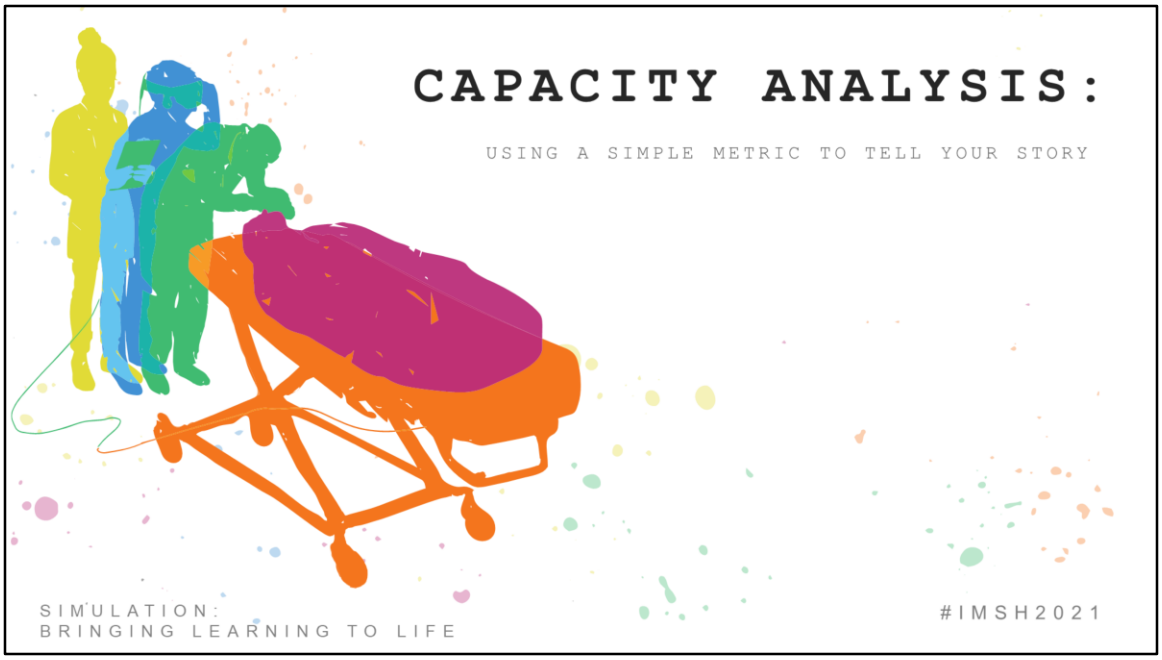

Welcome to “Capacity Analysis: Using a Simple Metric to Tell Your Story.” We are thrilled to be with you today and even more thrilled that you chose to share some of your time with us. We’re all busy, and we’re all tired from the pandemic, so it truly is an honor to be with you today.

WELCOME

Mike Shepherd

SIMULATION OPERATIONS MANAGER
MAINE MEDICAL CENTER I PORTLAND, MAINE, USA

Grace Gephardt

DIRECTOR OF SIMULATION EDUCATION
ARKANSAS CHILDREN'S HOSPITAL I LITTLE ROCK, ARKANSAS, USA

SIMULATION:
BRINGING LEARNING TO LIFE

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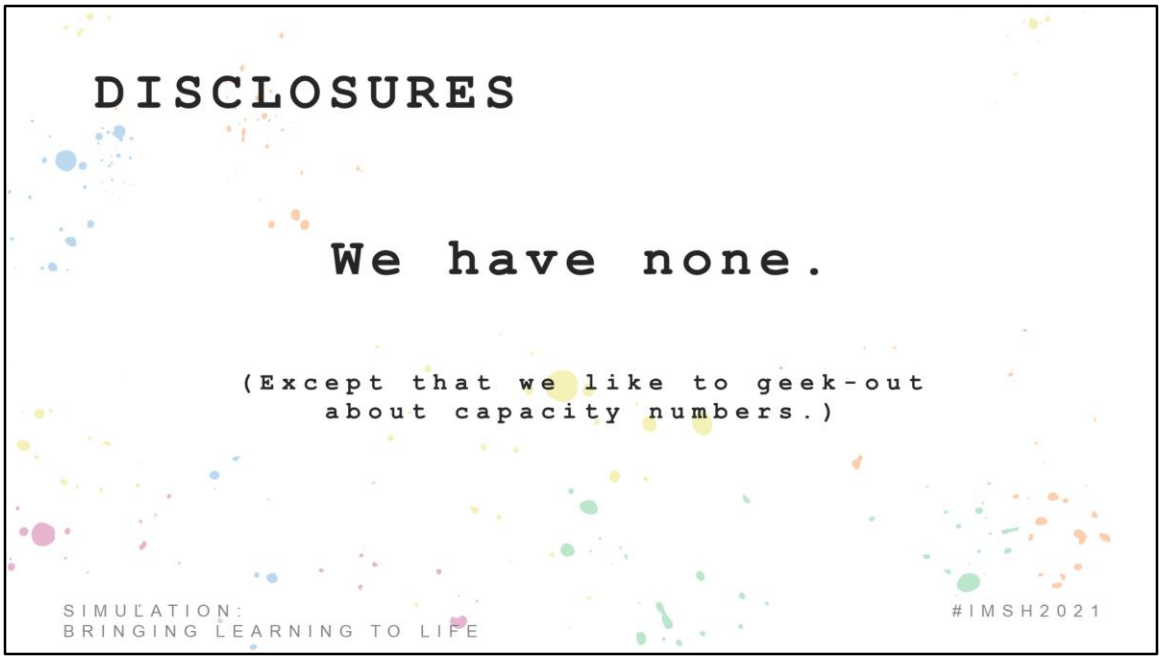
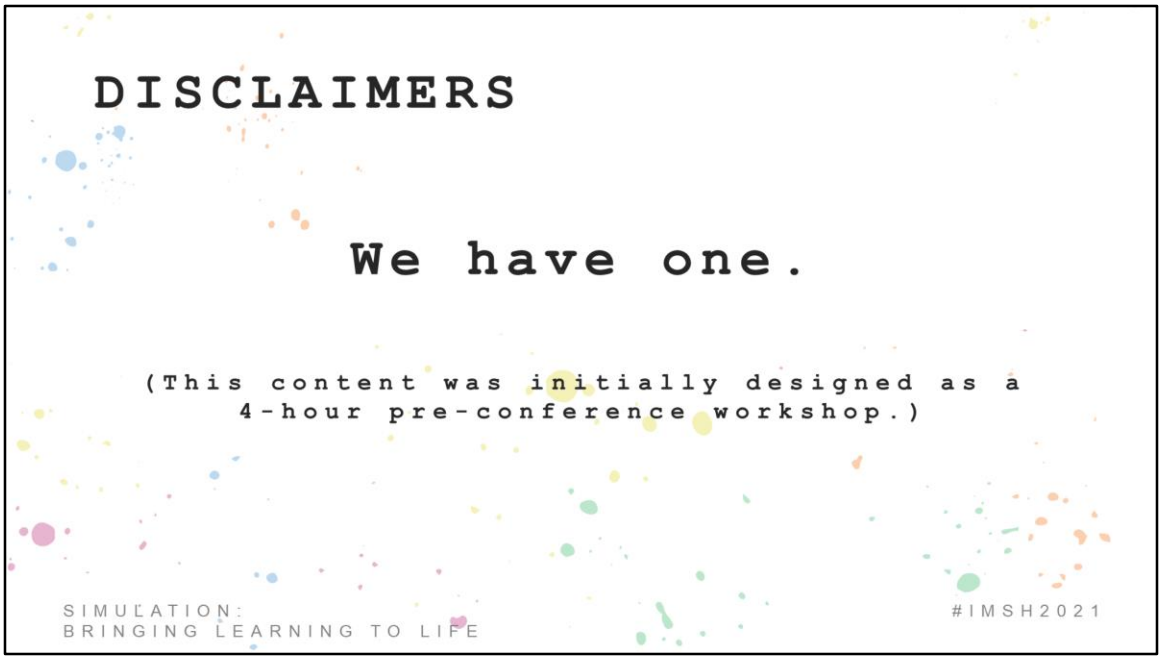


