



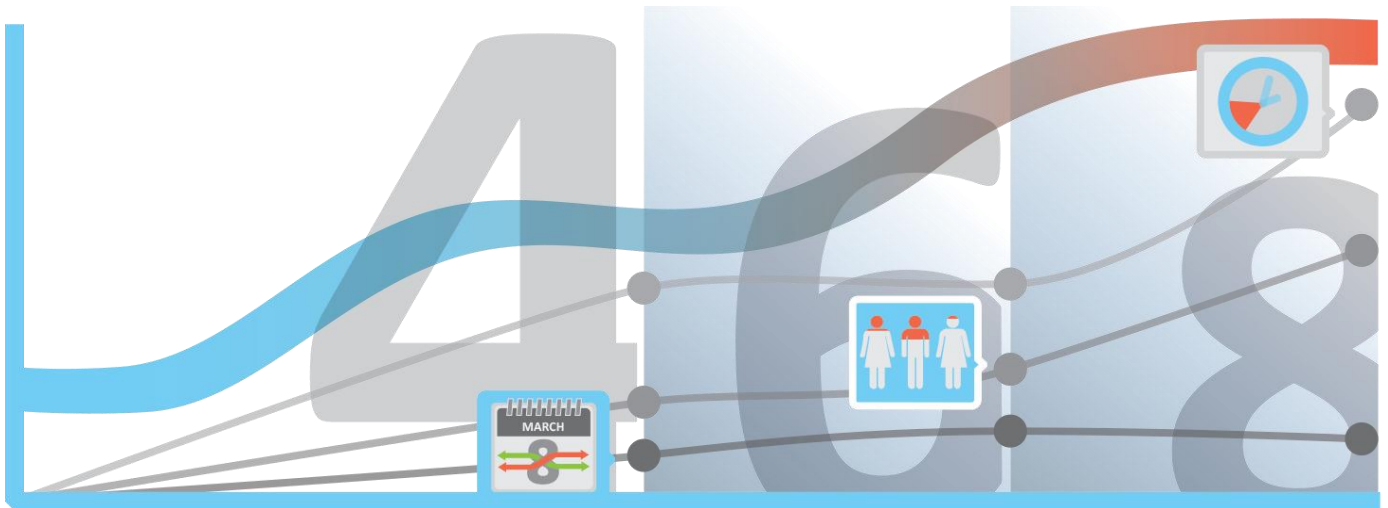
white paper

Scheduling for Maximum Efficiency

**A Metrics-Based Comparison of Four,
Six, and Eight Week Schedule Periods**

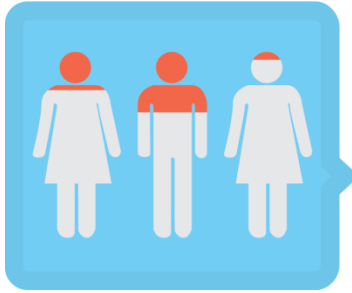
Four, Six, and Eight Week Schedules

Hospitals across the country utilize a mix of four, six, and eight week schedule periods. Avantas conducted research of inpatient nursing units at more than 75 hospitals and tracked how the various scheduling frequencies impacted two important financial factors. These metrics were FTE leakage (employees not working their committed FTE) and incidental worked time (employee unexpectedly clocking time). The research also looked at the amount of core staff floating and the number of shift changes associated with the three schedule periods



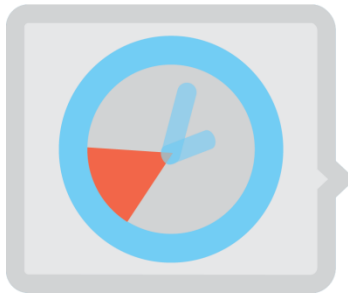
Departments typically work within particular schedule period lengths for a variety of reasons. Some choose eight-week patterns to limit the number of times they have to go through the scheduling process. Others use six-week patterns because they easily facilitate a cyclic pattern for employees with a commitment to work every third weekend. Units might choose four-week patterns because they prefer to track/manage commitments in shorter increments.

Definitions



FTE Leakage

Avantas coined this term more than a decade ago in reference to the hours a staff member has not worked but should have based on their FTE commitment. For example, an RN with an FTE of 0.8 but only working 50 hours every two weeks results in FTE leakage of 14 hours (64-hour commitment – 50 hours worked).



Incidental Worked Time

This refers to additional time a staff member is on the clock before or after the start or end of their original shift or during a scheduled meal break. Generally, in nursing, diagnostics or therapies, there is sound clinical justification for 40 percent of incidental worked time.



Change to Shift

Change to shift constitutes any updates made to a scheduled shift following schedule submission. Examples of shift changes include trades, late PTO requests, etc.

FTE Leakage

FTE Leakage¹

Schedule Period	Leakage Per Employee	Annualized Cost Per Employee	Annualized Cost Per Unit	Annualized Cost Per Facility
4WEEK	0.1	\$1,768	\$26,520	\$265,200
6WEEK	0.15	\$2,652	\$39,780	\$397,800
8WEEK	0.3	\$5,304	\$79,560	\$795,600

A savings of more than \$500,000 annually (at the facility level) is observed among those units that utilize a four-week schedule period versus those on an eight-week schedule period. FTE leakage happens as a result of behaviors like staff call-ins (and then not making up those hours), but it very often is the result of staff not being scheduled to their FTE at the time of schedule submission. FTE leakage requires organizations to fill those vacant shifts with more expensive forms of contingency staff, whether that is other core staff working extra or in overtime, float pool staff, or external contract staff.

