioner for higher education wants to track retention at the colleges across their state. They set up a monthly data conversation with college presidents. In that conversation, they discuss each college's current retention data, what they expect their retention will be for the next semester, and why. They also discuss enrollment, graduation rates, total degrees awarded, and credit completion ratios. The

commissioner holds this recurring conversation every fourth Wednesday over Zoom.

► **Example 2.** A college is launching corequisite education at scale to improve credit accumulation and retention. The college president appoints a team—including the president, provost, vice president of student success, director of developmental education, and director of institutional research—that will meet monthly. In that conversation, they will discuss which students are identified as needing corequisite education and why, which students are failing which homework assignments and why, and what services students are offered and using. Because that group has overlapping responsibilities in multiple areas, they also will discuss other leading indicators, such as retention, full-time students progressing to 30 credits in their first year, and tracking/advising of students eligible to complete their degree this term.

The president holds this recurring conversation the first Tuesday of every month in person.

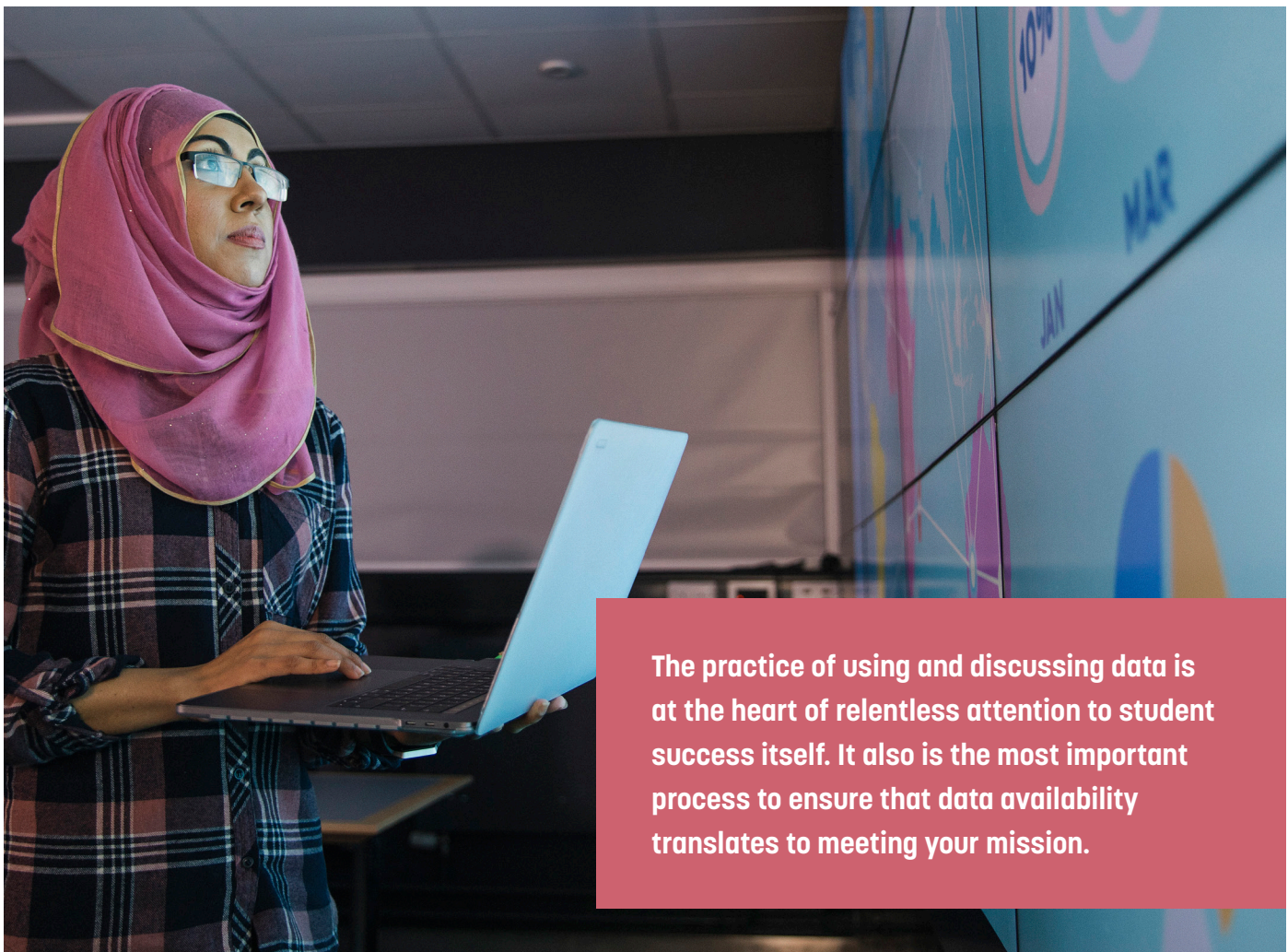
- ▶ **Example 3.** The chair of the math department knows that the director of developmental education is participating in the data conversation in Example 2. Therefore, the math department chair sets up a data conversation every two weeks for the adjunct faculty teaching gateway math. They are paid a stipend for this time. During this meeting, they compare data for corequisite classes, including pass rates, attrition, and homework assignment performance. Keeping student success at the forefront, they discuss what is working well and strategies for improvement.

