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## **Abstract**

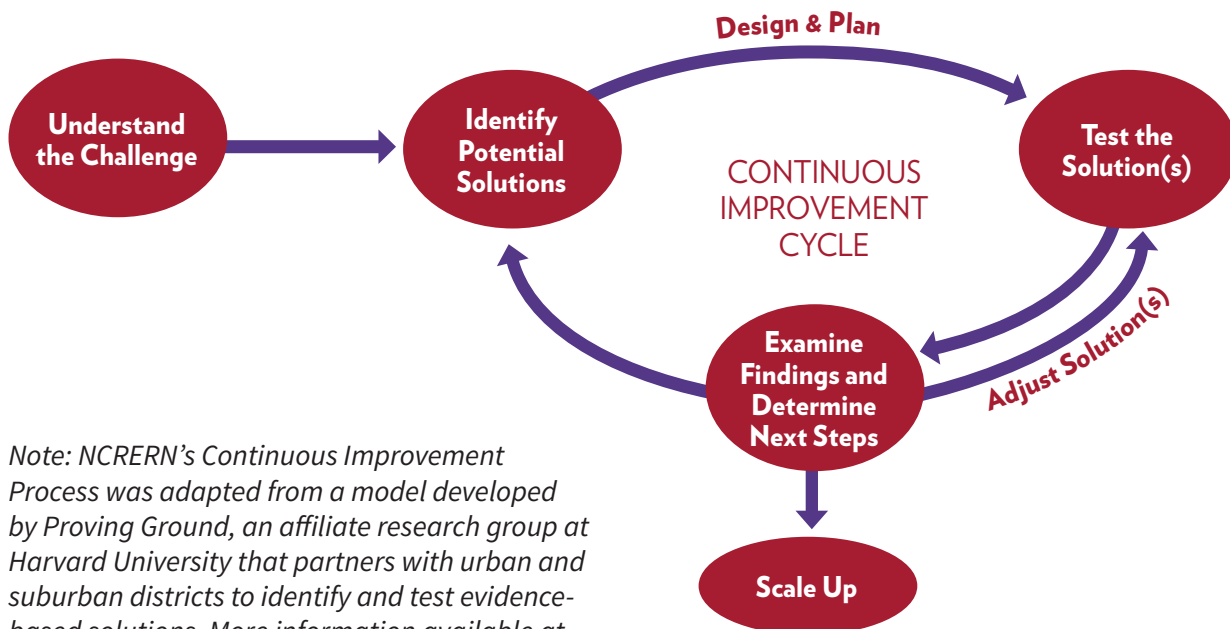
In the Spring of 2019, the Center for Education Policy Research at Harvard University launched the National Center for Rural Education Research Networks (NCRERN) with funding from the U.S. Department of Education's Institute of Education Sciences. This overview provides a step-by-step description of NCRERN's continuous improvement model. NCRERN's model helps partner districts identify obstacles to their students' success, select evidence-based solutions to address these challenges, and pilot and test the efficacy of these solutions to help inform districts' next steps.

# An Introduction to NCRERN's Continuous Improvement Model

The mission of the National Center for Rural Education Research Networks (NCRERN) is to expand the use of evidence-based decision-making in rural education. NCRERN partners with networks of rural school districts to generate and evaluate strategies for improving student outcomes. NCRERN uses a continuous improvement model designed to build the capacity of rural districts, engage district staff as key decision makers throughout the process, and foster collaboration and cross-district learning, while generating evidence about what works in rural education.

## Process Overview

NCRERN uses a continuous improvement cycle to support district partners as they identify obstacles to their students' success, select evidence-based solutions to address these challenges, and test out innovative solutions. NCRERN's model is grounded in data and is designed to ensure districts use high-quality evidence to inform decisions about the solutions they implement. Districts are encouraged to seek input and guidance from diverse stakeholders in their community—including educators, students, and families—to align solutions to their own contexts. Additionally, NCRERN supports a network of rural districts, rather than a single district, as they engage in the continuous improvement cycle. This network model allows rural districts to connect with and learn from other rural districts grappling with similar challenges and to work together to identify research-based solutions.



*Note: NCRERN's Continuous Improvement Process was adapted from a model developed by Proving Ground, an affiliate research group at Harvard University that partners with urban and suburban districts to identify and test evidence-based solutions. More information available at [provingground.cepr.harvard.edu/approach](http://provingground.cepr.harvard.edu/approach)*



## Step 1: Understand the Challenge

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To begin, districts review their data diagnostics report prepared by the NCRERN team, which includes historical data trends and predictive analyses. Districts examine patterns in their students' data, focusing on potential areas for growth and improvement, as well as identifying specific student groups that may need targeted supports. Next, districts engage in a root cause analysis process intended to explore and unpack possible underlying causes of the patterns observed in the data. Drawing from their own experiences and knowledge of their district's unique context, district staff work together to identify a range of possible explanations for why a certain challenge may exist. For example, for districts struggling with high rates of absenteeism, staff will consider why their students might miss school and possible barriers to their attendance. The root cause analysis process focuses the conversation on understanding the “why” underpinning their data trends to ensure alignment between the solutions tested and the challenges they seek to address.