¹ FTE Leakage Calculations:

Annualized per Employee – Leakage per Employee x 2,080 (80 hours full time equivalent x 26 pay periods) multiplied by \$8.50 industry standard replacement cost

Annualized Cost Per Unit – Cost per Employee x 15 (average number of employees per unit)

Annualized Cost Per Facility – Cost per Unit x 10 (average number of unit per facility)

Normalized by Pay Period and Number of Employees. Example: Four-week schedules had 6,048 changes after schedule submission. This was divided by six pay periods and 1,412 employees to eliminate unit size contributing to metric.

Period: 4/14/13 – 6/22/13

Incidental Worked Time

Incidental Worked Time ²				
Schedule Period	IWT	Annualized Cost Per Employee	Annualized Cost Per Unit	Annualized Cost Per Facility
4WEEK	0.13	\$5,865	\$87,975	\$879,746
6WEEK	0.12	\$5,414	\$81,207	\$812,074
8WEEK	0.25	\$11,279	\$169,182	\$1,691,820

Hospitals with units that have four-week schedule periods save more than \$800,000 annually compared to hospitals with units on eight-week schedules. The reasoning for this drastic difference in IWT is due to the improved staffing outcomes and reduced floating among units that utilize a four-week schedule period. As shown in the following chart, core staff floating is three times higher on units that operate under an eight-week pattern versus a four-week pattern. When an RN floats it is not uncommon that he or she has incidental worked time, in addition to lower morale.

Schedule Period	Core Staff Floating
4WEEK	0.44
6WEEK	0.92
8WEEK	1.31

² IWT Cost Calculations:

Annualized per Employee – IWT per Employee x 2,080 (80 hours full time equivalent x 26 pay periods) multiplied by \$21.69 average rate of pay

Annualized Cost Per Unit – Cost per Employee x 15 (average number of employees per unit)

Annualized Cost Per Facility – Cost per Unit x 10 (average number of unit per facility)

Normalized by Pay Period and Number of Employees. Example: Four-week schedules had 6,048 changes after schedule submission. This was divided by six pay periods and 1,412 employees to eliminate unit size contributing to metric.

Period: 4/14/13 – 6/22/13

Change to Shift

Schedule changes are an unavoidable reality within healthcare. Individuals have obligations outside of work that can cause the occasional need to trade shifts with a coworker or request PTO. What is controllable however is the frequency of schedule changes. As displayed in the

Schedule Period	Transactions per Employee ³
4WEEK	0.7
6WEEK	1.18
8WEEK	1.1

chart, the number of schedule changes was lowest among units that utilize a four-week pattern. Units that utilize eight- and six-week schedule patterns experience roughly two to three times the number of schedule changes, respectively.

While there is not a large financial cost associated with increased schedule changes, they do have negative consequences and soft cost ramifications. Schedule changes take valuable time away from managers, some of whom report spending as much as 50% of their time performing scheduling and staffing duties. Additional manager time spent on administrative tasks is time not being spent with patients, families, and on staff development. This time away from core responsibilities has negative effects on quality and staff satisfaction. Decreased quality affects revenue, and staff dissatisfaction is linked to turnover which can have a tremendous negative financial impact, often cited at two to three times the cost of the employee's salary.

³ Change to Shift Calculations:

Normalized by Pay Period and Number of Employees. Period: 4/14/13 – 6/22/13

Summary

Annualized Costs Per Facility

Schedule Period	FTE Leakage	Incidental Worked Time	Total Annualized Cost
4WEEK	\$265,200	\$879,746	\$1,144,946
6WEEK	\$397,800	\$812,074	\$1,209,874
8WEEK	\$795,600	\$1,691,820	\$2,487,420

Hospitals with units that observe four- and six-week schedule periods spend less than half on the two metrics Avantas measured for this study than those hospitals with units that utilize an eight-week schedule period.

Eight-week schedule periods result in substantially more floating, FTE leakage, and incidental worked time. While proponents of this longer schedule period may argue that it saves time by not having to create a schedule as often, that reasoning speaks more to inefficiencies associated with their schedule creation process than it does to the frequency of creating them.

Managers who create eight-week schedules to save time are arguably losing that savings, and then some, by the amount of time they spend staffing to fill shifts created by FTE leakage and processing the shift trades and other staff requests that invariably come with scheduling people up to two months in advance.

At the most basic level, scheduling efficiency comes down to the automation of best practices and the ability to staff to an accurate prediction of volume rather than to a flat budget. All else being equal, the shorter the timeframe associated with building a schedule the more accurate it should be, both in terms of predicted census volumes and the ability of staff members to know what accommodations they will need to balance their work-life responsibilities.

About Avantas

Developers of the HELM™ methodology (healthcare enterprise labor management), Avantas is devoted to serving the healthcare industry. Its proprietary approach to managing labor consists of consulting services and a scheduling and productivity solution, Smart Square®. This comprehensive approach provides its clients with tailored best practice labor management strategies designed to drive substantial and sustaining cost and quality improvements across the enterprise through automation.



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