

# Grifols Erytra: Implementation of a New Automated System for MultiCare Health System

Significant Improvement in Turnaround Time and Reduction of False Positives

TYPING



## The MultiCare Health System

- MultiCare Allenmore Hospital, Tacoma
- MultiCare Auburn Medical Center, Auburn
- MultiCare Covington Medical Center, Covington
- MultiCare Deaconess Hospital, Spokane
- MultiCare Good Samaritan Hospital, Puyallup
- Mary Bridge Children's Hospital, Tacoma
- MultiCare Tacoma General Hospital, Tacoma
- MultiCare Valley Hospital, Spokane Valley

## 2018 MultiCare Patient Volume:

- Emergency Department Visits: 375,510
- Admissions: 63,649
- Inpatient Surgeries: 15,571
- Births: 8,689

## Western Transfusion Services:

- T&S tests: about 24,000/year
- Blood component units provided for transfusion: about 20,000 including:
  - Red cells: 13,000
  - Plasma, FFP, and Platelets: 7,000

**The MultiCare Health System has achieved considerable reduction of tech hands-on time while effectively reducing the number of false positive results. With the introduction of an Erytra to their transfusion service reference lab late in 2018, MultiCare was able to gain more than 1000 hours of valuable tech time that has been used to improve the quality of service offered to nurses and doctors. Considerable reduction of false positive samples, on the other hand, favorably affects patients' treatment and time spent in the hospital.**

Headquartered in Tacoma, Washington, the MultiCare Health System is a not-for-profit health care organization that includes eight hospitals across the Puget Sound and Eastern Washington regions. MultiCare Health System offers a comprehensive list of services covering primary care, urgent care, numerous specialties, as well as a Level II Pediatric trauma center (Mary Bridge Children's Hospital) and a level IV Neonatal Intensive Care Unit (MultiCare Tacoma General Hospital).

MultiCare's transfusion laboratories provide full service in most of the western hospitals, with partial Type & Screen (T&S) testing at Covington as well as in the two eastern hospitals. The transfusion laboratory at MultiCare Tacoma General Hospital serves the immunohematology reference laboratory for complex cases resolution.

Until June 2017, MultiCare was using an automated solid phase system with the contract expiring in August 2018. In June 2017, a request for information (RFI) was initiated for selection of a new automated analyzer. Tenders were received from three different manufacturers with immunohematology automated systems. Fifty-seven criteria were defined and ranked in order of importance by 70 transfusion medicine laboratory staff across the system. A decision tree based on these criteria was developed according to their importance under the coordination of Mike Charapata MBA, MT(ASCP)SBBCM, Manager, Transfusion Services at MultiCare Health System. Factors ranked as most important by the staff included time of load, turn-around-time, reproducibility of results, maintenance time, footprint, noise level, test menu, FDA approval, and, last but not least, overall cost.

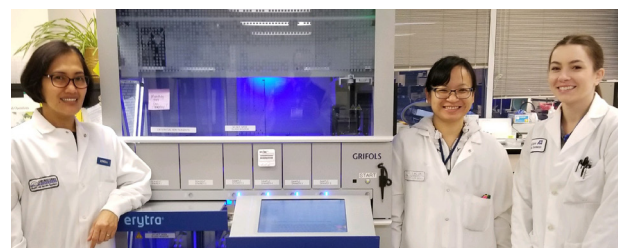
The results of the on-site evaluation were in favor of the Grifols Erytra based on several key factors such as time of load, turn-around-time, footprint, noise level, maintenance (hands-on and downtime during maintenance), and reproducibility of results. Subsequent to these evaluations, the Erytra and its DG Gel technology were successfully implemented across the MultiCare transfusion laboratory network and went live on October 29, 2018. After a year of routine testing on the new platform, it was time to evaluate its performance within the laboratory system as compared to historical data.