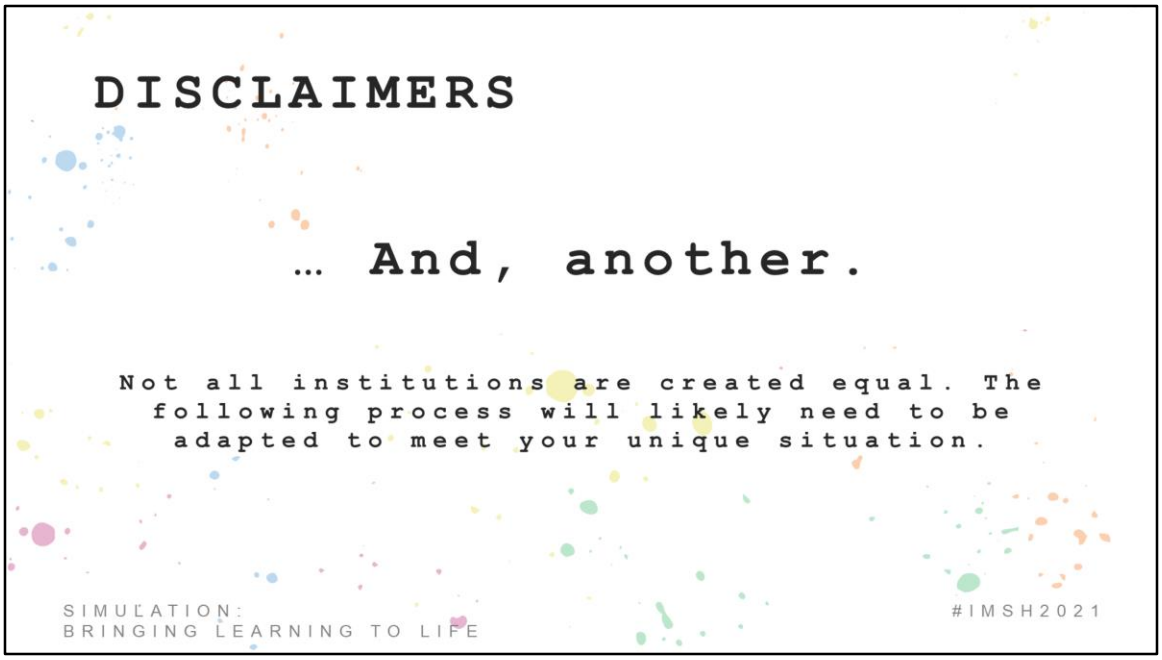
We have to disclose that we have no disclosures. We do like to geek-out about capacity number, so consider yourself warned. ☺



However, we do have a **disclaimer**. This was proposed as a 4-hour precon workshop. That is to say, we had intended on being able to sit down with a small group of folks to help them walk through the steps of determining their own capacity. Instead, we will take an hour – probably less – to walk you through the steps that will allow you begin this work on your own.

Contrary to the title of this course, some folks can find this process to be complicated. If you have questions as we're talking, put them in the chat. We'll also stop periodically to answer them along the way.

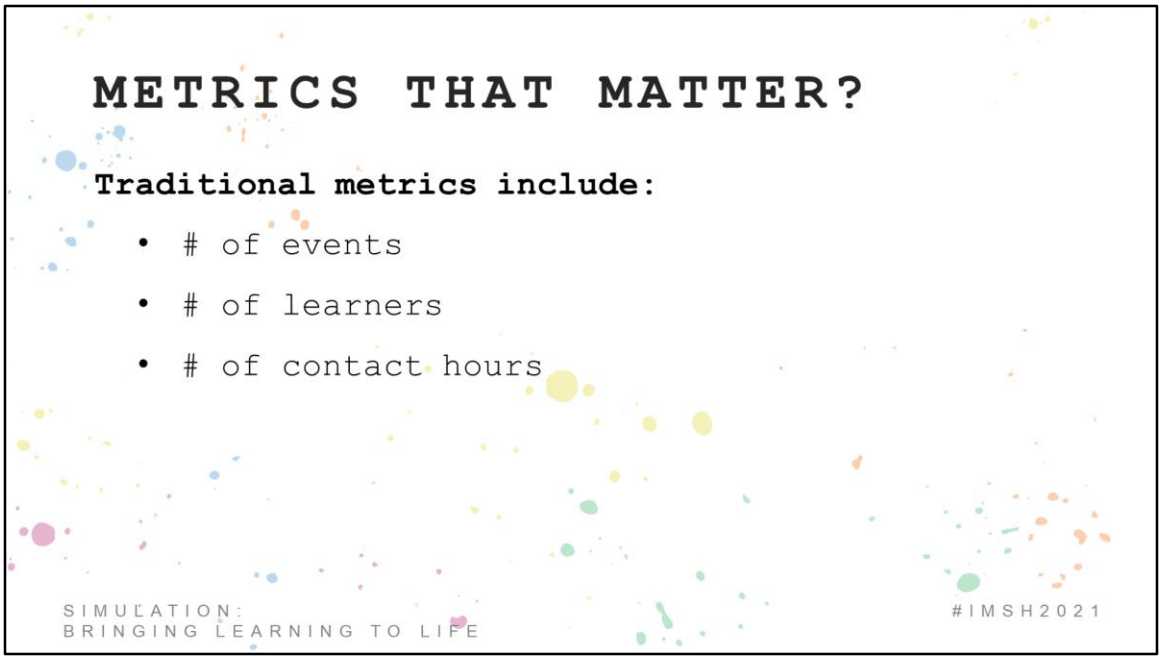
For some, it may take some time to get to place where you can really tell a compelling story to justify additional staffing. Once you have the data, completing the analysis is rather straight-forward.



