

Diagnostic *Insights*

M42 Diagnostics Cluster | NRL · CHSC · TMIC | United Arab Emirates



Message from the
CEO

Advancing Diagnostics Through Knowledge, Partnership and Innovation

It is my pleasure to welcome you to the inaugural edition of Diagnostic Insights, our new quarterly publication created to keep our clients, clinical partners, hospitals and the wider medical community informed about the latest developments across the M42 Diagnostics Cluster. Diagnostics plays a fundamental role at every stage of the patient journey, from prevention and early detection to diagnosis, treatment selection and ongoing disease management.

As healthcare continues to evolve, timely access to reliable diagnostic information, advanced technologies and specialist expertise has never been more important.

Through this publication, we aim to share meaningful updates from across National Reference Laboratory, Capital Health Screening Centre and Tawam Molecular Imaging Centre. Each edition will highlight new and enhanced services, clinical and scientific developments, quality and accreditation achievements, educational initiatives, expert perspectives and practical information that may support clinical decision-making and patient care.

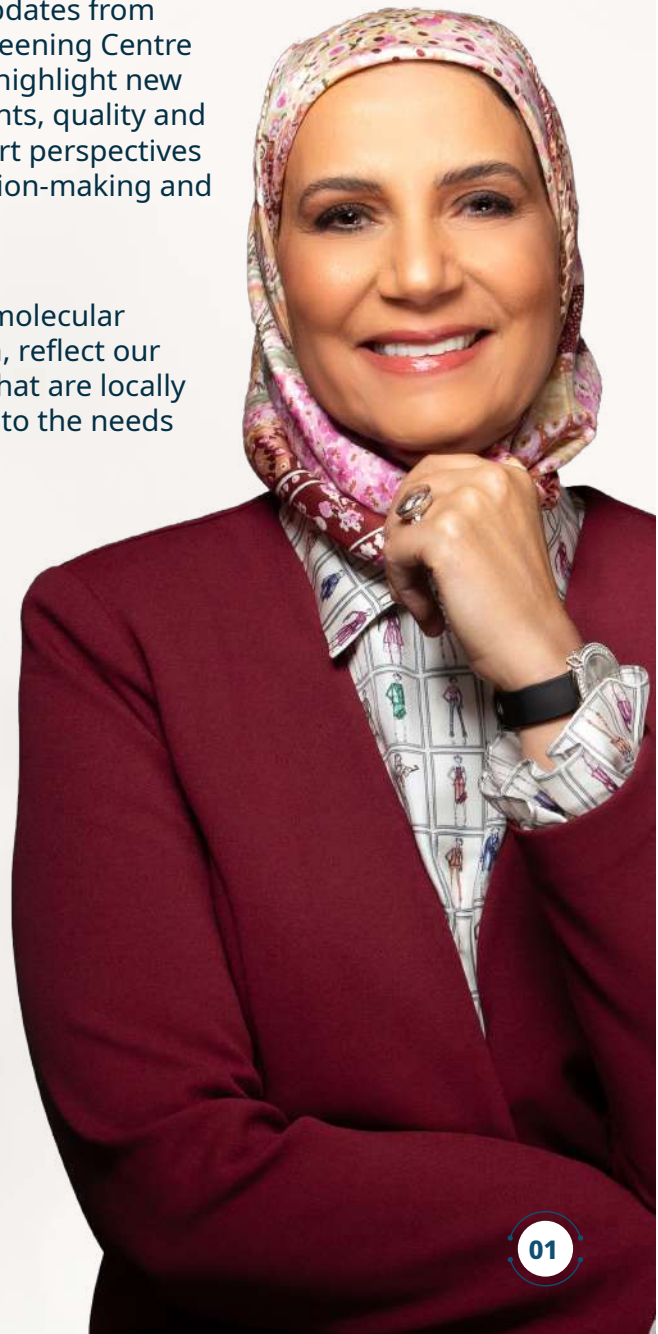
The advances featured in this first issue, from expanded neurodegeneration and genomic testing capabilities to molecular imaging, preventive healthcare and pathology education, reflect our commitment to building integrated diagnostic services that are locally accessible, internationally benchmarked and responsive to the needs of our healthcare partners and communities.

Above all, Diagnostic Insights is intended to strengthen communication and collaboration. We value the trust placed in us by our clients and clinical partners, and we remain committed to listening, learning and continuously improving the services we provide.

