

Assessment of Substitute Teachers

April 10, 2018



**MILWAUKEE
PUBLIC SCHOOLS**



Presenters: Matt Chason, Manager, Office of Accountability and Efficiency
Michael Trueblood, Manager, Office of Accountability and Efficiency

Darienne B. Driver, Ed.D.
Superintendent

RESOLUTION 1718R-007

- Disaggregation and Trends
 - Fill Rates
 - Absenteeism
- Analysis of Sub Pool

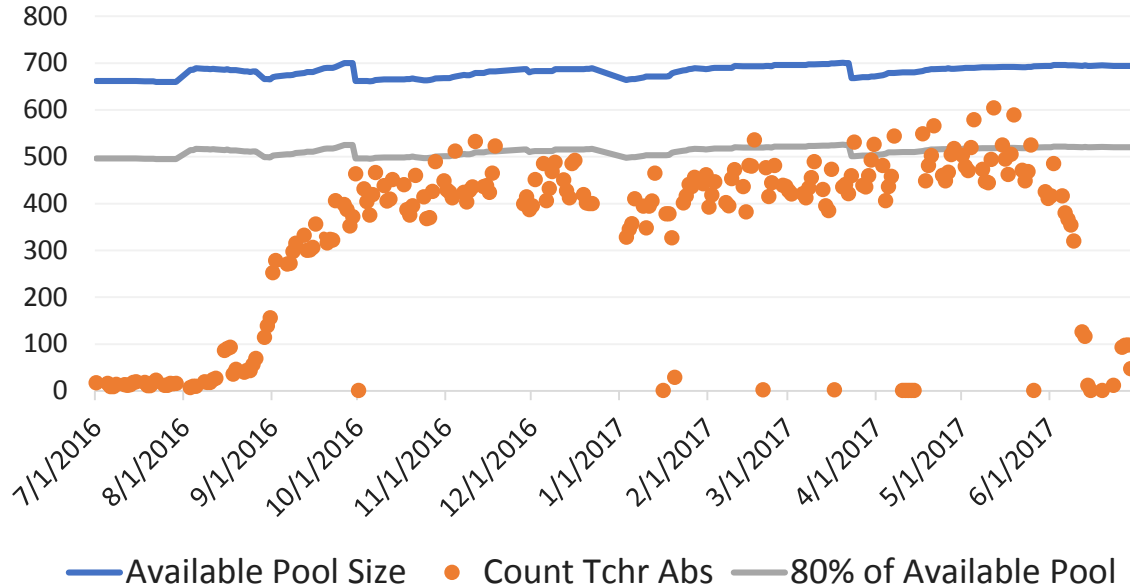
FUNDAMENTALS

In Fiscal Year 2017,

$$\frac{61,806 \text{ Absence Fills}}{74,550 \text{ Absence Events}} = 82\% \text{ Fill Rate}$$

IS DEMAND GREATER THAN SUPPLY?

Size of the Teacher Sub Pool
Compared to Teacher Absence Events
by Day - Fiscal Year 2017