And, by the way, as we go through this, you may say, “My center doesn’t look like this or that.” That’s fine. Think about this from a theoretical construct with possible adaptations to your unique environment. As the SSH Accreditation Site Reviewers say, “If you’ve seen one sim program, you’ve seen one sim program.”

OBJECTIVES

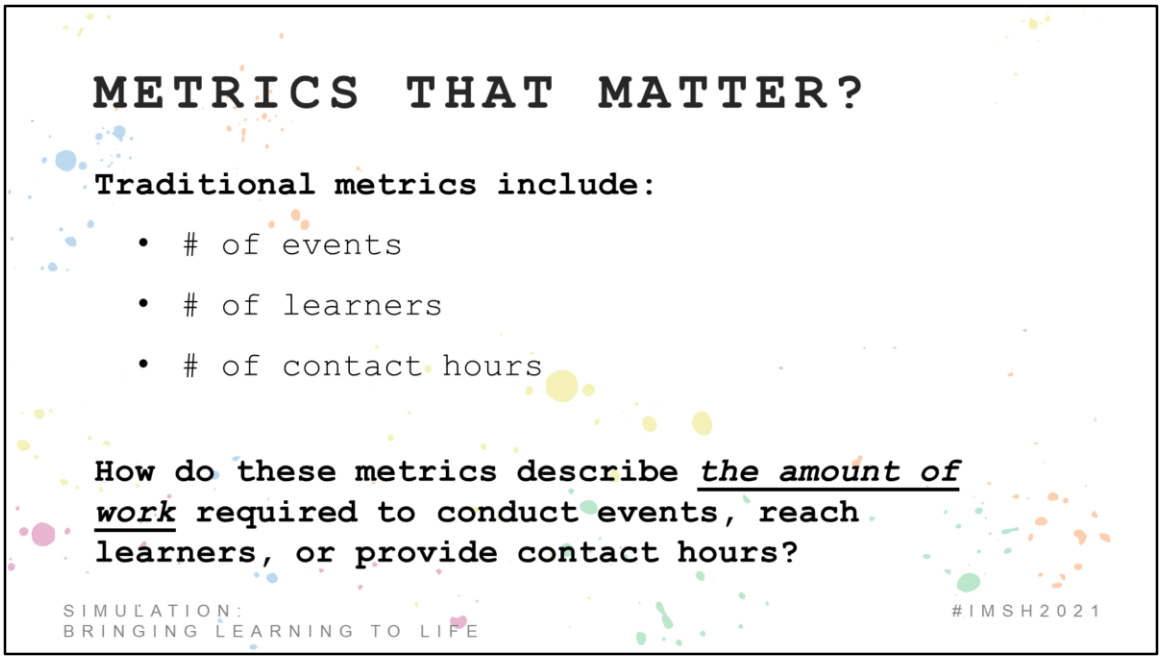
1. Identify metrics relevant to measuring staffing needs
2. Explain a process for measuring staffing capacity
3. Perform a staffing capacity analysis of a simulation program



If you know how many events you did last year or last month or last week, put in it the chat. [Wait.]
If you know how many learners you taught last year, or last month or last week, put it in the chat. [Wait.]
If you know how many learner contact hours you provided last year or last month or last week, put it in the chat. [Wait.]

How do these metrics describe *the amount of work* each event takes??

Spoiler Alert: They don't!



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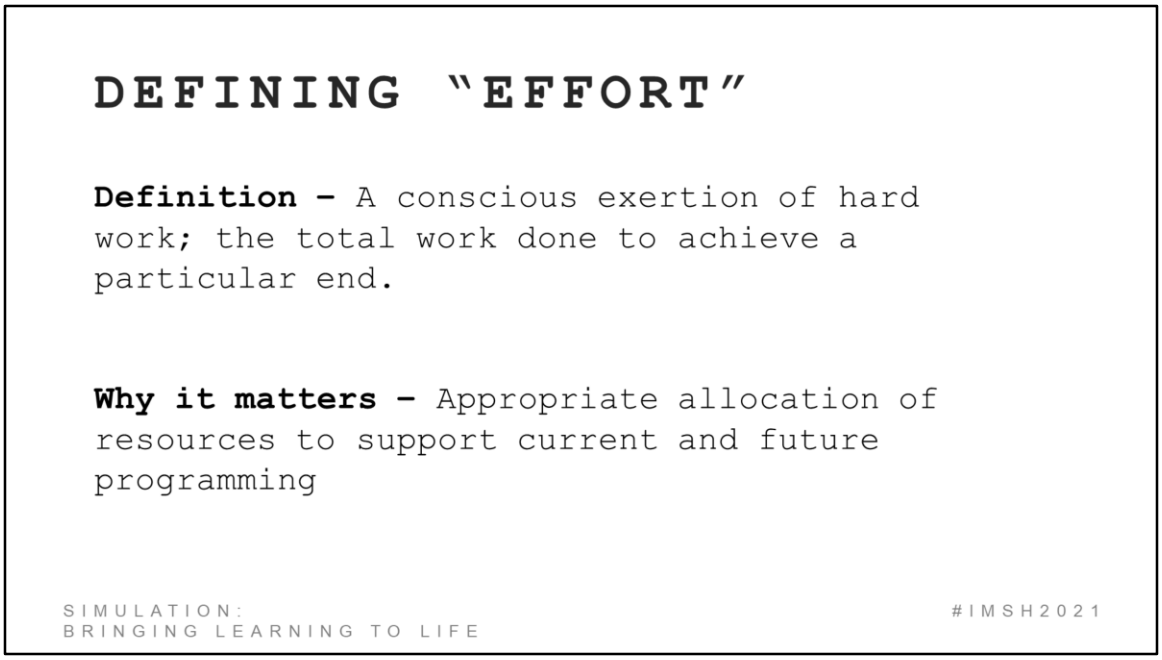