Through conversations like these, college leaders can track metrics, and every college employee has goals

that are tied to data, knows which metrics they are accountable for, and can see how their metrics fit into the college's broader metrics and targets. They also have regular conversations about data and their role in supporting student success.

These conversations about data are important for every college employee whether they work in an academic department, advising, the physical plant, or the cafeteria. Everyone who has opportunities to connect with students has a role to play in student success.

This practice of using and discussing data is at the heart of relentless attention to student success itself. It also is the most important process to ensure that data availability translates to meeting your mission.



The practice of using and discussing data is at the heart of relentless attention to student success itself. It also is the most important process to ensure that data availability translates to meeting your mission.



Set the Ground Rules for Discussing Data

Before you begin discussing data, make sure you have established the best conditions for these conversations. Set up ground rules, discuss them, and work to develop agreement to use them. Begin with the following eight ground rules. Add to them as needed.

1. Everyone participates in data conversations. All administrators, faculty, and staff know what a data conversation is, and each person routinely participates in at least one. A data conversation is a regularly scheduled conversation about one or more key metrics. They are recurring conversations, not one-offs. For example:

- ▶ A system of college presidents might confer every three weeks on leading indicators of statewide or citywide performance, such as the percentage of students presently enrolled who can complete a degree at the end of the semester.
- ▶ The math department might connect every other day the first two weeks of the semester to compare attendance and completion rates for the first homework assignment. Faculty members use friendly comparison as a basis for sharing the practices that seem to be working for students in

the classes with the least attrition and the highest turn-in rates. They also discuss other indicators of student success, such as the quality of student work and best practices for improving it.

2. The college has goals that are tied to data. The college has established targets for each metric, at all levels, and with standard disaggregations and relevant additional disaggregations. (See Figure 6 on page 17 for more information about disaggregations.)

3. Every individual has goals that are tied to data. All operational leads—from student service to finance to tutoring and admissions—know which metrics they are accountable for.

4. Every individual has a personalized, tailored data dashboard. All administrators, faculty, and staff have access to the data they need in a report that is easy to retrieve, use, and update.

5. Data conversations are tailored to each person's or department's needs. Some vice presidents, for example, might use a daily five-minute conference on a small set of metrics to surface key issues to address that morning, while a Board of Trustees might see only quarterly reports of top-line KPIs.

6. Data is never used punitively. The campus culture is focused on improvement, and variation in data is treated as an area that requires action. For example, if disaggregated data shows different outcomes for students of different races/ethnicities, then stakeholders acknowledge that the college has an institutional performance gap to address. Similarly, if students in one adviser's caseload are significantly underperforming compared to students in their peer adviser's caseloads, that difference may be an opportunity to provide professional development, re-examine advising assignments, or both.

7. Peers can learn from one another. Each person has access to data for their peers with similar responsibilities. Everyone is committed to using this data to improve, and data is never used punitively. (If making the data anonymous is necessary for everyone to use it productively, then share the data in a way that does not inform the reader who the peers are.)

8. Conversations lead to action. Teams should always stay focused on how to improve the student reality the data reflects. Teams should uncover the cause of any course pass, retention, or graduation rate that is not approaching a target or is slipping from the prior day, week, month, or year. They should develop a plan for rectifying the problem and provide an update at the next meeting.

Productive data conversations require trust, and these ground rules are intended to help teams build that trust so they can use data effectively. These conversations

help teams maintain relentless attention on student success and relentless focus on closing institutional performance gaps.

Once you have established these ground rules, the data team can help administrators, faculty, and staff have more effective conversations about data. The data team can provide training, participate in conversations among people who are new to discussing data, and provide sample questions that can guide conversations about key metrics. For example, conversations about data can start with questions such as these:

- ▶ Based on what you see in the data for a given metric, what are the top three takeaways? Are there some gaps by race/ethnicity, age, gender, or Pell Grant status? Are there gaps among colleges within a system that require further investigation and questioning before the next data conversation?
- ▶ Do you have hypotheses to test about why there may be a variation/gap in the data or what would work to close it? What additional data might help you further examine these questions?

When using data conversations, focus on identifying areas for improvement without casting blame. If you avoid weaponizing data and position these conversations as part of a continuous improvement process, you can engage participants in thinking more deeply about their work and improve team morale.