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For product information, visit [diagnostic.grifols.com](http://diagnostic.grifols.com)



**Mike Charapata**  
MLT, MBA, Manager,  
Transfusion Services



The Erytra instrument in Mike Charapata's laboratory

**Tech hands-on time**

Historically, it took approximately 2 minutes 10 seconds in the pre-analytical phase for samples, reagents preparation and loading each sample on the Echo. With the Erytra, these tasks are now completed in an average of less than 30 seconds per sample. (Table 1)

“All in all, there is about a 100 second difference per sample,” explained Mike, “meaning that per year we save about 40,000 minutes (650 hours) based on our testing volume for T&S. This represents a significant gain of tech time!”

He added, “If one adds up all time used for daily, monthly, and yearly maintenance, the Erytra requires only 5 minutes hands-on per day for maintenance. With the Echo, the hands-on time was approximately 21 minutes per day. Thus again we are saving around 15 minutes hands-on time per day for maintenance, which brings us to 90 hours saved per year. If you consider that we use the Erytra at our four main sites, we are talking about more than 360 hours of hands-on time saved for our techs. Adding on the 650 hours gained during sample preparation and loading steps, we are at over 1,000 hours saved!”

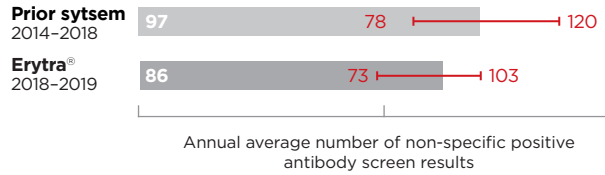
The time gained per tech is used for improving customer service for doctors, nurses, and general problem solving. In addition, MultiCare’s staff can spend more time on other activities in the lab such as blood inventory management, ultimately resulting in increased productivity.

**Specificity**

The increased specificity of the Erytra compared to the prior system translated into 1-3 fewer reflex antibody identifications per month for non-specific positive antibody screen results. “Although this may not sound like it has a significant effect, for these 1-3 patient(s) the impact is considerable, resulting in faster blood supply and contributing towards a shorter length of hospital stay,”

noted Mike. Similarly, the much stronger Anti-D reactions obtained with the Erytra translates into 5 fewer additional Weak D workups per month. Taken together, 6-8 patients per month receive their blood faster thanks to the improved sample turn around at the MultiCare labs.

**Figure 1: Specificity**



**Grifols as the single provider at MultiCare Hospital System**

Finally, yet most importantly, working with Grifols as the unique provider allowed standardization of testing processes across the laboratories. Besides Grifols excellent customer support, working with one single provider has critical advantages from operational and managerial aspects.

Based on his experience, Mike found that besides achieving much better pricing for reagents once you work with the Grifols instruments, the standardization throughout the labs reduced the workload for administrators considerably. Training processes, SOPs, competency programs, staffing models and interface setups only have to be developed and updated for one single system. “For the administration, this is huge and saves an incredible amount of time and resources. In addition, technologists do not have to be retrained when transferred from one hospital site to the other. They hit the ground running.”

**Table 1: Instrument maintenance steps per MultiCare SOP**

	ERYTRA	PRIOR SYSTEM
<b>Daily</b>	Check for any liquids that have leaked or been spilled* Check for unwanted microbial growth* Remove reagents from storage and warm to room temperature** Empty solid and liquid waste container (as needed)** Add additional Wash A and Wash B solutions (as needed)**	Initialize the instrument* Clean the instrument* Check the probe alignment* Check the probe vertical position* Clean probe** Prime probe** Washer residual volume test (visual)** Remove reagents from storage and warm to room temperature**
<b>Weekly</b>	Clean the surfaces, if necessary* Restart the instrument** Backup database**	Shut down the instrument and computer* Archiving results and deleting from the database*
<b>Monthly</b>	Decontaminate the instrument and its components*	Decontamination (decontaminate/flush/purge/prime)* Wiping down the probe block* Performing the washer residual volume test* Performing the washer dispense accuracy*
<b>Total monthly hands-on time</b>	2.5 hours	10.5 hours
<b>Average daily hands-on time</b>	5 minutes	21 minutes

\*indicated in IFU as “routine” task / \*\*indicated in IFU as “as-needed” task;  
 Taken from MultiCare SOP, Erytra instructions for use and Galileo Echo instructions for use.

Product registration and availability vary by country. Ask your local Grifols representative for more information.



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