## Step 2: Identify Potential Solutions

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During step 2, districts brainstorm and review potential solutions to target specific root causes discussed in step 1. Districts are encouraged to focus on strategies or programs that could address challenges within their locus of control, and that can be tested during a single academic year. NCRERN also provides districts with a catalog of potential evidence-based programs and strategies aligned to the challenges and root causes identified in step 1. NCRERN creates this catalog by conducting literature reviews, talking to experts in the field, and discussing options with districts. Districts then rank their list of intervention options using an impact-effort analysis. This activity asks districts to consider the anticipated impact a particular intervention might have and compare that to how much effort would be required to implement the intervention. Districts narrow their list of interventions to those that are anticipated to have a positive impact on student outcomes while placing minimal burden on school staff to implement and sustain.

To be able to test whether an intervention is effective, a minimum number of participants are required to know—with confidence—whether something worked or not. In rural districts, the small numbers of students can make it difficult for a single school to conduct a research study. To account for this, NCRERN districts participate in a voting process to select interventions to test collectively as a network. If multiple districts pilot the same intervention, their results can be pooled together to create a large enough sample size to evaluate a program's effectiveness. NCRERN provides districts with information about the minimum number of districts that need to agree to test a given intervention.



### Step 3: Design & Plan

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Once districts select an intervention to test, they plan how the intervention will be implemented within their context and create an action plan. District staff prepare to launch their new program by using a human-centered design process. This framework centers the planning process on how individuals involved will experience the program—both as intended benefactors (i.e., students/families) and implementors of the program (i.e., school staff). Using a human-centered design approach helps ensure an intervention can be adopted with fidelity and that those involved understand both the benefits and expectations of participation.

To begin, districts review core components and key events of their selected intervention, and how those components may be perceived and experienced by students, families, and relevant staff. Districts plan out key intervention events, including when events will occur, in what environment events will take place in, which people need to be involved, and what tools are needed to carry out the events. Additionally, districts are encouraged to discuss messaging around the intervention, with particular attention to how they will communicate with staff, students, and families about the purpose and goals of the program.

During this step, districts also reflect on how the intervention will be integrated into their context. Staff may discuss how the intervention aligns with or complements existing programming or initiatives, as well as how it addresses gaps in currently available supports. While each intervention has certain core components that all districts in the network implement, individual districts also have flexibility to adjust and adapt the intervention to fit their unique needs.

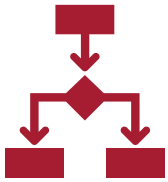


### Step 4: Pilot & Test

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Once districts have established a plan for implementation, they are ready to launch their intervention. To evaluate the initiative, NCRERN randomizes students, households, grade-levels or districts to participate in the intervention. By administering the intervention to a randomly selected portion of their target audience rather than every participant in it, districts will have data to determine whether a strategy is having a positive impact on students' outcomes.

Throughout the year, districts receive on-going implementation support from the NCRERN team. Staff are encouraged to review and reflect on implementation data in real time. Using these data, they can identify aspects of the intervention that are going well, where stakeholders may need additional support, and adjust practice to ensure successful implementation.



## Step 5: Examine Findings & Determine Next Steps

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At the end of the piloting period, the NCRERN team generates results for network districts. For each of the interventions tested, districts review the findings prepared by the NCRERN team, which summarize: Did the intervention improve student outcomes?

Based on the network findings, NCRERN provides one of three recommendations for the next steps: scale-up, redesign and retest, or discontinue the program. Recommendations take into consideration the impact of the intervention (to what degree did the program improve outcomes?), magnitude of the impact (how much were outcomes improved?), and the level of effort required to implement. For example, if an intervention yields meaningful positive results for students, districts are encouraged to scale up the program to all eligible students or continue implementing the program. If the results do not definitively indicate improved outcomes, but districts have continued interest in the intervention, districts may choose to redesign the program and retest. If an intervention is found to negatively impact outcomes or has no impact and is deemed too costly or burdensome to implement, districts are advised to discontinue, which allows districts to redirect resources to more promising interventions.

Based on recommendations provided by NCRERN, district teams reflect on their own experiences implementing their program and decide how to proceed for the next year. Considering districts' implementation experiences alongside impact findings provides a more nuanced understanding of the viability of the programs piloted by NCRERN districts and enables districts to make informed decisions about future programming.