Conversations about data are important for every college employee whether they work in an academic department, advising, the physical plant, or the cafeteria. Everyone who has opportunities to connect with students has a role to play in student success.



Have Regular Conversations About Data

In addition, cross-cutting teams, which may span institution and even state lines, should have cross-cutting metrics and convene on them. For example, a community college or system of two-year institutions may have a KPI for the number of students who transfer to a four-year institution after completing an associate degree. The four-year institution may have

a target for the percentage of junior-year students who transfer from the two-year space. In this example, the two institutions are trying to increase the same measure, albeit from different perspectives. If the individuals at these institutions discuss their goals, they can share critical information and work together to improve outcomes.

Avoid Common Pitfalls

The road to creating and implementing a measurement system is not linear. Your college can easily be sidetracked by naysayers, competing priorities, and the challenges of undertaking difficult work. Follow these five recommendations to avoid common pitfalls.

1. Get started right away. Start now even if you need to use manual data and even if you question the perfection of some of the data you will use for decision support.

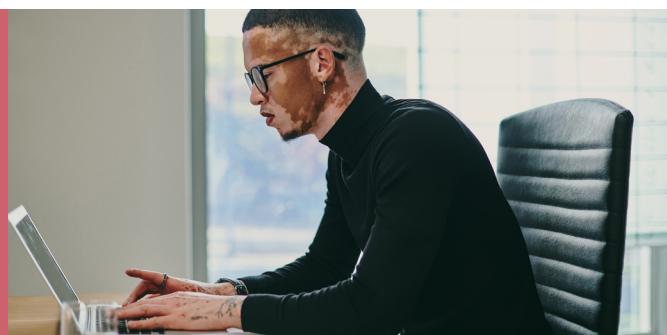
It is almost always worth trying to track data manually that you do not automatically surface through your present systems. This approach keeps the perfect from being the enemy of the good. If a metric will show you the state of student reality—and whether you are improving it—then you should start tracking that metric right away. This fact holds true, even if your only tool is Excel.

At one college, an administrator was charged with getting all students to register using individualized, semester-by-semester academic plans, but the college did not yet have the technology to automate this work. The only option was to create these plans manually in Word documents. The college had a choice: Hold the initiative for a year or two until the technology could be purchased, or work with the available tools. The administrator required all college advisers to use a

common template with a common naming convention to indicate when a plan was complete, semester by semester, and to confirm whether a student was enrolled onto it. Deans were charged with spot checking for integrity and counting the number of students using education plans—and disaggregating the numbers by race/ethnicity, Pell Grant status, and other factors using student data from automated systems. Although the data was not perfect, it was still extremely useful. Moreover, the act of tracking the college's progress inspired action so more students registered onto semester-by-semester plans. The college increased retention and ultimately increased graduation rates. In the meantime, this process also created significant internal clamor and helped with the push to purchase the necessary education planning technology.

Thus, surfacing data right away is helpful, even if you suspect it may contain errors. In fact, the best way to find the errors is to put light on them. Be creative in getting the data you need. Perhaps you are struggling to extract information from a popular advising system or LMS. Organizations such as CCA can help you tap a network or alliance full of colleges and universities that are grappling with similar problems on similar platforms so you can talk with someone else who may have the same problem—and even better, may have solved it.

It is almost always worth trying to track data manually that you do not automatically surface through your present systems.



2. Stay strong. Hold fast to your commitment to better serve students; improve graduation rates; and close institutional performance gaps by race/ethnicity, Pell Grant status, and other measures. Hold your ground, and do not change your measures to tell a story you or others want to hear. Use data to show the reality of the typical student on your campus.

Even though you want to use data only for improvement, many people may be afraid of using data. Faculty and staff may want to cherry pick the students who will be counted. This approach—often called “shaving the denominator”—is characterized by statements like these:

“These students should not be considered part of my caseload.”

“Students who only take three credits at a time do not exhibit typical course-taking behavior and should be excluded from the calculation.”

“Part-time students are retained at lower rates than full-time students and should not be part of an overall retention metric.”

When faculty or staff provide some version of “X students should be removed from the calculation for Y reason,” they are excluding students—and often they are excluding the students who most need to be counted. In addition, conversations about supposed validity issues (e.g., how a rate is calculated) distract from the important discussion about improving outcomes and closing institutional performance gaps.

Attempts to take a less comprehensive view of students on a given metric should be met with a different plan: Include all students and supplement the all-student data with a disaggregation (e.g., retention rates by race/ethnicity or age bracket).

These conversations are not easy, and at a certain point you may have to agree to disagree with an individual who insists on another measure or relies on anecdotal information about one or two students.