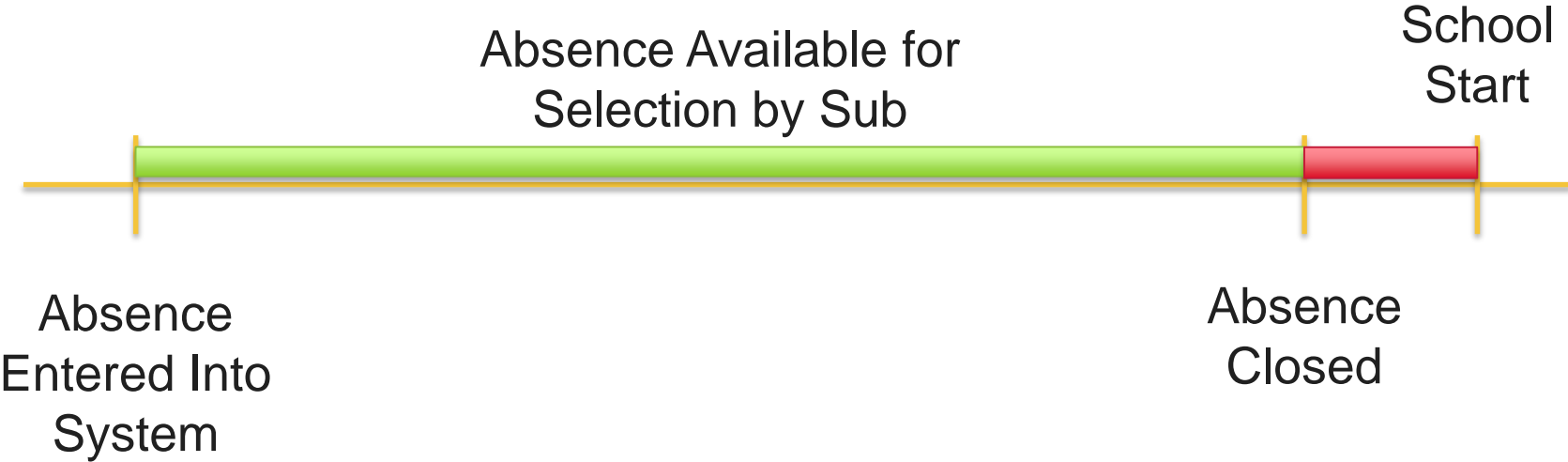
Between Sept and June

	Daily Median
Sub Pool Size	686
# of Abs Events	429

Typically at 63% of sub pool capacity



WHAT IS THE PROCESS?



SELECTION BY SUBSTITUTES

Data for decision to select or not

- Date/Time
- School
- Vacancy
- Teacher/Class

Which of these is associated with low fill rates?

SCHOOL TYPE

Fill Rate

Group	2015	2016	2017
Elementary School	82%	79%	78%
Elementary/Secondary Combined	89%	89%	88%
High School	92%	92%	91%
Middle School	84%	78%	77%

