



2026 PCRS ANNUAL MEETING

REPRODUCTIVE FRONTIERS: BRIDGING BIOLOGY,
PRACTICE, AND POSSIBILITY

MARCH 18-22 | RANCHO MIRAGE, CA



PACIFIC COAST
REPRODUCTIVE
SOCIETY

More, More, More: Balancing the Push for Volumes With Lab Efficiency and Quality/Personalized Medicine



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Disclosure Slide

Neither I nor members of my immediate family have any actual or potential financial interests to disclose relating to the content of this presentation.

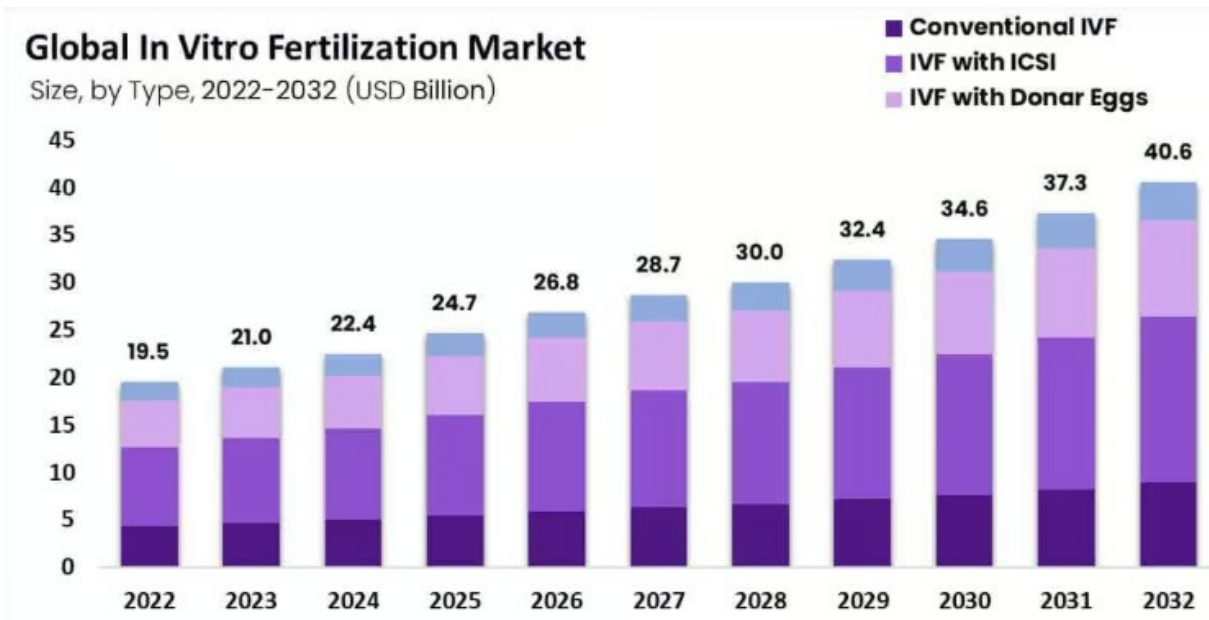
Needs Assessment Statement and Expected Learning Outcomes

- As IVF clinics are expected to do more, we discuss how labs can become more efficient
- Patients expect personalized medicine; we discuss what this looks like in the IVF lab





IVF Cycle Numbers are Increasing



<https://market.us/report/in-vitro-fertilization-market/>

Between 2020 and 2022, total IVF cycle volume in the U.S. increased by just over 33%, with significant variability across regions and clinic types. While some labs saw sustained double-digit growth year-over-year, others experienced contractions or stagnation. This report helps contextualize those trends, offering a lab-by-lab breakdown of cycle counts and percentage change, giving readers a unique lens into the shifting landscape of IVF lab activity post-COVID and during an era of increasing consolidation and consumer demand.