3. Understand that sometimes inferential links will be impossible—and that is okay. Often, tracing success or failure to a single variable in isolation is hard to do. Student success reform is moving quickly, and many colleges are implementing many evidence-based changes at the same time. For example, a college may be cultivating a new data-driven management culture while replacing prerequisite remediation with corequisite education and introducing an advising system that helps students register using semester-by-semester plans at credit loads that work for them. All of these reforms together may lead to a dramatic increase in credit accumulation and retention rates, and disentangling the causal factors will be hard, especially as the combined impact of the factors likely is greater than the sum of the individual parts.

Having these difficult-to-trace improvements is okay. The improvement itself is the goal. And because proven interventions often have synergy that leads to stronger outcomes, implementing multiple proven interventions simultaneously may make more sense than piloting each intervention individually.

4. Invest in middleware, warehousing, and other technology that helps systems talk to each other.

Adding new data systems is easier when you have a strong data infrastructure with connectors that bring software together and warehouses that store and reconcile information across multiple systems. When colleges have these tools, learning analytics and advising measures can roll up to predictors of college completion.

5. Document as you go. Documentation is critical so you can entrench systems that will outlive any one person’s tenure in your college.



TOOL 4

Plan Data Conversations at All Levels

A	B	C	D	E	F
Tool 4: Plan Data Conversations at All Levels					
Metric(s) to Track	Relevant Disaggregations	Participants	Responsible Party (Name, contact information)	Meeting Frequency	Meeting Medium (Zoom, In-person, Teams, etc.)



It is best to use an Excel spreadsheet or Google sheet for all of the Tools in this guidebook. We recommend using the *Using a Measurement System* Excel workbook created as a companion for this guidebook. It includes a sheet for each Tool in the guidebook. See page 19 for guidance on using the workbook.

Download the *Using a Measurement System* Excel workbook at <https://bit.ly/3nkrchp>.

Leaders at all levels of the college can use this tool to organize data conversations on key metrics—and to ensure that every employee is involved in at least one recurring conversation about metrics.

Share this tool throughout your college. Presidents can use it to organize a variety of data conversations. Department chairs and supervisors can use it to organize data conversations with people in their departments. (Content from this tool will not be added to the master tab.)

When planning data conversations, remember that every college employee should have metrics that relate to their work and should be part of at least one recurring conversation about data. Academic departments should take whatever steps are necessary to include adjunct faculty in these conversations.

Use Cornerstone #4 (and share it with others) for support completing this tool.

Directions

Use one row per data conversation.

1. In Column A (Metric[s] to Track), list the relevant KPIs, leading indicators, real-time metrics, department-level metrics, or other metrics that the team will regularly discuss at this meeting.
2. In Column B (Relevant Disaggregations), list the disaggregations that should be part of this conversation.
3. In Column C (Participants), list the people who should be part of the data conversation. You can use titles or individuals' names.
4. In Column D (Responsible Party), specify the person who will be responsible for organizing meetings and communicating with the group. Include the person's name, email, and phone number.
5. In Column E (Meeting Frequency), indicate how frequently this group should meet (e.g., daily, weekly, monthly, or once per term).
6. In column H (Meeting Medium), indicate how the group will meet (at an in-person meeting, using Teams, using Zoom, etc.).

The ONGOING Process of Using Data Effectively



By measuring specific metrics related to student completion and success, your college can identify areas for improvement and take action toward specific goals. Measuring student reality provides the power to improve it. This approach involves tracking data on a regular basis and using it to make real-time, effective decisions to graduate more students on time, in programs of ongoing educational and economic value, without institutional performance gaps. If you complete the readings and tools in this guidebook, you will be well on your way to having an efficient, effective management system that can help your college improve student success and graduation prospects.

Next steps include expanding the metrics your colleges track and bringing more nuance to both the metrics and the data being sourced to populate them. The following questions can help guide your next steps:

- ▶ Are there other metrics, e.g., metrics from peer institutions and higher education advocacy organizations, that we should consider incorporating into our measurement system?
- ▶ What data tools allow for real-time updates, and how might we use them? For example, how can we show executives and board members daily and weekly updates for metrics related to retention, graduation, and post-completion success so they can be as up to date as possible on our college's efforts?
- ▶ What scales can we use to effectively present multiple measures and disaggregations at once? A scale incorporates several key metrics and then uses a weighted average to present a composite score on a scale of 1–100. You could create scales to show, for example, a single, institution-wide score for racial equity that encapsulates the college's progress toward closing institutional performance gaps.

Creating a culture of success and ensuring equitable outcomes for all students requires a sustained commitment of effort and investment, not just in dollars for technological resources and data reporting, but, even, more importantly, in time needed to create an airtight measurement system. This system must center metrics that assess how students feel supported, valued, and empowered to achieve their goals. By prioritizing the needs of diverse student populations, colleges can cultivate an inclusive and welcoming community that recognizes and addresses systemic barriers to success.