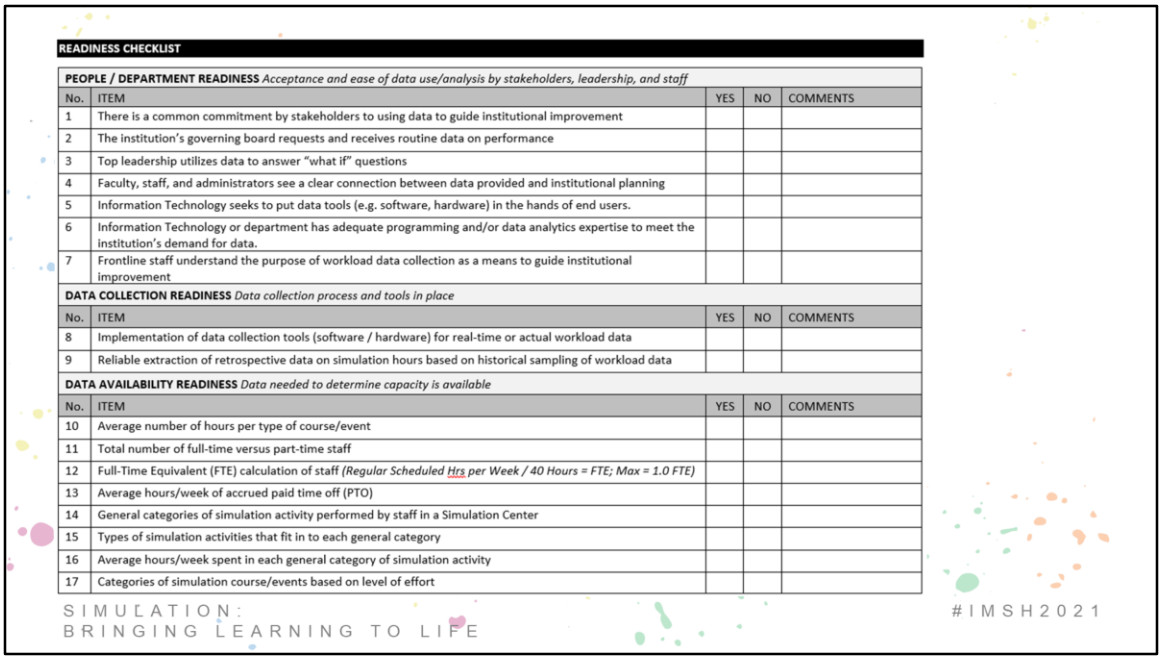
The traditional metrics on the previous slide are impressive for VIP tours and in soliciting philanthropic gifts but are of little use otherwise.

The "simple" metric teased in the title of this course is Effort. Which is to say, how much "work" is required to produce the events you are charged with producing? We're going to show you how we measure for our programs in order to plan accordingly for curricular revisions, new programming, and/or growth in learner populations.

There are 3 steps to follow in determining your capacity.

Step 1: Determine Available Effort
Step 2: Determine Required Effort
Step 3: Subtract Step 2 from Step 1 to determine over/under.

But this is where it starts to get tricky. We've created a workbook to guide you, which we'll go through on the following slides. The document is accessible in the chat.



READINESS CHECKLIST

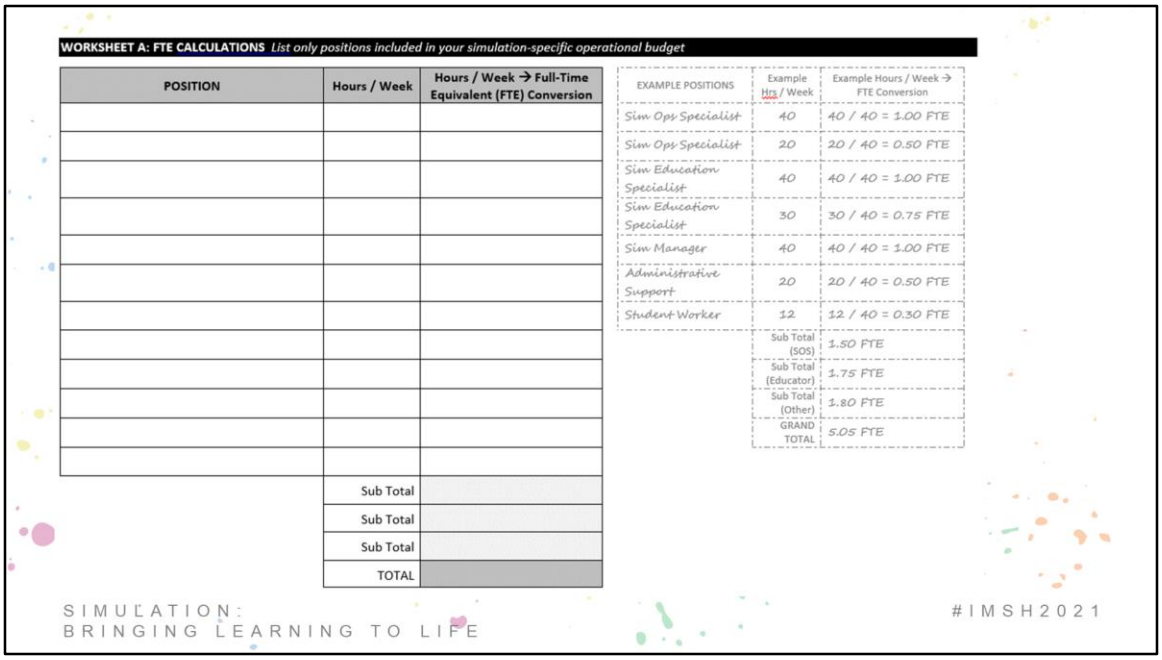
PEOPLE / DEPARTMENT READINESS *Acceptance and ease of data use/analysis by stakeholders, leadership, and staff*				
No.	ITEM	YES	NO	COMMENTS
1	There is a common commitment by stakeholders to using data to guide institutional improvement			
2	The institution's governing board requests and receives routine data on performance			
3	Top leadership utilizes data to answer "what if" questions			
4	Faculty, staff, and administrators see a clear connection between data provided and institutional planning			
5	Information Technology seeks to put data tools (e.g. software, hardware) in the hands of end users.			
6	Information Technology or department has adequate programming and/or data analytics expertise to meet the institution's demand for data.			
7	Frontline staff understand the purpose of workload data collection as a means to guide institutional improvement			
DATA COLLECTION READINESS *Data collection process and tools in place*				
No.	ITEM	YES	NO	COMMENTS
8	Implementation of data collection tools (software / hardware) for real-time or actual workload data			
9	Reliable extraction of retrospective data on simulation hours based on historical sampling of workload data			
DATA AVAILABILITY READINESS *Data needed to determine capacity is available*				
No.	ITEM	YES	NO	COMMENTS
10	Average number of hours per type of course/event			
11	Total number of full-time versus part-time staff			
12	Full-Time Equivalent (FTE) calculation of staff *(Regular Scheduled Hrs per Week / 40 Hours = FTE; Max = 1.0 FTE)*			
13	Average hours/week of accrued paid time off (PTO)			
14	General categories of simulation activity performed by staff in a Simulation Center			
15	Types of simulation activities that fit in to each general category			
16	Average hours/week spent in each general category of simulation activity			
17	Categories of simulation course/events based on level of effort			

The first page in the workbook is a readiness checklist, which we don't have the time today to get into. This checklist includes 3 areas for you to consider as you begin this process:

People/Dept Readiness – Does your staff and leadership accept and use data to make decisions?
Data Collection Readiness – Do you have the processes and tools in place to collect data?
Data Availability Readiness – Have you or are you collecting the right data?

The point isn't necessarily to check "yes" today on all of these but rather this serves as a SWOT analysis to identify potential barriers and the gaps you'll need to fill to complete this work. Doesn't mean you can't start to collect and crunch the data, but it may not be received well. The more support you gain for this process as you embark on it, the more likely you are to be successful.