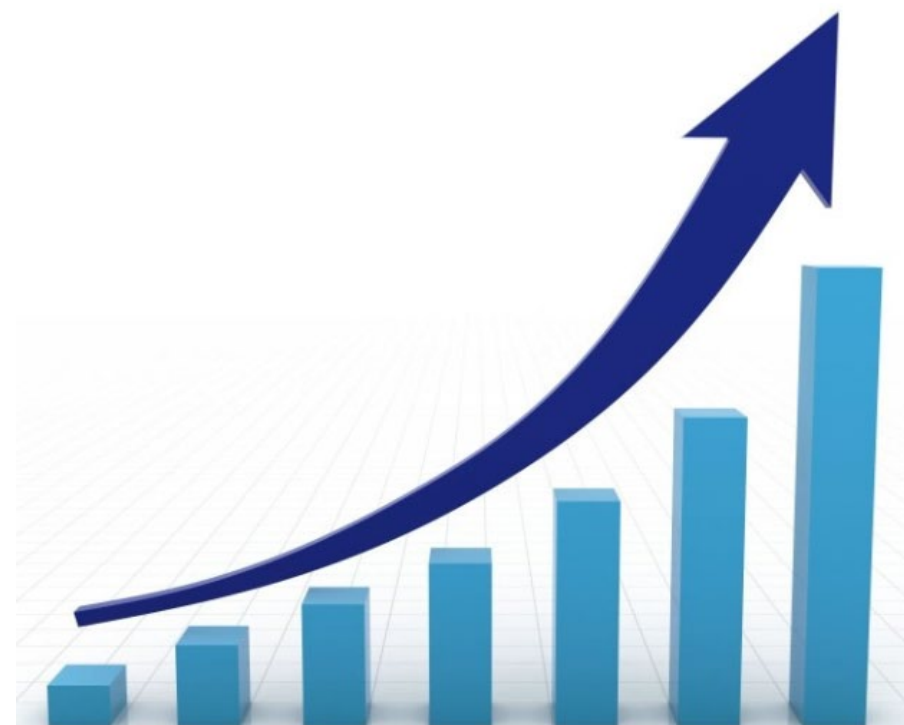
IVF Cycle Volumes by Lab, 2020-2022



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Growth Affects All
Aspects of the Clinic





Common Goals....

Get patients
pregnant

Maximize Lab KPIs

Safety First without
Compromising
Quality

Satisfied patient



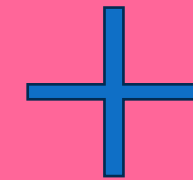
Common Goals....