APPENDIX

Metrics Associated with CCA Strategies

Figure 10 on page 50 provides critical information for metrics related to proven improvement strategies. Use it to define and develop your college’s metrics.

Start by considering the initiatives your college already has underway and new ones you may begin. Also consider national best practices for improving on-time college graduation and closing institutional performance gaps. CCA’s four pillars and their associated strategies summarize those practices.

Then locate the initiatives you are using or plan to use in Figure 10 . It has four sections: post-completion success, which measures the impact or value of your college; college completion; leading indicators for college completion; and real-time metrics.

Figure 10 provides a description or purpose for each metric, details about what to measure, a recommended denominator, a source for the data, and additional disaggregations.

As shown in Figure 6 on page 17, CCA has identified two categories of disaggregations—standard disaggregations and additional disaggregations. Based on this guidance, CCA assumes colleges will look at each metric using the standard disaggregations: race and ethnicity, Pell Grant status, gender, age, and enrollment status (full time/part time).

While critical, the standard disaggregations are not enough. Colleges also should use additional disaggregations, which are measures that are specific to each metric. Most metrics have at least one disaggregation that is typically used to better understand it. For example, enrollment is frequently disaggregated by new students versus returning students or dual enrollment versus college going only. Figure 10 provides at least one additional disaggregation for most metrics.

CCA Pillars and Strategies

CCA champions four pillars of success—Purpose, Structure, Momentum, and Support—each with a set of corresponding strategies that must anchor all student-centered higher education systems.

The four pillars, with their game-changing student success components, are shown below. (The pillars were updated in 2022.)

PURPOSE	STRUCTURE	MOMENTUM	SUPPORT
<p>Aligning the college experience to each student’s goals for the future</p> <ul style="list-style-type: none"> • First-Year Experience • Career Exploration • Academic & Career Alignment • Adult Learner Engagement 	<p>Building course road maps that make the path to a degree or valued workplace credential clear</p> <ul style="list-style-type: none"> • Math Pathways • Meta Majors • Academic Maps & Milestones • Smart Schedules • Stackable Certificates & Credentials 	<p>Designing multiple avenues for students to get started, earn credits faster, and stay on track to graduate</p> <ul style="list-style-type: none"> • Credit for Competency • Multiple Measures • Corequisite Support • Dual Enrollment • 15 to Finish/Stay on Track 	<p>Addressing student needs and removing barriers to academic success</p> <ul style="list-style-type: none"> • Active Academic Support • Proactive Advising • 360° Coaching • Student Basic Needs Support

Purpose: Aligning the college experience to each student's goals for the future

First-Year Experience. Develop structures to connect students with resources that foster their academic and career goals.

Career Exploration. Make information on careers readily available to all students, empowering them to make informed decisions about programs of study that meet their skills, aptitudes, and aspirations.

Academic & Career Alignment. Create a clear connection between learning taking place in the classroom and the competencies associated with careers.

Adult Learner Engagement. Proactively communicate the benefit of a degree or other credential of value to address the unique needs and goals of adults.

Structure: Building course road maps that make the path to a degree or valued workplace credential clear

Math Pathways. Identify the appropriate gateway math course that is aligned with the skills students need for their chosen program of study.

Meta Majors. Provide students with opportunities to explore related programs of study that allow them to make more informed and deliberate decisions about their majors, while making progress toward their degrees.

Academic Maps & Milestones. Delineate the path to graduation and highlight significant milestones that contribute to student success in a clear and comprehensive format.

Smart Schedules. Design schedules that contribute to degree progression and meet the needs of all students.

Stackable Certificates & Credentials. Create competency-driven structures that encourage lifelong learning and attainment of degrees of value.

Momentum: Designing multiple avenues for students to get started, earn credits faster, and stay on track to graduate

Credit for Competency. Recognize the prior learning, skills, and knowledge that students possess and establish mechanisms to award appropriate credits.

Multiple Measures. Consider a variety of placement options that include high school grade point average to provide more ways for students to take a college-level class in their first semester.

Corequisite Support. Design structures and pedagogical approaches for students needing or requesting additional support to succeed in college-level foundational math and English courses that

allow students to complete requirements in a single academic term.

Dual Enrollment. Provide high school students opportunities to take college classes while they are still in high school so they can get an early start on college.

15 to Finish/Stay on Track. Invest in coordinated communications efforts and structural solutions to match student credit loads with the credits needed for on-time graduation for both part-time and full-time students.

Support: Addressing student needs and removing barriers to academic success

Active Academic Support. Provide students with programs and services to help them develop the academic skills needed to be successful.

Proactive Advising. Require advisers to take a preemptive approach that anticipates and helps eliminate concerns, roadblocks, and barriers affecting student success. Through strategic and consistent outreach, ensure that advisers are a resource for students, working with them to create a holistic plan for a timely graduation.

