

Top Reading Center

**Cuts Costs by 4x
for Ophthalmology
Reads & AI Development**

A top reading center located within a leading academic medical center has been regularly serving biopharma companies seeking support in multisite ophthalmology trials. The reading center has decades of experience supporting landmark trials

across diabetic retinopathy, AMD, retinal vein occlusion, uveitis, inherited retinal disease and ocular safety monitoring. It also utilizes AI-powered workflows, setting it apart from reading centers that specialize in either human or AI reads.

The Problem

As the center adapted workflows to new modalities, grading protocols and AI tools, incorporating each new element meant costly, slow custom work from its legacy platform vendor. But sponsors expect reading centers to function amid increasing complexity without growing budgets. As such, the center's existing platform began to constrain its business model.

To remain competitive, the reading center needed to cut costs while also enabling faster, easier customization. It also needed the platform to track every image, every read and every reader so the center could stay audit-ready.

The Solution

The center engaged Flywheel to create a system of record for annotated images while offering the ability to customize its platform and keep costs down. Flywheel provides a 21 CFR Part 11-compliant environment where the center tracks which images have been vetted and by whom as well as who captured the images. Given the nature of ophthalmology imaging, where devices are handheld and highly operator-dependent, this level of tracking ensures only approved technologists are contributing to trials.



By the Numbers

More than 1M Gear jobs across two Flywheel instances. Six clinical trials supported by the reading center.

To meet the center's need for specific data ingest workflows, Flywheel built a custom guided upload tool for its deployment. The guided upload tool instantly checks image quality and then validates that the right person and device were used to collect the image.

The center was able to chain together several Flywheel Gears, containerized algorithms that are included with Flywheel, to create an automated data processing pipeline for both R&D and clinical trials in one platform. The institution runs this pipeline across two deployments — one for its reader workflows and another for the institution's academic research. This means the center can develop, test and run new algorithms at scale, bringing a Gear developed in the research instance to its closed, validated clinical trials instance without having to switch platforms.

Flywheel also empowers the center to avoid costly customization requests by developing its own tools on the platform with software development kits (SDKs), configurable forms, and custom Gear rules and protocols.



By the Numbers

15TB of imaging data stored, managed and activated

The reading center is also able to save resources when running AI inference on data. Once a Gear is built and validated in Flywheel, the platform can process every new image automatically, without any human labor involved. The team is then freed to conduct other work, rather than processing every image by hand. And, beyond the primary endpoints the center is measuring, it can flag secondary endpoints with AI while staying compliant.

With easier customization, built-in automation and instant data provenance, Flywheel helps the organization stay competitive and remain one of the top reading centers in the country.

The Results

With Flywheel, the reading center has been able to run reads on clinical trials and conduct AI development approximately four times less expensively than with its previous platform. Part of this cost savings comes in the form of flexibility, as the center can adapt to changing requirements by customizing its deployment in-house.



By the Numbers

4X cost savings on clinical trials and AI development

Visit flywheel.io
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