DAY OF THE WEEK

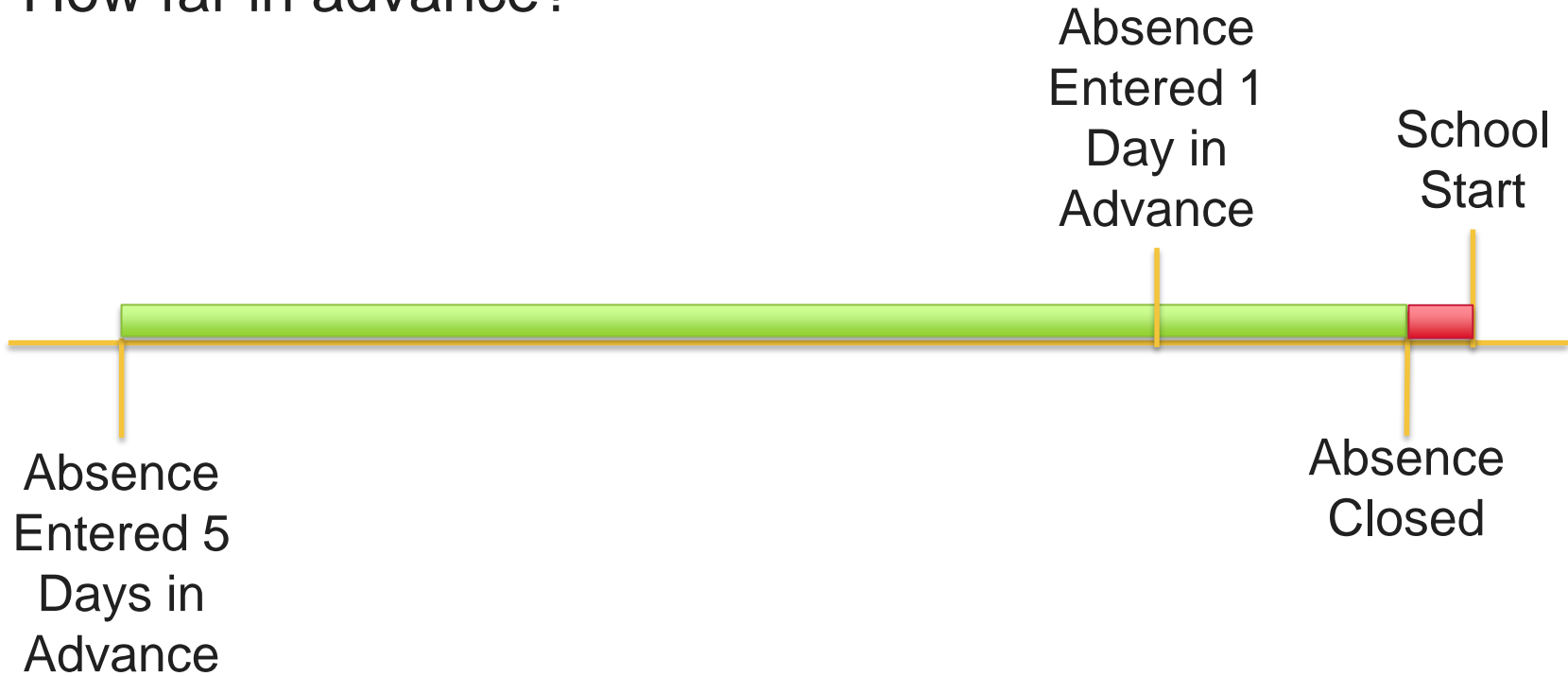
Fill Rate

	2015	2016	2017
Monday	84%	82%	80%
Tuesday	88%	86%	85%
Wednesday	88%	87%	86%
Thursday	87%	83%	84%
Friday	79%	77%	77%



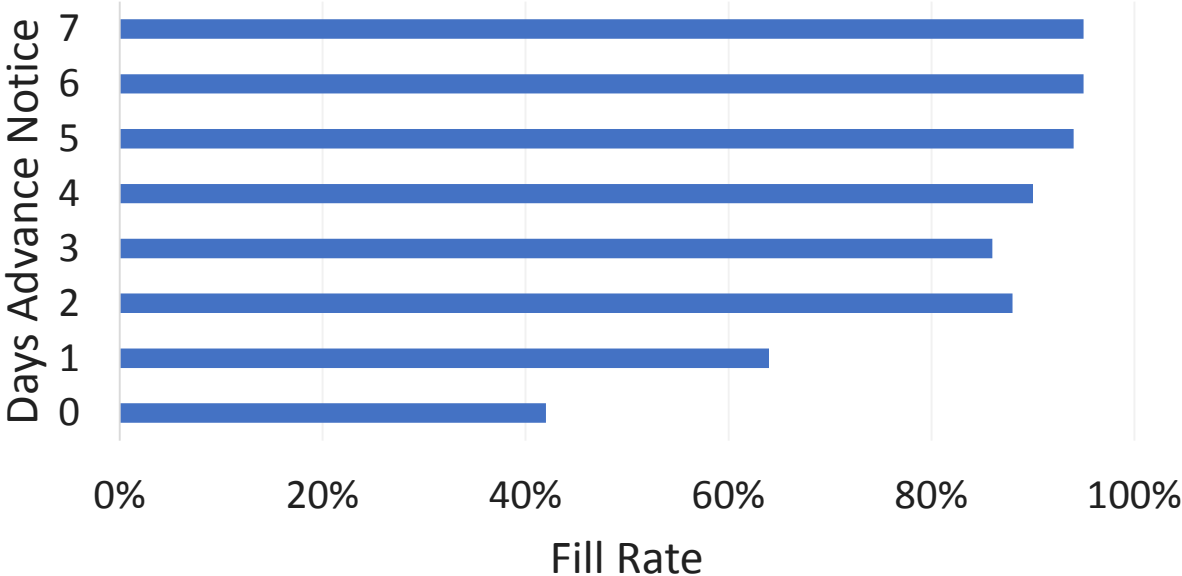
ADVANCE NOTICE

How far in advance?