360° Coaching. Provide students with a designated coach to contact whenever issues arise in and outside of the classroom. Train coaches to work with students to find answers, identify appropriate resources, and advocate or intervene on their behalf.

Student Basic Needs Support. Ensure that students have access to food, housing, child care, physical and mental health services, financial assistance, and transportation.

FIGURE 10

Using Metrics Related to Proven Improvement Strategies

METRIC	DESCRIPTION OR PURPOSE	WHAT TO MEASURE	DENOMINATOR/ COHORT*	SOURCE	ADDITIONAL DISAGGREGATIONS‡
POST-COMPLETION SUCCESS					
Median earnings	The middle annual income of individuals who completed a credential, three full years after that completion	Earnings of students after completion	N/A	State or U.S. Department of Education/ College Scorecard	Base additional disaggregations on the college's reforms and the disaggregations used to monitor the success of these reforms. (See subsequent pages of this chart.)
Percentage of students employed in their area of occupational training	Rate at which students are employed in occupational classifications that match the field of study in which they earned a credential, as measured three full years after that completion	Percentage employed in their area of occupational training after graduation	All students who completed a given program of study	State department of education	
Default rate	Percentage of students who took out a loan, entered repayment, and did not make a payment for a full year or more	Average percentage of total borrowers who default	Total borrowers	National Student Loan Data Systems; College Scorecard	
COLLEGE COMPLETION					
Graduation rate	Number of students who completed their program within a specified period of time, divided by the total number of students in a given cohort (e.g., first-time, full-time students) Note: CCA prefers, for full-time students, a 100 percent of expected completion time rate (e.g., two years for a two-year student who starts full time, four years for a four-year student who starts full time) and 200 percent of expected completion time for part-time students.	Number of graduates expressed as a percentage of the cohort	Total students in the cohort, with the cohort typically defined at 100/150/200 percent of expected completion time by the U.S. Department of Education or a flat six years for all cohorts by the National Student Clearinghouse	U.S. Department of Education; National Student Clearinghouse; internal rates; SIS	Base additional disaggregations on the college's reforms and the disaggregations used to monitor the success of these reforms. (See subsequent pages of this chart.)
Total graduates	Unduplicated number of students receiving a credential (can include noncredit students)	Total number of graduates	Total graduating class	SIS	
Time to credential	Time accumulated from first entry to college to credential attainment	Average across all students	N/A	SIS	
Credits to credential	Credits accumulated from first entry to college to credential attainment				

*Exclude students who are on leave for military or missionary service and those who passed away while pursuing their studies.

‡Additional disaggregations are not exhaustive, and they do not replace the standard disaggregations of race/ethnicity, Pell Grant status, gender, age, and enrollment status (full time/part time). They represent CCA priorities for additional disaggregations for a given metric.

METRIC	DESCRIPTION OR PURPOSE	WHAT TO MEASURE	DENOMINATOR/ COHORT*	SOURCE	ADDITIONAL DISAGGREGATIONS‡
LEADING INDICATORS FOR COLLEGE COMPLETION					
Enrollment	Total, unduplicated number of students	Unduplicated total number of students	N/A	SIS	Evening/weekend course enrollment
					First-year experience (FYE)
					Intentional academic plan vs. unknown
					Mini-semester enrollment
					On semester-by-semester academic plan vs. unknown
					Prior dual enrollment participation
Average credit load	Insight into average course load—as an alternative to full-time-equivalent enrollment measure	Average hours enrolled by a student	N/A	SIS	Adviser caseload
					Evening/weekend course enrollment
					FYE
					Intentional academic plan vs. unknown
					Mini-semester enrollment
					On semester-by-semester academic plan vs. unknown
					Prior dual enrollment participation
Credit accumulation rate by year	Average credits earned by enrolled students per year	Credits that count toward graduation, accumulated	All credit-earning students by year	SIS	Adult learners
					Adviser caseload
Count of full-time starters who accumulate 30 credits in their first year	Insight on the number of full-time students on pace to graduate a two-year program in two years or a four-year program in four years	Number of full-time students who attain 30 credits, combined, across all semesters or quarters in a year (can include summer)	Total full-time starters		Awarded credit for competency/prior learning
					FYE
Count of part-time starters who accumulate 15 credits in their first year	Insight on the number of part-time students on pace to graduate a two-year program in four years or a four-year program in eight years	Number of part-time students who attain 15 credits, combined, across all semesters or quarters in a year (can include summer)	Total part-time starters		Prior or current dual enrollment participation