*****If you don't define the measurement of your success, someone else will and they will not choose metrics that are meaningful.*****



WORKSHEET A: FTE CALCULATIONS *List only positions included in your simulation-specific operational budget*

POSITION	Hours / Week	Hours / Week → Full-Time Equivalent (FTE) Conversion
	Sub Total	
	Sub Total	
	Sub Total	
	TOTAL	

EXAMPLE POSITIONS	Example Hrs / Week	Example Hours / Week → FTE Conversion
Sim Ops Specialist	40	40 / 40 = 1.00 FTE
Sim Ops Specialist	20	20 / 40 = 0.50 FTE
Sim Education Specialist	40	40 / 40 = 1.00 FTE
Sim Education Specialist	30	30 / 40 = 0.75 FTE
Sim Manager	40	40 / 40 = 1.00 FTE
Administrative Support	20	20 / 40 = 0.50 FTE
Student Worker	12	12 / 40 = 0.30 FTE
	Sub Total (SOS)	1.50 FTE
	Sub Total (Educator)	1.75 FTE
	Sub Total (Other)	1.80 FTE
	GRAND TOTAL	5.05 FTE

We'll start with Worksheet A – FTE Calculations

Each worksheet has an example to reference (hover over with curser). I'll walk you through the steps using actual data from my program.

Remember the first step is to determine Available Effort. Start to do this by identifying your program's total # of FTEs. This may be fairly straight forward for some. But we recognize that may not be the case for all. This is particularly important to determine if your program has partial FTEs on staff, which will become more apparent on Worksheet B.

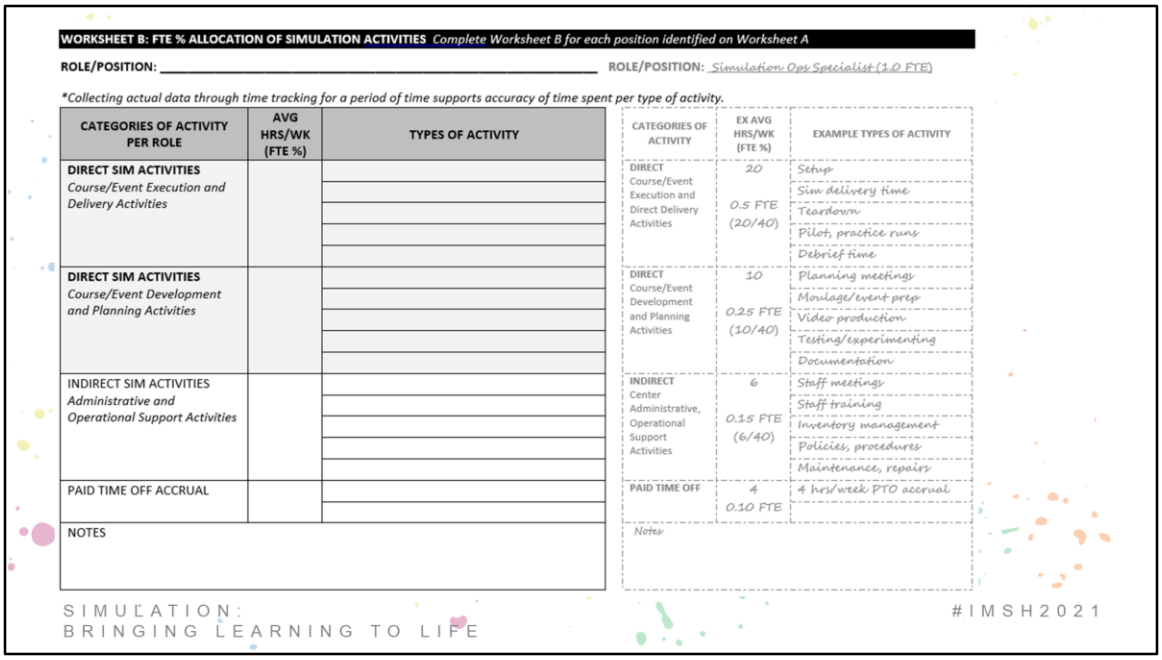
Worksheet A instructs you to list all positions provided for in your simulation operational budget, and the number of hours for each of those positions per week. Divide those hours by 40 to determine the FTE.

Two notes:

1. DO NOT include faculty/staff that belong to another department. It takes you the same amount of work to put on an event regardless of whether a learner group has 1 faculty, 2 faculty, or 10 faculty. Also, those faculty will leave with those

learners, leaving you without anyone for the next event. So you cannot count those individuals in your FTE count. They don't belong to you.

2. Use subtotal boxes to differentiate between positions who are directly involved in simulation production vs those who are not. Notice the example on the right, there are 3 subtotals – operations specialists, educators, and "other."



WORKSHEET B: FTE % ALLOCATION OF SIMULATION ACTIVITIES *Complete Worksheet B for each position identified on Worksheet A*

ROLE/POSITION: _____ **ROLE/POSITION:** *Simulation Ops Specialist (1.0 FTE)*

**Collecting actual data through time tracking for a period of time supports accuracy of time spent per type of activity.*

CATEGORIES OF ACTIVITY PER ROLE	AVG HRS/WK (FTE %)	TYPES OF ACTIVITY
DIRECT SIM ACTIVITIES *Course/Event Execution and Delivery Activities*		
DIRECT SIM ACTIVITIES *Course/Event Development and Planning Activities*		
INDIRECT SIM ACTIVITIES *Administrative and Operational Support Activities*		
PAID TIME OFF ACCRUAL		
NOTES		

CATEGORIES OF ACTIVITY	EX AVG HRS/WK (FTE %)	EXAMPLE TYPES OF ACTIVITY
DIRECT Course/Event Execution and Direct Delivery Activities	20 0.5 FTE (20/40)	Setup Sim delivery time Teardown Pilot, practice runs Debrief time
DIRECT Course/Event Development and Planning Activities	10 0.25 FTE (10/40)	Planning meetings Moulage/event prep Video production Testing/experimenting Documentation
INDIRECT Center Administrative, Operational Support Activities	6 0.15 FTE (6/40)	Staff meetings Staff training Inventory management Policies, procedures Maintenance, repairs
PAID TIME OFF	4 0.10 FTE	4 hrs/week PTO accrual
Notes		

