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Work Disruption, Worker Health, and Productivity: Evidence from Teaching

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About two percent of work time is lost annually in the U.S. due to worker absence, the vast majority of which is caused by poor worker health. Poor health may significantly reduce productivity even if it does not result in absences. The authors of this report use detailed panel data on teachers and students in New York City to study the impact of work disruptions on labor productivity. Teaching is an attractive setting in which to study the impact of worker health and absences on productivity. It is one of the largest occupations in the U.S. and a substantial body of research documents that teacher quality has a sizeable impact on students' academic achievement. Existing studies have generally assumed teachers work continuously over the school year, but, in practice, nearly all teachers are absent at some point each year and a significant fraction take extended periods of leave due to health shocks. While a substitute teacher is present in the classroom during these disruptions in teaching, the authors find clear evidence that work disruptions have a significant negative impact on student achievement. Extended work disruption prior to student exams is estimated to cause achievement to fall by 0.07 and 0.04 standard deviations in math and English, respectively. These effects are roughly equivalent to moving from the 50th to the 30th percentile of the teacher quality distribution, or substituting a novice teacher for a teacher with four years of experience. The authors estimate that an additional 10 absences prior to student exams reduces achievement by 0.022 and 0.008 standard deviations in math and English, respectively. Teacher health also negatively impacts productivity. There is a significant negative relationship between student achievement and teacher absences after the exam for illnesses that are certified by a doctor, but extended disruptions and daily absences that occur after the exam for other reasons are not significantly related to student achievement. These findings support the interpretation that teacher health issues have important causal impacts on student learning above and beyond the effects of work disruptions.