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Personalized
Medicine



Quality Under Pressure

'good enough'
mentality

Protocol drift

Actively
examine KPIs

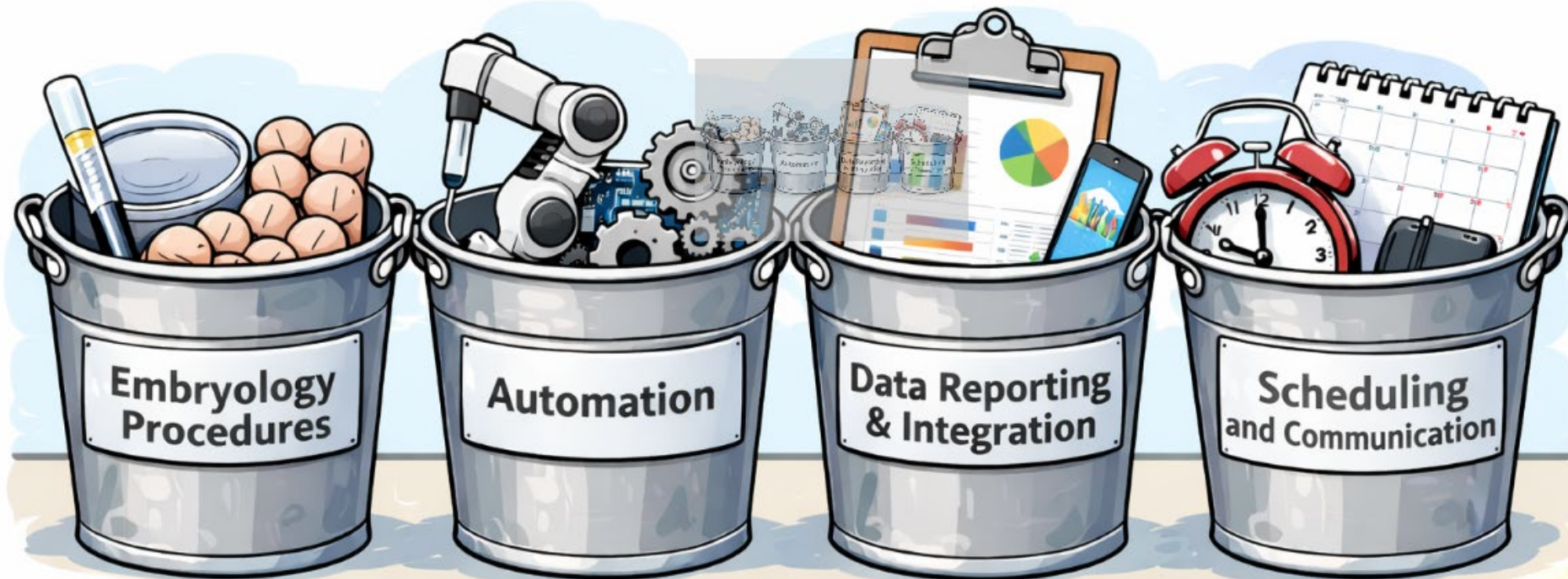




The Human Cost of “More”

- Sustained high workload can lead to:
 - . Decision fatigue
 - . Reduced vigilance
 - . Burnout and staff turnover