SIMULATION: BRINGING LEARNING TO LIFE

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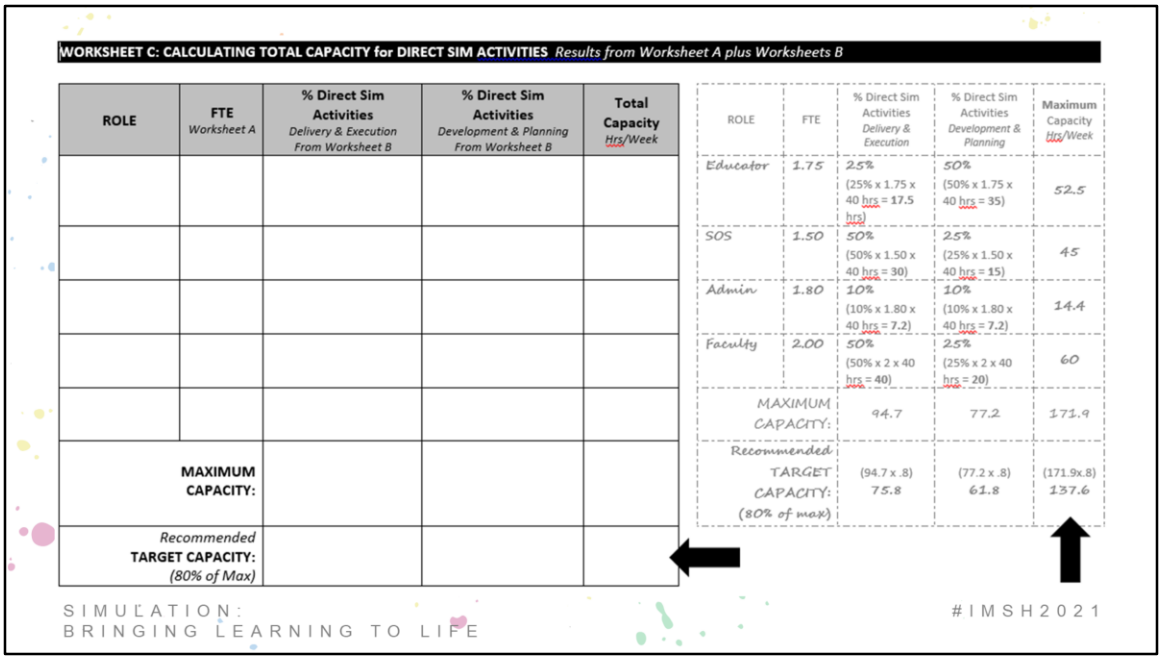
Worksheet B – Determine the % of each FTE dedicated to Direct Simulation Activities.

If you remember back to the start of this session, we indicated this can be complicated for some folks. This is where it starts to get tricky. Complete this worksheet for **each position** identified on the previous page that contributes **DIRECTLY** to the planning, development, execution, and delivery of a sim event.

Especially important to do this for each position with variable FTE amounts. (Ex. 1.0 vs 0.5 FTE Sim Ops Specialist).

You can do this a couple of way. You can “guess” what you want your number of hours to be for each, or you can set out on a time tracking study to determine more accurately how much time your team spends doing which activity.



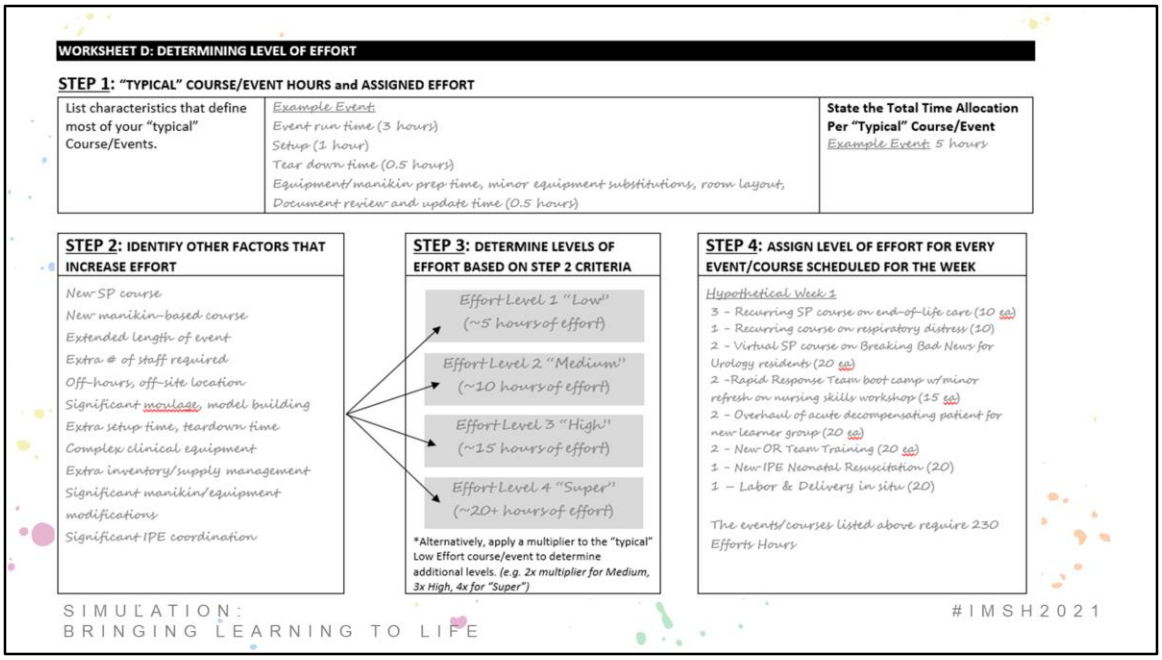
Worksheet C – Calculating Total Capacity for Direct Sim Activities

This page allows you to calculate your sim center's maximum and target capacity for direct sim activities based on the numbers from the previous page. Again, we'll use my Sim Ops position for demonstration.

Maximum Capacity is the very most number of hours you can spend in a given week on direct sim activities. It's a good idea to calculate a Target Capacity based on how nimble you need to be throughout the year to your institution's training needs. This may be more appropriate in a hospital-based program rather than an academic program.

In the example, the total number of FTEs from **Worksheet A** was combined with the percentage FTE allocation for direct simulation activities from **Worksheet B** to calculate the *total capacity for direct simulation activities in terms of hours per week*. This sample center has a **maximum capacity of 171.9 hours** developing and planning (77.2 hours) & delivering and executing (94.7 hours) per week. This sample center has determined its target capacity to be 80% of the maximum, which equals a **target capacity of 137.6 hours** developing and planning (61.8 hours) & delivering and

executing (75.8 hours) per week.



Worksheet D – Determining Level of Effort
This is a retrospective at first and but can also be used to predict and make a case for support of your program's growth. It becomes a way to start predicting future programming for specific kinds of courses/trainings/projects. If you don't define the measurement of your success, someone else will and they will not choose metrics that are meaningful!!

Step One asks you to think of your most typical 'vanilla' sims and lists tasks/work associated with them. You'll need to assign an average amount of time to each of those characteristics or tasks so that you can tally up that time…and then to give an assigned time for a typical standard.

You can easily get sidetracked at this point – especially if you have not yet been tracking time for the separate tasks. If that's the case, it might be well worth your time to stop and do some of that for a bit of time. OR, you can do what I did with my program – guess about those numbers and ultimately, once you get to Worksheet E, you'll have a good sense of how well you guessed.