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METRIC	DESCRIPTION OR PURPOSE	WHAT TO MEASURE	DENOMINATOR/ COHORT*	SOURCE	ADDITIONAL DISAGGREGATIONS [‡]
LEADING INDICATORS FOR COLLEGE COMPLETION					
Year-to-year persistence rate	Year-to-year retention rates showing how many students who start in a given semester (e.g., fall 2022) are still enrolled in the same semester the following year (e.g., fall 2023); also can be expressed as a composite year-to-year rate by adding numerators and denominators for fall, spring, and summer	Enrolled students who are enrolled in subsequent year, same semester	All students, excluding those who complete a program of study and leave the college	SIS	Adult learners
					Adviser caseload
					Awarded credit for competency/prior learning
					Evening/weekend course enrollment
					FYE
					Intentional academic plan vs. unknown
					Mini-semester enrollment
					On semester-by-semester academic plan vs. unknown
					Prior dual enrollment participation
Year enrolled					
Credit completion ratio	View of how successful students are at completing enough credits out of those attempted	Passed credits in attempted courses	Total attempted credits	SIS	Adult learners
					Adviser caseload
					Awarded credit for competency/prior learning
					FYE
Gateway course completion rate	How many students complete gateway English or math	Total students who complete gateway English or math in their first year	First-year students	SIS	Prior dual enrollment participation
REAL-TIME METRICS					
Grade point average	Measure of academic achievement across individual courses	Average of total grade points received	Average of total grade points awarded	SIS	FYE
Career exploration rate	Percentage of students who completed a career exploration activity (self-assessment, FYE curriculum requirement) by the end of their first 30 credit hours	Students who completed a career exploration activity by end of their first 30 credit hours	All first-time degree-seeking students in college	Career advising tool or service	Career service/ adviser caseload
Career advising rate	Percentage of students who met with career counselors/academic advisers to discuss career/ program choices	Students who met with career counselors/academic advisers to discuss career/program choices	All students enrolled	Advising system	Career adviser caseload

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[‡]Additional disaggregations are not exhaustive, and they do not replace the standard disaggregations of race/ethnicity, Pell Grant status, gender, age, and enrollment status (full time/part time). They represent CCA priorities for additional disaggregations for a given metric.

METRIC	DESCRIPTION OR PURPOSE	WHAT TO MEASURE	DENOMINATOR/ COHORT*	SOURCE	ADDITIONAL DISAGGREGATIONS‡
REAL-TIME METRICS					
Program selection rate	Percentage of students who selected a program of study by end of their FYE program	Students who selected a program of study by end of their FYE program	All students enrolled in an FYE program	SIS	Adviser caseload By major, especially those program codes that represent general or undecided
Rate of experiential learning offerings	Percentage of programs that integrate experiential learning in the curriculum	Programs that integrate experiential learning in curriculum	All programs of study offered at institution	SIS	Experiential learning type (e.g., apprenticeship)
Rate of experiential learning participation	Percentage of students who participated in an experiential learning activity	Students who participated in an experiential learning activity	All students enrolled	SIS	Experiential learning type (e.g., apprenticeship)
Survey of confidence in program choice	Insight into how confident students are in their career choice	Average survey result on a prespecified scale	All programs of study offered at the institution	Survey	By major, especially those that represent general or undecided
Survey of learner satisfaction	Insight into whether learners feel that the program caters to their needs and facilitates progression	Learners who believe that the institution is catering to their needs and supports their success	All students enrolled	Survey	Adult learners FYE
Percentage of credits completed as awarded for prior learning	Hours awarded by credit for competency	Total hours awarded for credit competency	Total hours awarded	SIS	Adult learners Prior dual enrollment participation
Rate of credit for prior learning leading to subsequent course success	Percentage of students awarded credit for competency who satisfactorily completed subsequent coursework in the prior learning assessment course subject area	Students awarded credit for competency who enrolled in and passed a course in same subject area as the one for which they received credit	All students awarded credit for competency who enrolled in the same subject area as the one they received credit for	SIS	Adult learners Prior dual enrollment participation
Rate of ongoing English and math course success for students who take prerequisite remediation courses or corequisite courses	Percentage of students previously enrolled in corequisite support who completed subsequent coursework in the gateway course subject area	Corequisite support students who enrolled in and passed subsequent courses in the same subject area as the one for which they received corequisite support	Corequisite support students who enrolled in subsequent courses in the same subject area as the one they received corequisite support for	SIS	Adviser caseload Prior dual enrollment participation