Gaining efficiency in the lab

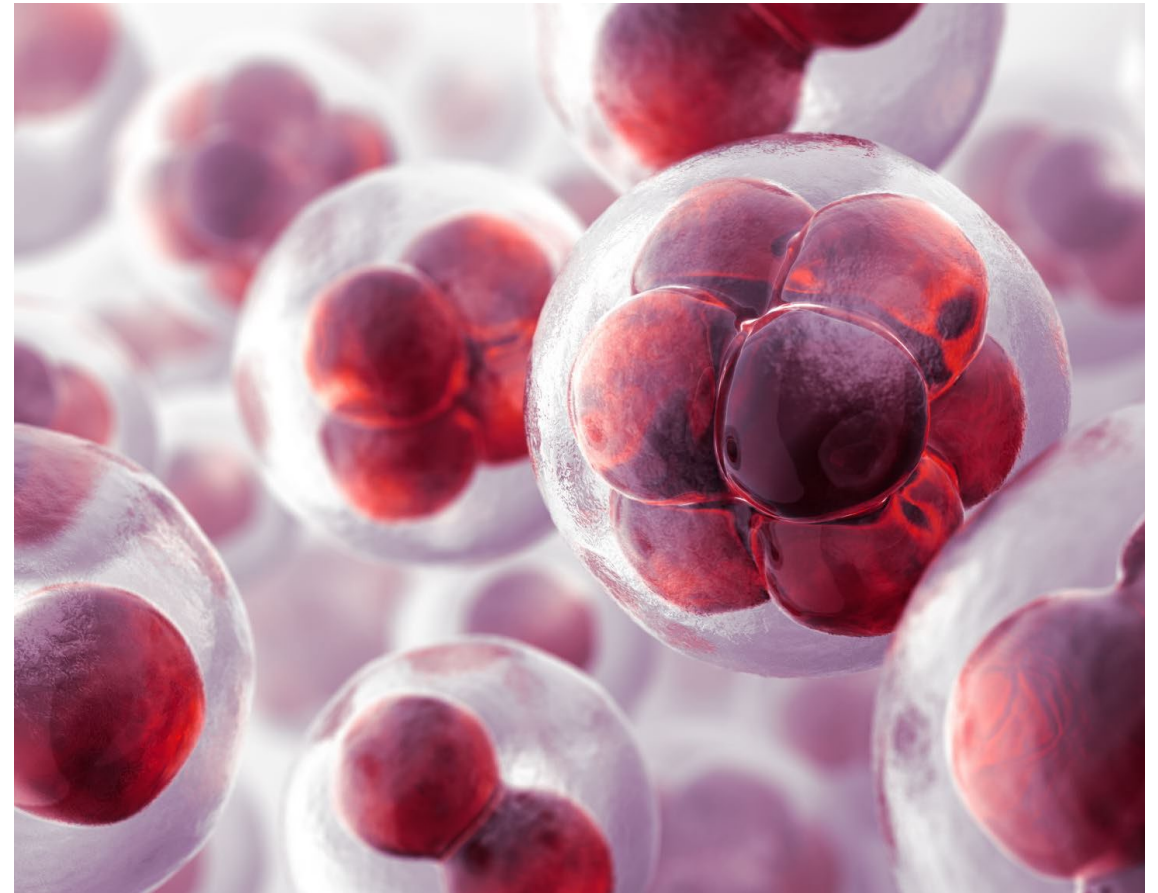


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Embryology Procedures

- Fert checks
- Day 2 assessment
- Day 3 assessment (and laser)
- Biopsy strategy
- Non-invasive PGT
- Continuous/undisturbed culture
- Time lapse





Automation





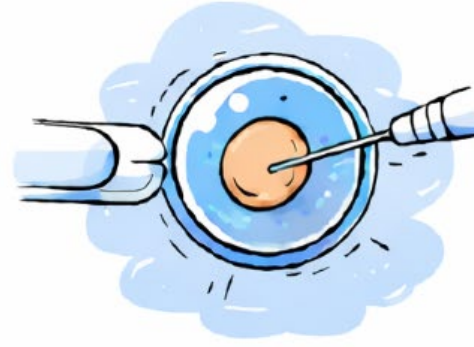
Automation



Dish Prep



Vitrification



ICSI



Sperm Detection



Semen Analysis



Oocyte Searching



**Time Lapse
Microscopy**



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Data Reporting & Integration

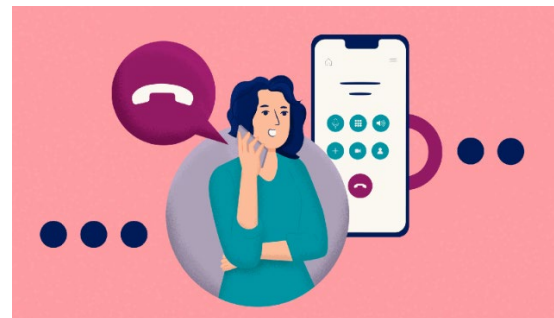


- LIS/EMR
- Witnessing System
- Cryo System
- Endocrine
- Semen analysis
- Cryo-billing



Scheduling And Communication

Communication
to patient
within the clinic



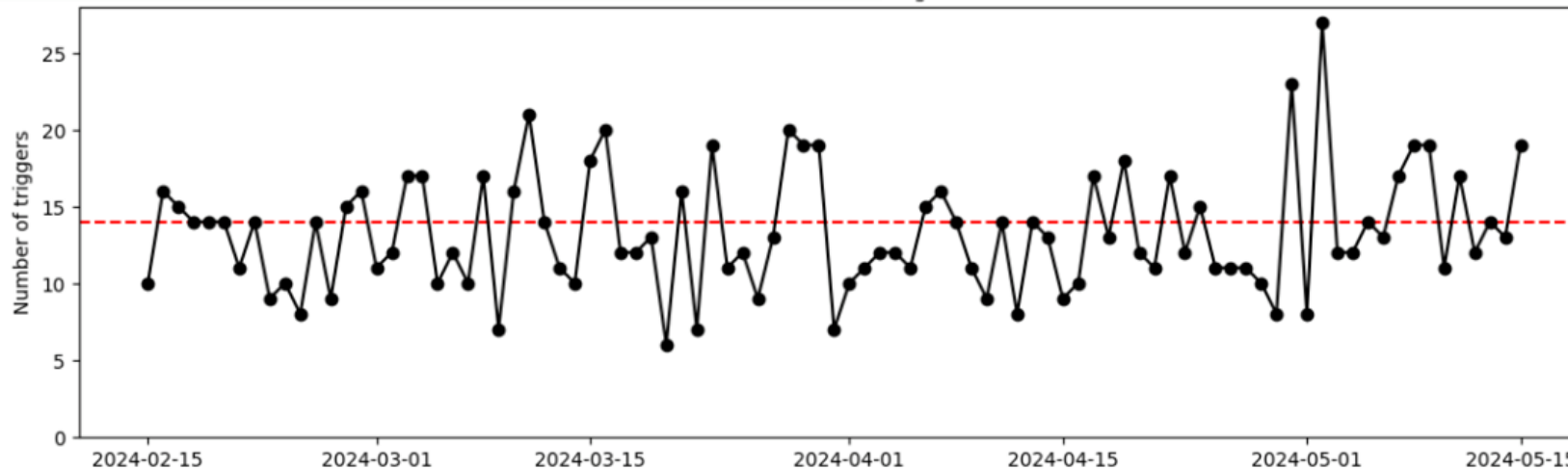


Variability in retrievals has a downstream impact on both clinic and lab

Problem:

Today, trigger decisions are made in a vacuum, often leading to peaks and valleys of retrieval workload in the operating room and in the embryology lab

Example Data: Variability in patient retrievals at a large clinic in the U.S. (2024)



29 days over capacity in a 3 month period

Clinic's ideal # of retrievals



AI can help clinics distribute retrievals more evenly across their schedules

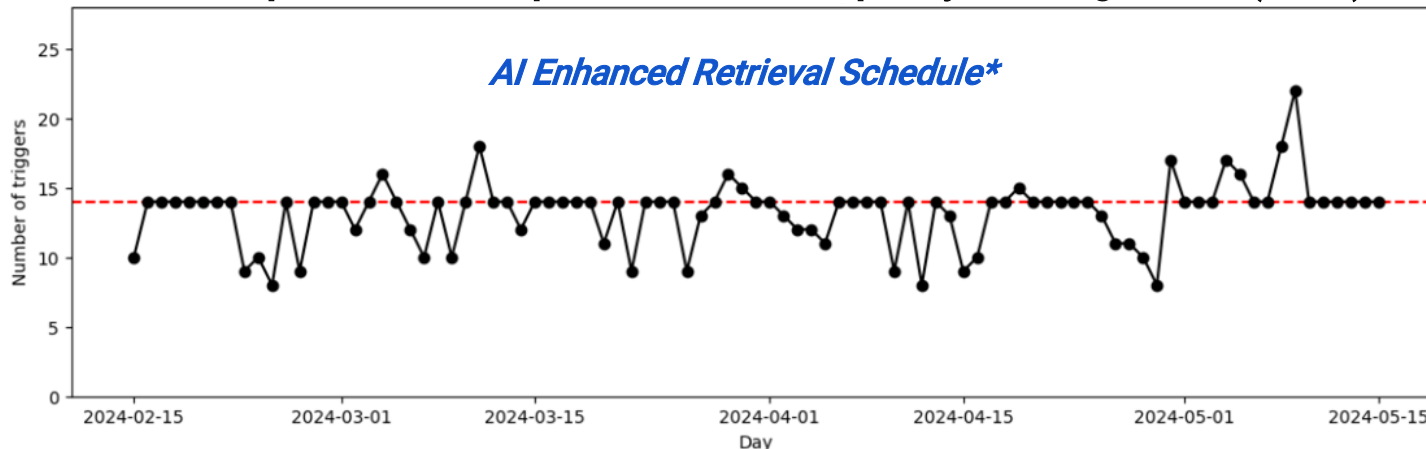
Solution:

AI can predict the expected retrieval workload at clinic up to a week in advance and help REIs determine how to optimize patient triggers to:

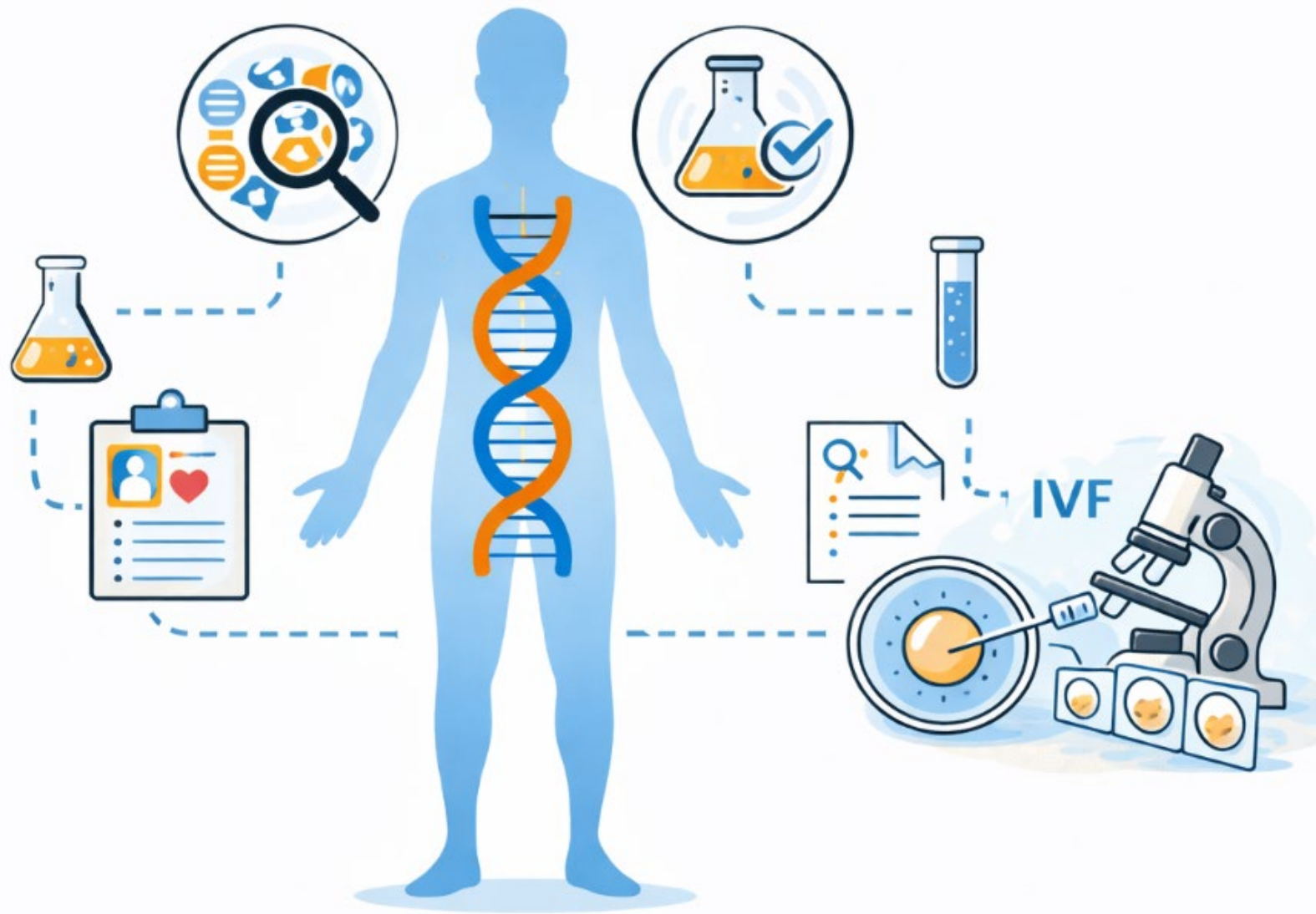
1. maximize outcomes and
2. minimize retrieval variability

This facilitates downstream forecasting of lab workloads and staffing needs, which optimizes overall clinic efficiency, patient volume, and reduces staff burnout

Example Data: AI helped reduce overcapacity at a large clinic (2024)



Using AI, clinic reduced over capacity by 71%



Personalized Medicine & IVF



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Can the lab accommodate personalized medicine?

Personalized medicine is often discussed at the clinical level, but it has direct laboratory implications.

Personalization in the lab means:

- Recognizing that not all embryos benefit from identical handling strategies
- Allowing flexibility within standardized systems
- Using patient and cycle history to inform lab decisions





What is personalized treatment in the IVF lab?

- ICSI
- 2nd Day ICSI
- Day 7 culture
- Biopsy
- Cal Ionophore
- Laser assisted ICSI
- Split ICSI (split sperm source)
- Freezing out of protocol



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How to Sustain Personalized Medicine

- Good communication ahead of cycle
- Minimize last minute decisions

- With automation, will that minimize personalization?



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. The Human Factor: Sustainability Matters (1–2 minutes)

No lab runs well if its people are exhausted.

Efficiency must support:

- Reasonable workloads
- Predictable schedules
- Psychological safety

When staff feel supported:

- Errors decrease
- Retention improves
- Performance stabilizes

Burnout is the most expensive inefficiency of all.

Q&A



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