Step Two asks you to identify OTHER factors that would increase work efforts. Really

think about these things for YOUR program. What do you do that adds time and effort – be it in the development phase, set up , actual execution of the course, post course work. My center does a lot of moulage. We travel around the state to deliver curriculum, sometimes the complications of the course necessitate extra staff, at times because we're doing interprofessional simulations, the development of the course is more complicated and takes more time. We also deliver simulation outside of 'normal business hours', including weekends. That affects our effort.

Again in Step 2, you have to think about time allocation related to each of these factors - and depending on your array of courses/events, that may be challenging. Time tracking may help, or you might choose to guess again!

Step Three asks you to determine levels of effort – between Low and Super. Your identified time allocations in Steps 1 and 2 will help you start to make decisions about these thresholds. We see increments of 5 hours in the example. I know Mike's program uses increments of 8 hours, and only has three levels.

I actually found that I was more comfortable assigning my 'typical' course/event to the second tier --- what they call medium. Because there are lots of things that need our attention like skills fairs that involve us collecting task trainers, setting them up, and then when the event is over, we pack them back up and restock them. This does take a bit of effort from one of my staff, so I want to track it. But it is so low, I want to make sure I don't plan on more effort needed and perhaps miss an opportunity to provide another low or medium effort course that day.

Note the alternate method of just using a multiplier to get your thresholds for levels of effort.

Step Four has you assign levels of effort for all of your events/courses in any given week. In our sample, the center had 3 recurring SP courses (medium level) for a total of 30 effort hours, etc. The sample week required 230 effort hours for this center. For my center, with 4 staff delivering simulation, we would be 70 hours over our maximum capacity!

** I want to take a minute and address what always comes up about assigning effort. We KNOW that 230 hours of work did not all happen in this particular week. Certainly there were things identified in Steps 1 and 2 that were accomplished before this week, especially for new or revamped courses. BUT when you look long-term at your effort hours, this becomes helpful. You can look at your upcoming schedule and know how much work center staff will be performing – perhaps adjusting assignments, holding off on saying YES to a pop-up project the week before this one, etc.

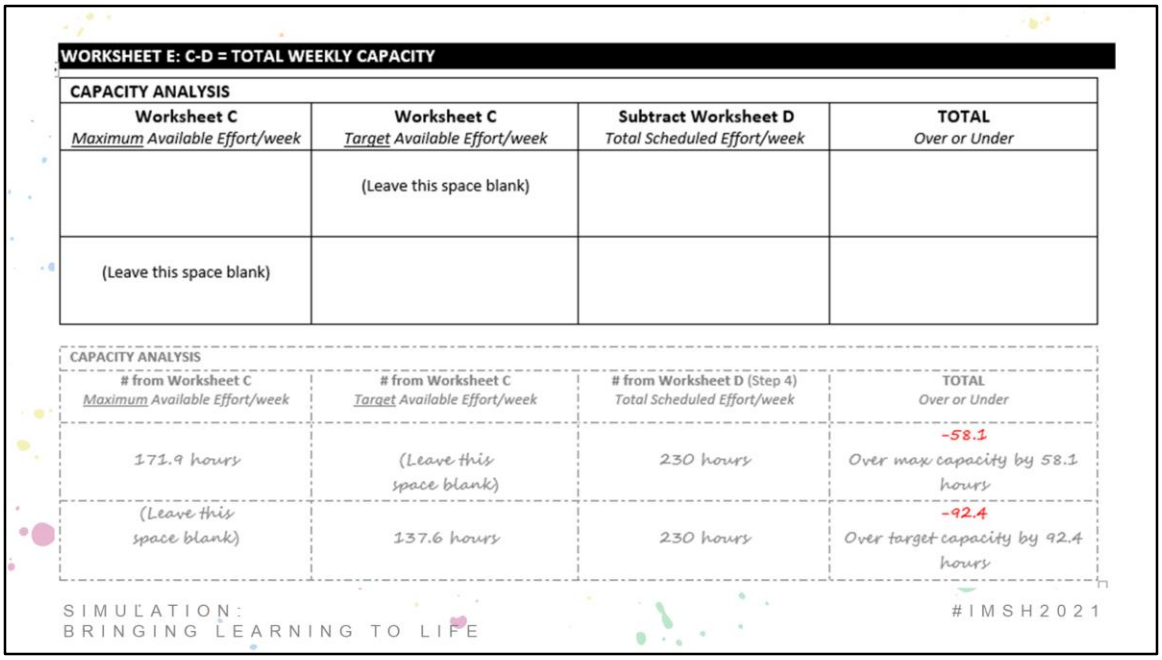
You're probably already doing some of the predictive scheduling, without the data to validate it. When we hold our 3-day, over the weekend, BootCamp for incoming Emergency and Critical Care Fellows – its ALL hands on deck for those three days plus the two before it begins. Never mind the lead up before then. As soon as it's scheduled, I block Monday – Wednesday of the next week and don't schedule anything. Yes, we'll still be working. AND, I know that most of my staff will need to take some flex time to recover!

I tried to do just Step 4 with my staff before we did any time tracking to see how we were actually spending our time. I would call it spitballing – you could also call it validating or verifying, perhaps. For us, it wasn't validating at all. We had a sense of the days and weeks that seemed to be over our maximum, but we really weren't paying enough attention to confirm that the spitballing was based on much other than how we felt.

Nonetheless, Step 4 helps begin to confirm whether or not your effort thresholds are accurate enough - if you backtrack for six months to a year and see what your weeks look like. You can then compare expected effort hours to the number of hours you actually have available.

This worksheet may take some unpacking and re-packing to find the sweet spot.

And once you've backtracked – then you can look ahead and more accurately predict and plan what courses and events might be added (and when). You'll also be able to see trends that can alert you to the need for more staff of one kind or another – so that you can continue to grow programming.



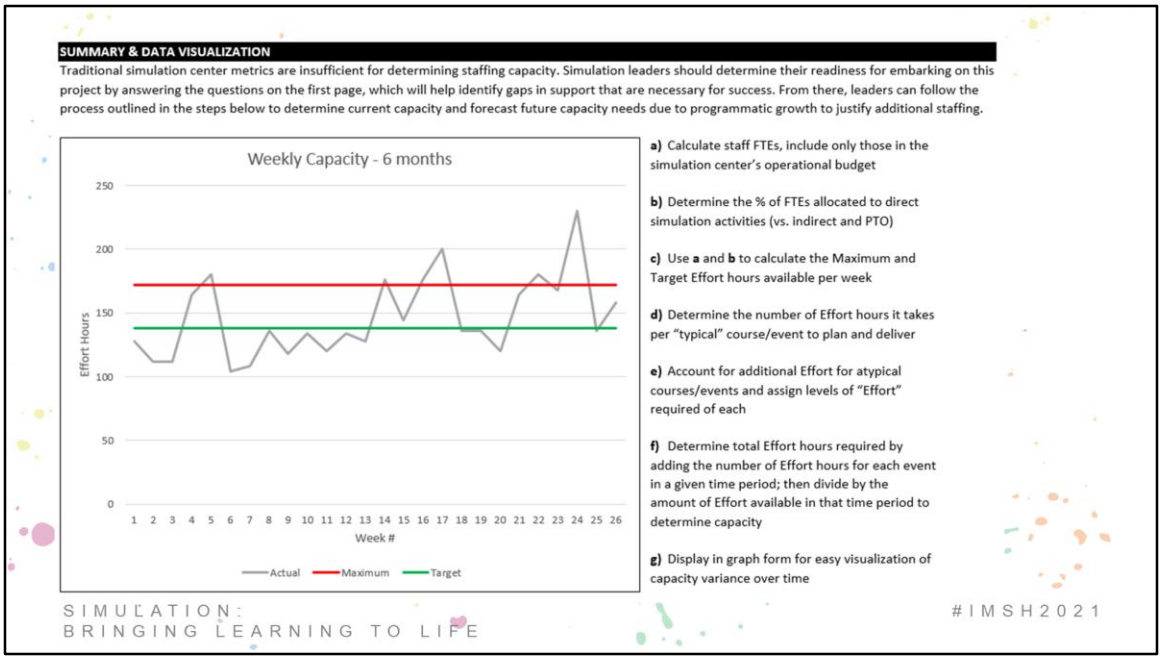
WORKSHEET E: C-D = TOTAL WEEKLY CAPACITY