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METRIC	DESCRIPTION OR PURPOSE	WHAT TO MEASURE	DENOMINATOR/ COHORT*	SOURCE	ADDITIONAL DISAGGREGATIONS‡
REAL-TIME METRICS					
Dual enrollment success rate	Percentage of high school students who complete a college course through dual enrollment	High school students who enroll in and complete college courses through dual enrollment	All high school students who enroll in college courses through dual enrollment	SIS	Per course
Rate of algebraic offerings	Percentage of non-STEM programs that require college algebra	Non-STEM programs that require college algebra	All non-STEM programs	SIS	Adviser caseload
					By math pathway (e.g., literacy, statistics, STEM)
Program momentum rate	Percentage of students who enrolled in at least nine hours associated with their program of study in their 30 credit hours	Students who enrolled in at least nine hours associated with their program of study in their first 30 credit hours	All students who enrolled in at least 30 credit hours	SIS	Adviser caseload
					On semester-by-semester academic plan vs. unknown
Rate of major change	Percentage of students who changed major before a prespecified number of credit hours (e.g., 30)	Students who changed major before a prespecified number of credit hours (e.g., 30)	All students who enrolled in at least a prespecified number of credit hours (e.g., 30)	SIS	Adviser caseload
					On semester-by-semester academic plan vs. unknown
Meta-major relationship validation	Insight into whether students understand how meta majors introduced them to their major and associated careers	Students who understand how activities and assignments in meta majors introduced them to their majors and careers	All students	Student survey	On semester-by-semester academic plan vs. unknown
Percentage of academic programs depicted through default pathways	Percentage of programs with a comprehensive semester-by-semester academic plan	Programs with a comprehensive semester-by-semester academic plan	All programs	Course catalog or SIS	STEM vs. non-STEM
Enrollment rate onto comprehensive, semester-by-semester plans	Percentage of students enrolled who have a comprehensive academic plan	Degree-seeking students enrolled in a program with an academic plan	All degree-seeking students enrolled	SIS/graduation audit system/ advising software	Adviser caseload
					STEM vs. non-STEM

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METRIC	DESCRIPTION OR PURPOSE	WHAT TO MEASURE	DENOMINATOR/ COHORT*	SOURCE	ADDITIONAL DISAGGREGATIONS‡
REAL-TIME METRICS					
Program plan alignment rate	Percentage of students on track based on their academic plan	Students enrolled in courses aligned with their academic plan	All degree-seeking students enrolled in a program with an academic plan	SIS/graduation audit system/ advising software	Adviser caseload
					Evening/weekend course enrollment
					FYE
					Intentional academic plan vs. unknown
					Mini-semester enrollment
					Prior dual enrollment participation
Withdrawal rate	Percentage of student withdrawal from courses	Number of withdrawals per semester	All grades earned in courses per semester, across all students	SIS	Adviser caseload
					Evening/weekend course enrollment
					FYE
					Intentional academic plan vs. unknown
					Mini-semester enrollment
					On semester-by-semester academic plan vs. unknown
					Prior dual enrollment participation
Stackable credentials per program	Percentage of programs that integrate stackable credentials	Programs with stackable credentials integrated into the curriculum	All programs	Course catalog or SIS	STEM vs. non-STEM
Adoption rate	Percentage of students using a given academic resource (e.g., student service, activity, or technology tool)	Students using the resource	All students enrolled	Swipers, sign-ins, activity monitors	Adviser caseload
					Evening/weekend course enrollment
					FYE
Adoption rate (hours)	Average hours of use for students who use a given resource	Number of hours students availed themselves of resources	All students who used resource; or all students who <i>should</i> use resource	Swipers, sign-ins, activity monitors	Adviser caseload
					Evening/weekend course enrollment
					FYE
Tool/service satisfaction rate	Insight into whether students understand how using academic resources supports their success	Average survey score compared with the range of possible values	N/A	Survey	Adviser caseload
					Evening/weekend course enrollment
					FYE

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METRIC	DESCRIPTION OR PURPOSE	WHAT TO MEASURE	DENOMINATOR/ COHORT*	SOURCE	ADDITIONAL DISAGGREGATIONS‡
REAL-TIME METRICS					
Average caseload size	How many students are assigned, on average, to each student adviser	Average number of students assigned across all advisers or a given advising segment (e.g., professional advisers vs. faculty advisers)	N/A	Advising database/ software	Adviser type (e.g., faculty vs. professional adviser) By credit-hour band or academic year
Student contacts average	For students who see an adviser, duration and number of visits	For students who see an adviser, average number of visits/ hours per visit	N/A	Advising database/ software	Adviser type (e.g., faculty vs. professional adviser) By credit-hour band or academic year
Advising satisfaction score	Student satisfaction with advising	Average survey score compared with the range of possible values	N/A	Advising database/ software	Adviser type (e.g., faculty vs. professional adviser) By credit-hour band or academic year

*Exclude students who are on leave for military or missionary service and those who passed away while pursuing their studies.

‡Additional disaggregations are not exhaustive, and they do not replace the standard disaggregations of race/ethnicity, Pell Grant status, gender, age, and enrollment status (full time/part time). They represent CCA priorities for additional disaggregations for a given metric.

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