ADVANCE NOTICE

Fill Rate Compared to Advance Notice Fiscal Years 2015-2017



DECISION TO SUB CORRELATED WITH FACTORS

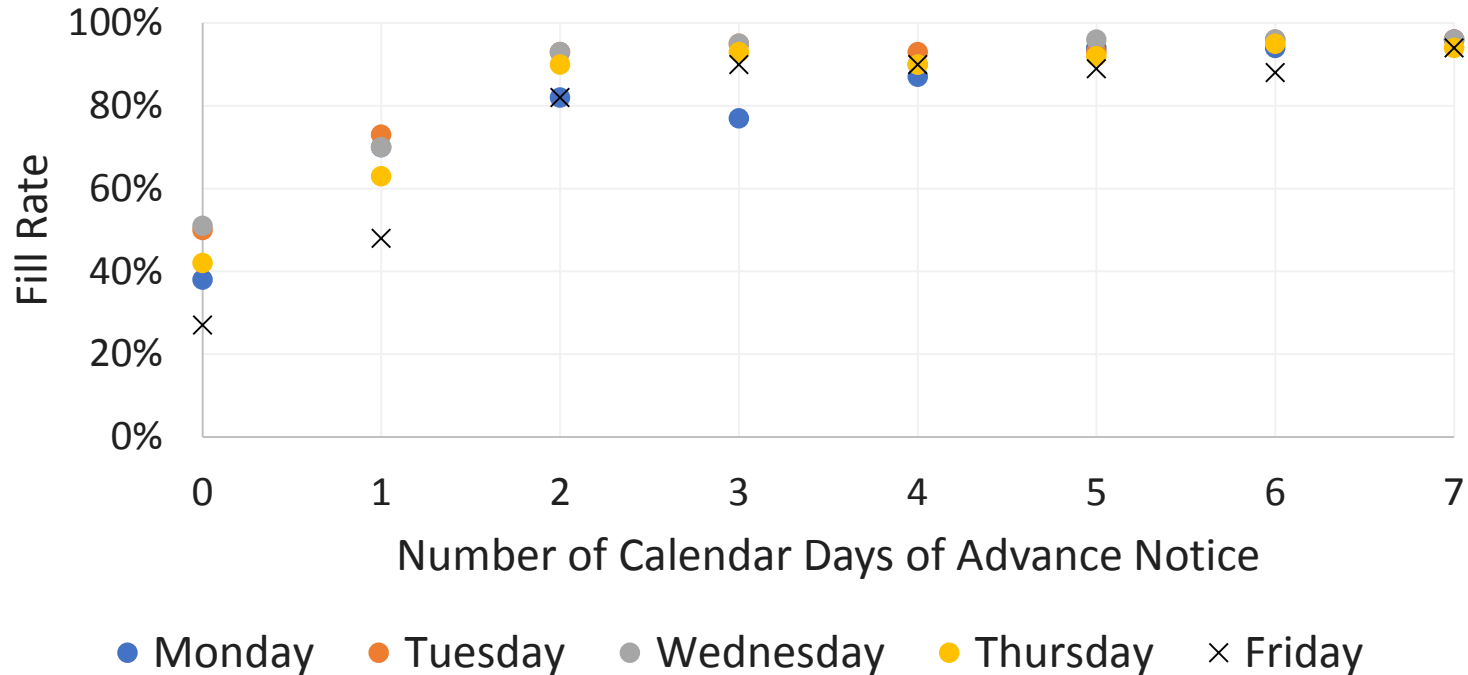
Factors associated with decision

- How Much Advance Notice
- Day of Week
- School Type

Do the factors
interact together?

