

Improvement Cymru Academy Toolkit Guide



Takt Time

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Introduction

Takt time is a crucial concept in manufacturing that is equally useful in healthcare.

Takt time is the rhythm or pace at which a process should work at, to meet customer demand whilst ensuring wastes are kept to a minimum. The customer in healthcare processes are usually patients. Sometimes, Takt time is sometimes referred to 'the beat of the drum'. Takt time represents the time available per unit of production.

Rationale

Using Takt time can be beneficial to some areas of healthcare.

1. Raises awareness of the demand and supply needed.

Takt time allows you to calculate the pace at which your process should operate. Without using Takt time is it near impossible to analyse patient demand or re-design processes to meet or exceed patient expectations.

2. Fewer errors

There are only so many hours in a day and staff have a specific amount of time to deliver services. When you perform takt time, it allows you to see how much time you actually need resulting in fewer errors and smoother operations.

3. Decreases the burden.

4. Improving the flow of work can reduce the burden on staff, reduce stress and helps to provide I have a clear focus. Having a chaotic work environment can impair cognition leading to errors. **Less frequent delays**

By organising work to Takt time, staff have a clearer understanding of what is needed, and patients will receive more timely care due to more streamlined processes. Staff will gain satisfaction from knowing that they are meeting customer demand.

Background

The work 'Takt' comes from the Japanese word 'Takuto Taimu' which is derived from the german word 'Taktzeit' which translates as 'cycle time'. Using Takt Time dates all the way back to the 16th Century in Venice where shipbuilders used it to synchronise their work. Takt Time has also been used by Henry Ford and by German Aviation

Industries. Toyota incorporated Takt Time into the Toyota Production System (TPS). It is a central element to the Just-In-Time Pillar.

When would you use Takt Time?

Takt time in healthcare can ensure efficient and synchronised processes. It can help to manage flow within healthcare processes. It can also be used to help guide clinical staffing decisions. By understanding the demand, resources – including staff, can be allocated based on that demand. It helps with process re-design because understanding demand allows workflows to be adjusted, wastes can be eliminated, and it will improve the overall efficiency of processes.

How do you use Takt Time?

You can use Takt Time within your processes using the following steps.

Step 1: Identify the total available production time

You should start by identifying the total available production time for a clinic (outpatients, diagnostics etc...). When taking the total available production time into account make sure you account for the operational hours where you actually do the tasks and deduct breaks that are taken by staff during their shift.

Step 2: Determine the Average Patient Demand

Next, you will need to calculate the average demand based on scheduled capacity.

Step 3: Determine Cycle Time

Cycle time represents how long one step in the process takes. To adapt Takt Time for healthcare staffing, combine the Takt time with a cycle time specific to the area you are trying to staff. e.g. how long it takes a patient to see a nurse or how long they spend with a Phelbotomist.

Step 4: Calculate the Takt time

There is a specific formula for Takt Time which is:

$$\text{Takt Time} = \frac{\text{Total Available Production Time}}{\text{Average Customer Demand}}$$

You will need to use the data from step one and step two to calculate this.

Example: Pharmacy

Let's consider a Pharmacy department.

Firstly, you will need to consider the total number of operational hours within one shift. We know that the total number of operational hours for the pharmacy is 8 hours which is 480 minutes. This is the total available production time.

Secondly, you will need to think about the number of prescriptions requests daily. The Pharmacy states that they receive 200 referrals in one shift. This is the average customer demand.

$Takt\ Time = 480 / 200 = 2\ minutes\ and\ 24\ seconds$

The Takt Time for this process is 2 minutes and 24 seconds. Not every prescription needs that exact time to fill it in and out. By sticking with this demand, pharmacies can meet the patient demand without inefficiencies.

What next?

To undertake Takt Time choose a small process to start with. Educate your teams with training courses about Takt Time and encourage them to work in accordance this the rhythm of Takt Time.

Helpful Tips

To perform Takt Time you will need accurate and current data in order to assess the customer demand. Share the vision with staff about what you want to do and perform a 'What's in it for me' analysis to create buy-in to be able to undertake Takt Time within your organisation.

Additional Resources

If you are interested in learning more about how improvement practices can benefit your workplace, we offer a range of training courses. Visit our website for more information. <https://phw.nhs.wales/services-and-teams/improvement-cymru/improvement-cymru-academy/> or email us

improvementcymruacademy@wales.nhs.uk to find about the improvement courses we offer.

References

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