CAPACITY ANALYSIS			
Worksheet C *Maximum Available Effort/week*	**Worksheet C** *Target Available Effort/week*	**Subtract Worksheet D** *Total Scheduled Effort/week*	**TOTAL** *Over or Under*
	(Leave this space blank)		
(Leave this space blank)			

CAPACITY ANALYSIS			
# from Worksheet C *Maximum Available Effort/week*	# from Worksheet C *Target Available Effort/week*	# from Worksheet D (Step 4) *Total Scheduled Effort/week*	TOTAL *Over or Under*
171.9 hours	(Leave this space blank)	230 hours	-58.1 Over max capacity by 58.1 hours
(Leave this space blank)	137.6 hours	230 hours	-92.4 Over target capacity by 92.4 hours

Worksheet E – Total Weekly Capacity
This is it! Worksheet E is where you determine whether you are over or under your capacity. We've already calculated that Maine Med has 234 Maximum Effort Hours available each week. The Target Effort Hours is 188. Last week, we had 14 events for a total of 216 Effort Hours. We were under Max Capacity by 18 hours but over our Target Capacity by 28.

In the example, the number of **Effort Hours (230)** required to facilitate the list of sample events in **Step 4 of Worksheet D** exceed both the **Maximum Effort (171.9 hours)** and **Target Effort (137.6 hours)** calculated on **Worksheet C**. Complete this process for each time period to be analyzed. It should be noted that this example does not delineate between roles and no distinction is made between the roles listed on **Worksheet A.** Simulation centers that wish to take a "deeper dive" into their capacity may choose to complete a capacity analysis for each distinct FTE using this same process.



SUMMARY & DATA VISUALIZATION – Turning your data into quickly understandable bits of information will be key in convincing leadership of your need. For instance, the peak on the far right at Week 24 is the example carried throughout the workbook – 230 hours for the week, over max by 58 and over target by 92. Red line is max, and green line is target. Gray line is "actual" data. Quickly shows trends over time and can be used to show future expected Required Effort.

You have to determine where you want your center to live, and lobby for resources to match that level of output. For me, Green line is "comfortable" and red line is "stressed." Based on the chart above, there are two months out of that four month window where stress will be very high.

Questions to ask yourself as you compile this data for your center:

- What does it mean when systems are stressed?
- How many weeks can you afford to run at a given pace?
- What tangible and meaningful things can you do to support your staff during busy times? Is that enough? Is that fair and reasonable?

This data and these questions bring us back to the title of this presentation – Telling

Your Story.

ACKNOWLEDGEMENTS:

SSH's Hospital Section metrics workgroup, which has embarked establishing benchmarking related to capacity

Our friends,
Akiko, Stephanie, Scott, Eric, Shelly & Christine

Want to learn more?

Staffing Capacity Analysis: Protect Your Team, Grow Your Center!

Presented by
Stephanie Swanson
Scott Voss

Friday, March 26
11 a.m. EDT

SIMULATION:
BRINGING LEARNING TO LIFE

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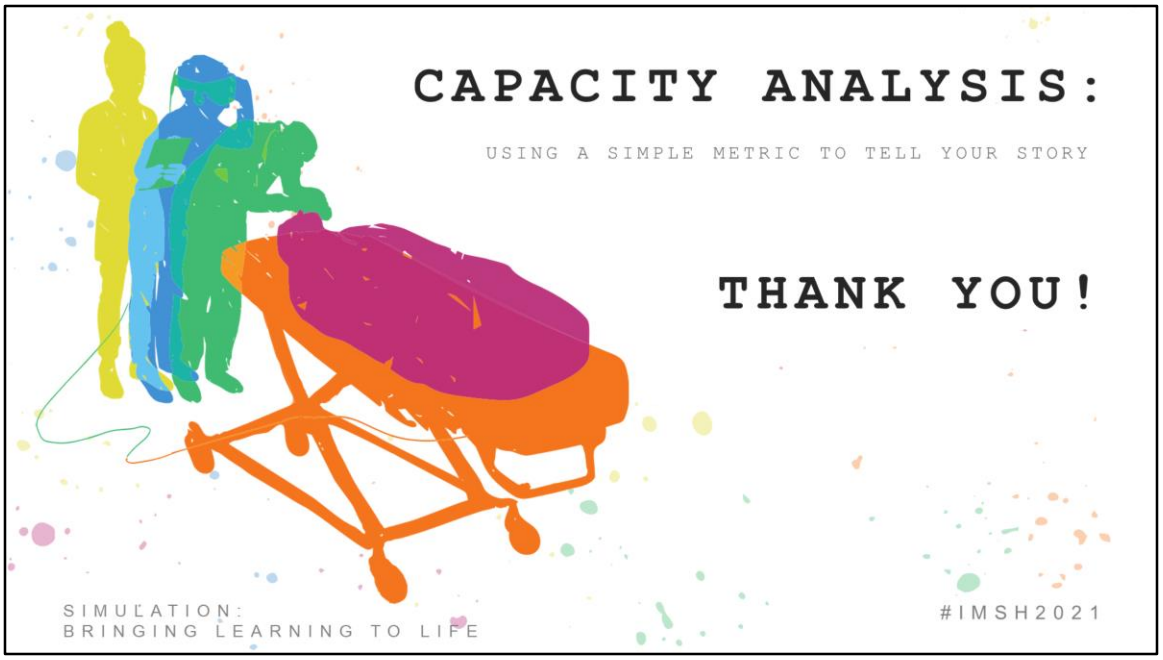
If you have a question that we didn't answer or don't get to – please send both of us an email! Between the two of us, we'll answer as fully as we can!


CAPACITY ANALYSIS:
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THANK YOU!
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