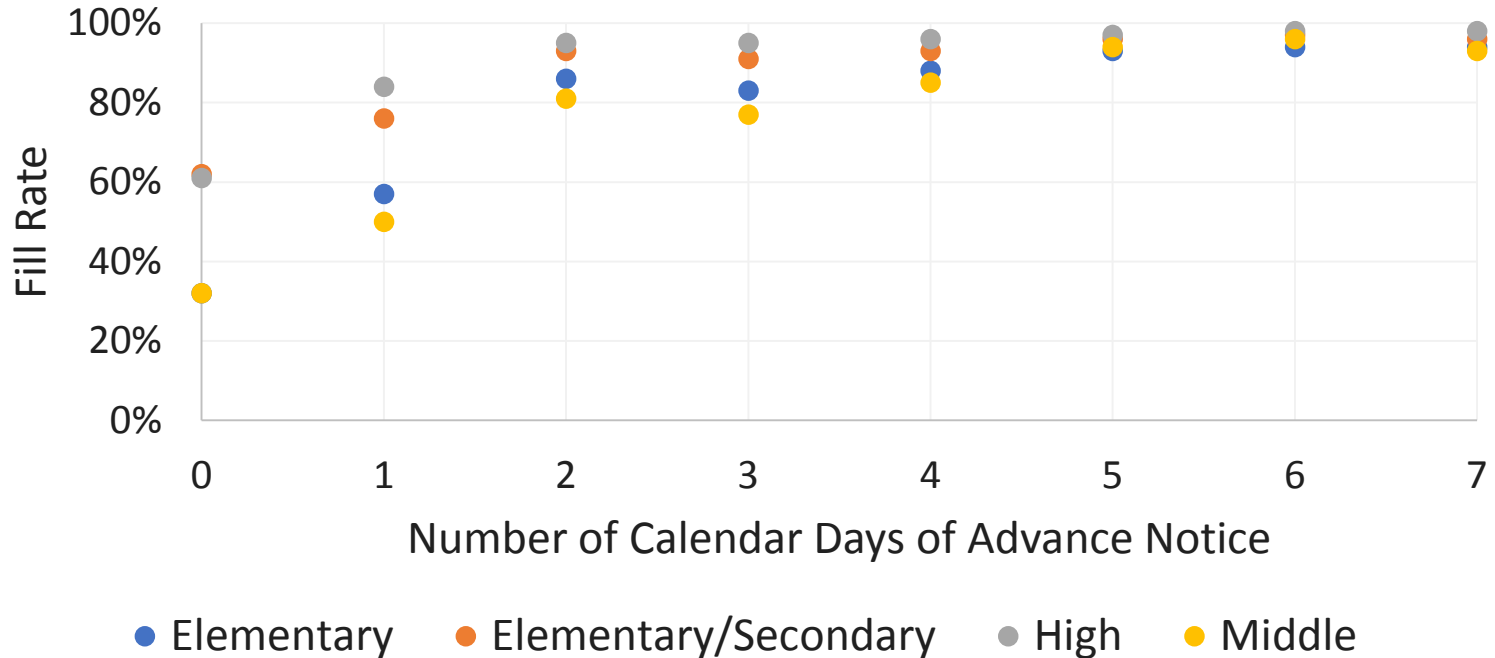
How Do FACTORS INTERACT?

Fill Rates by Day of Week Compared to Advance Notice - Fiscal Years 2015-2017



How Do FACTORS INTERACT?

Fill Rates by School Type Compared to Advance Notice - Fiscal Years 2015-2017



COMPOUNDING EFFECTS OF FACTORS

Fill Rates on Fridays
Fiscal Years 2015-2017

Calendar Days of Advance Notice	Elementary/ Secondary		High	Middle
	Elementary	Secondary		
4	88%	93%	96%	85%
3	87%	93%	96%	85%
2	77%	91%	90%	72%
1	41%	63%	67%	31%
0	20%	48%	38%	17%

