

# Summary of the Evaluation of Scopio Labs' X100 Full-Field Peripheral Blood Smear

Study shows remote digital morphology significantly improves turnaround time, monthly costs, and efficiency for peripheral blood smear analysis.



## Introduction



With laboratory personnel in short supply and costs on the rise, hematology labs face increasing pressure to work more efficiently. This is driving a need for **lab digitalization**.



Digital analysis of peripheral blood smears (PBS) has gained traction in recent years. But standard technology's limited field of view (FOV) makes it suitable only as a preliminary screening method. Subsequent manual microscopic examination is still required for many abnormal samples<sup>2</sup>. **Manual microscopy remains a time-consuming, labor-intensive process that requires certified morphologists on-site.**<sup>3</sup>



The Scopio Labs' X100 Full-Field Peripheral Blood Smear™ digital platform eliminates the need for manual microscopy by enabling a full-field view. It also opens the door to fully remote PBS review and analysis, allowing for increased flexibility and a more efficient workflow. **This study explores and quantifies the benefits of fully remote digital cell morphology.**



The study was conducted at the hematology laboratory at Tel Aviv Sourasky Medical Center. It looked at the impact of implementing a fully remote, fully digital workflow for PBS analysis during key periods of the week.

*"In this study, we demonstrate that the ability to view and interpret cases fully remotely, without having to revert to manual microscopy review, combined with the convenience of being able to review these cases over the weekend, significantly and positively impacted the weekday workflow. This resulted in cost savings through the saving of additional weekday shifts to compensate for the weekend caseload backlog."*



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Director, The Hematology Laboratory Tel Aviv Sourasky Medical Center

## Methodology



More than **10,000 total PBS samples** were evaluated during two five-month time periods: Oct. 2020 to Mar. 2021 vs. Oct. 2021 to Mar. 2022.



During the first five-month period, the lab **collected PBS samples during the weekend** (when the lab's morphologists are off-duty and off-site) but **did not process them until the first weekday**.



All samples were processed using **Scopio Labs' X100 Full-Field Peripheral Blood Smear™** technology.



During the second five-month period, certified morphologists **reviewed samples digitally and remotely from home throughout the weekend**. Overtime rates were paid.

## What did the study evaluate?



Overall average **PBS turnaround time (TAT)** per PBS.



TAT of PBS samples on **weekends** and on the **first weekday**.



Staff **hours** and **costs**.

## Study significance



This is the **first study** of the impact of tele-hematology on **laboratory performance** and **costs**.



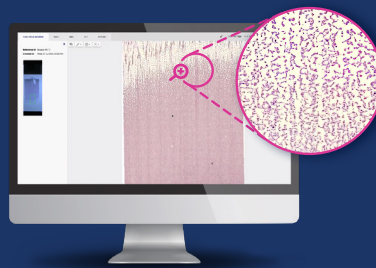
TAT is a **major benchmark** for laboratory performance.<sup>4</sup>



Nearly **80%** of hospital-attached clinical laboratories receive **complaints about delayed TAT**.<sup>5</sup>

## The technology

The FDA-cleared X100 Full-Field Peripheral Blood Smear™ Application provides a **full-field view of all regions of interest**, including the feathered edge and the monolayer, at **100X magnification**.



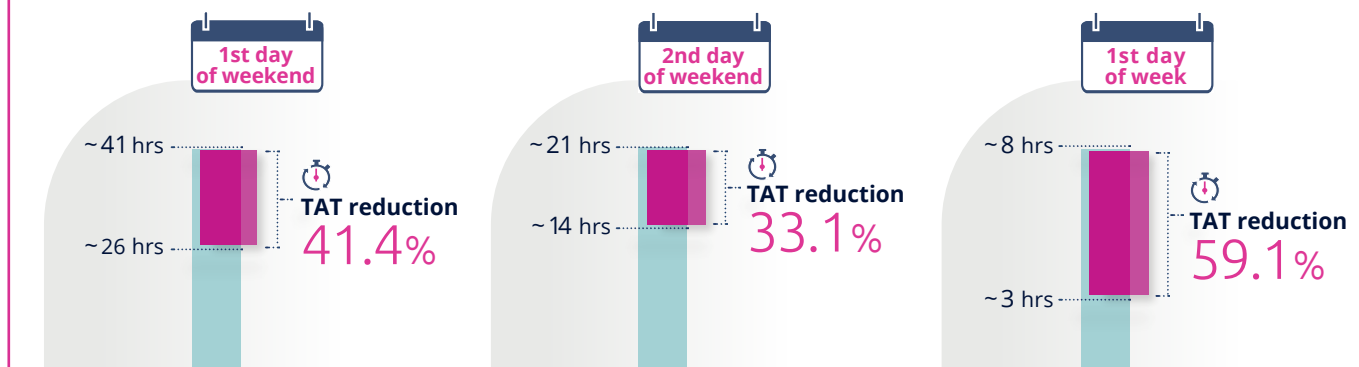
**60%**  
improvement  
in workflow  
efficiency

## Results

By optimizing its weekend workflow to allow for remote digital microscopy for PBS analysis, the laboratory saw dramatic reductions in TAT throughout the weekend and virtually eliminated the backlog of samples on the first weekday. This created efficiencies in a number of ways:

**Overall lab morphology TAT per PBS was reduced by 15.8%** ( $p < 0.03$ ) and **36 net working hours** were reduced each month (following the first month of implementation).

### TAT reductions by day:



**Reducing the weekend backlog** enabled the lab to **eliminate one eight-hour shift** at the beginning of each week. Even accounting for the added overtime hours accrued over the weekends, the laboratory saw a **net cost benefit** and a **net reduction in staff hours**.

## Results at a glance



More than  
**10,000**  
PBS samples  
analyzed



TAT per PBS reduced by



**41.4%**  
during **first day**  
of **weekend**



**59.1%**  
on the  
**first weekday**



Net staff time saved

**12**  
hours  
each month

## Conclusions

Implementing fully remote and digital PBS analysis improved the efficiency of the lab's morphology workflow, resulting in a significantly reduced TAT per PBS and net cost savings on monthly staffing. Faster TAT enabled faster delivery of critical medical information by morphology experts and clinicians on weekends.



*The X100 digital cell morphology platform is a fundamental conceptual change in laboratory medicine.*

*It provides the opportunity to work fully remotely, from anywhere, in real-time, to accelerate diagnosis and treatment and improve the patient experience.*



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