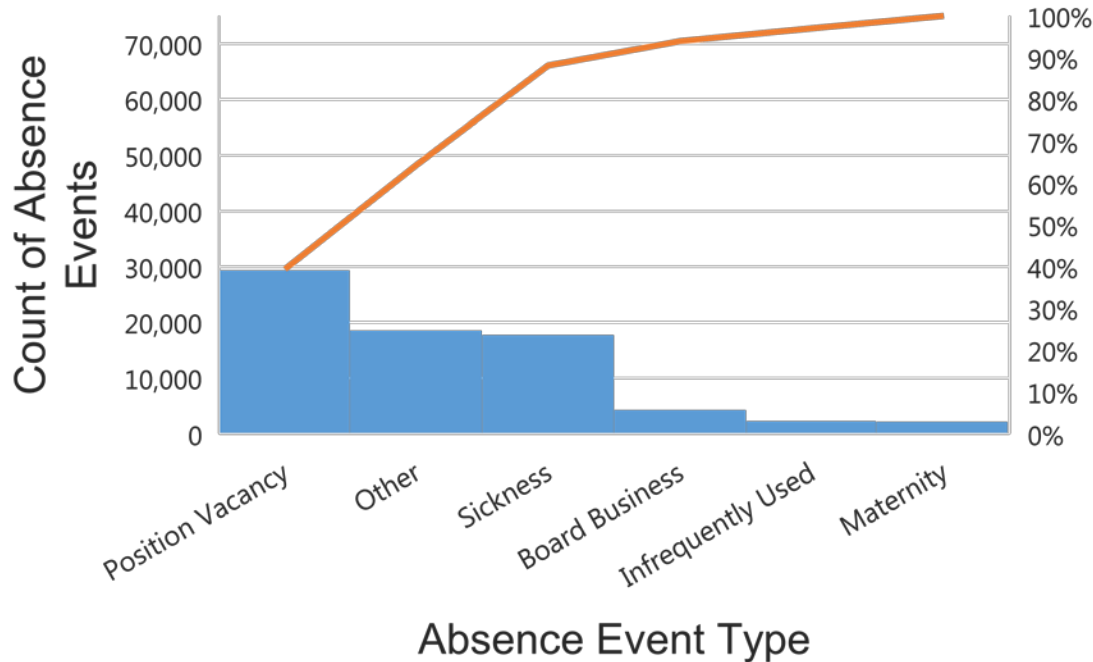
WHEN ARE EVENTS ENTERED?

Calendar Days of Advance Notice Fiscal Years 2015-2017

Absence Type	0	1	2	3	4	5
(Vacancy Position)	669	1,699	603	607	509	438
Board Business	137	839	373	329	231	163
Other	1,259	3,795	1,498	1,310	981	592
Sickness	5,889	6,739	778	547	386	229

WHAT ARE THESE ABSENCE EVENTS?

Pareto Chart of Teacher Absence Events -
Fiscal Year 2017



40% of absence events
are due to unfilled
teacher vacancies

WHAT IS THE IMPACT OF VACANCIES?

Between Sept and June

	Daily Median
Sub Pool Size	686
# of Vacancies	172

Vacancies occupy 25%
of available sub pool

Vacancies have the
attraction of increased pay
with long-term assignment

TEACHER ABSENCE DISTRIBUTION

Sick Days Used

	2015	2016	2017
1st Quartile	3.2	3.5	3.9
Median	5.9	6.2	6.5
3rd Quartile	10.0	10.3	10.7

Sick hour usage has increased by more than a half day of instruction at each quartile

TEACHER SICK LEAVE ACCRUAL

July 2013

Hired Before

Hired After

Max Accrual/Year	100 hours
Max Accrual/Life	1160 hours
Incentive Not to Use	Board Subsidized Retiree Health 90% of Max After July 2013

Max Accrual/Year	100 hours
Max Accrual/Life	1160 hours
Incentive Not to Use	None

NOTE: Only teachers hired prior to 7/1/13 are eligible for health insurance subsidy. Must have 90% accrual of max i.e. 1044 hours (and 20 years of service and age 60 years / 55 years under the ERW).



INCENTIVIZING ATTENDANCE

Scenario	Assumptions	Savings
Least Favorable	Little behavior change	\$(31,000)
Likely	Some behavior change	\$47,000
Most Favorable	Moderate behavior change	\$160,000

RECOMMENDATIONS

Direct the Administration and the OAE to examine impacts of:

- Changing maximum lifetime sick accrual
- Changing maximum yearly sick accrual
- Incentivizing attendance for all non-administrative school staff
- Requiring five working days notice for miscellaneous leave
- Creating a system to monitor advance posting of absences

Thank you.

Presenters:

Matt Chason, Manager, Office of Accountability and Efficiency

Michael Trueblood, Manager, Office of Accountability and Efficiency



Darienne B. Driver, Ed.D., *Superintendent*