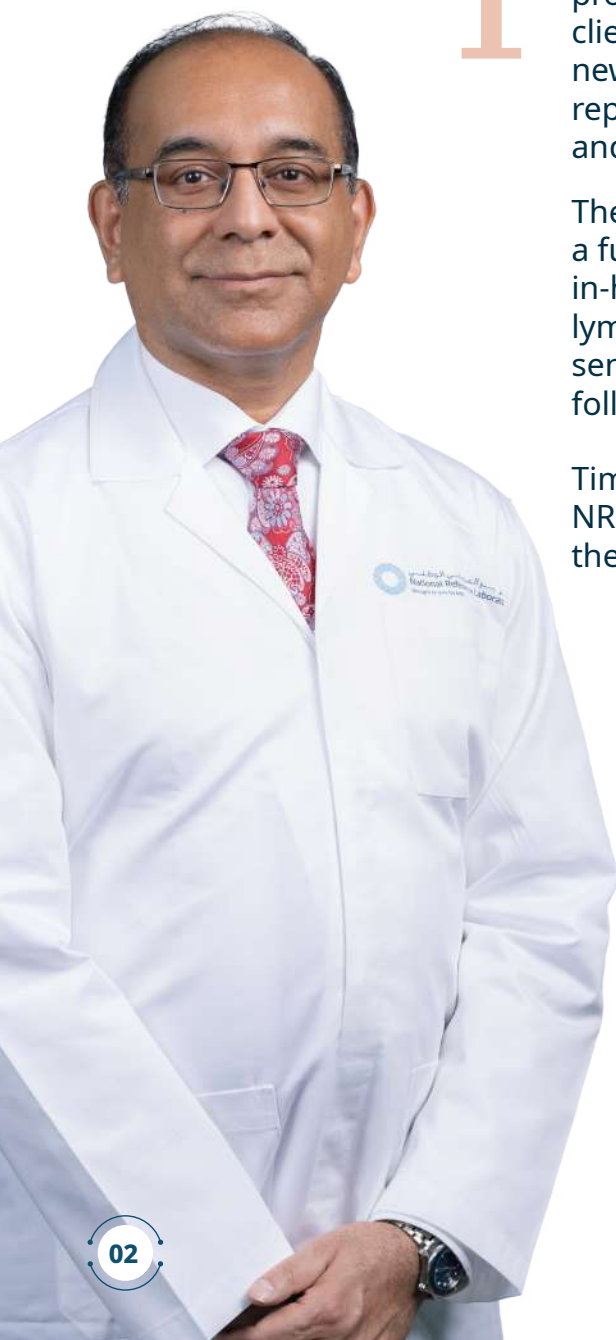
I invite you to explore this first edition and join us as we continue advancing diagnostic excellence, scientific knowledge and patient-centred care across the UAE and the wider region.

Dr. Laila AbdelWareth

Chief Executive Officer,
Diagnostics . M42



Welcome to Diagnostic Insights



This is the first issue of Diagnostic Insights - the quarterly publication of NRL Connect, our new program for staying in step with the clinicians and clients we serve. Each issue brings together what's new on our menu, what's changed in how we report, a look at the quality behind the numbers, and the people doing the work.

The first half of 2026 has been busy: we've brought a full cerebrospinal fluid neurodegeneration panel in-house, expanded our hereditary cancer and lymphoid molecular profiling, and returned several send-out assays to local testing. The pages that follow are your guided tour.

Time-sensitive changes still reach you directly as NRL Test Bulletins; the Diagnostic Insights gathers the story behind them. We'd love your feedback.

Dr. Imran Mirza

Chair, Clinical Pathology
Editor, Diagnostic Insights



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A Regional First: UAE's First Combined AP/CP Residency Accredited

*A Landmark Achievement for Pathology Training
and Workforce Development in the Region.*

The National Reference Laboratory is proud to announce that the Anatomic Pathology and Clinical Pathology (AP/CP) Residency Program at Cleveland Clinic Abu Dhabi (CCAD) has been

accredited by the National Institute for Health Specialties (NIHS), the first combined five-year AP/CP residency of its kind in the UAE.

The program will be delivered by NRL pathologists and scientists, reflecting NRL's dual identity as an academic and commercial reference laboratory and its long-standing commitment to training the next generation of pathologists. It is led by **Dr. Alexandru Stan** as founding Program Director, with **Dr. Ahmad Alduaij** as Associate Program Director.



Establishing a home-grown, internationally benchmarked pathology training pathway is a significant step for the UAE, building local capability, retaining talent, and strengthening the diagnostic workforce that underpins patient care across the region.

AT A GLANCE



**First combined
five-year AP/CP
Residency Program
Accredited** in the UAE,
by the NIHS



Hosted at Cleveland
Clinic Abu Dhabi;
**delivered by NRL
pathologists and
scientists**



Program Director:
Dr. Alexandru Stan
Assoc. Program Director:
Dr. Ahmad Alduaij



With an average
intake of **two**
residents per year

A Complete CSF Panel for Alzheimer’s and Neurodegeneration

Now In-House

National Reference Laboratory now performs the core cerebrospinal-fluid biomarkers for evaluating cognitive decline locally, on the Fujirebio Lumipulse® G platform. Together with plasma p-Tau 217, the panel lets clinicians classify findings within the amyloid-tau-neurodegeneration (AT[N]) framework without sending specimens abroad, cutting turnaround to days and keeping interpretation close to our chemistry and neurochemistry teams.

AT(N)	Assay	Role
A - Amyloid	Aβ 40/42 Ratio, CSF	Biochemical surrogate for amyloid PET; better than Aβ42 alone.
T - Tau	p-Tau 181 · Total Tau, CSF	p-Tau 181 tracks AD-specific tau; T-Tau reflects neuronal injury.
N - Neurodegeneration	Neurofilament Light (NfL), CSF	Neuroaxonal-injury marker; helps flag non-AD pathology (e.g., FTD).

AT A GLANCE

ALL FOUR CSF ASSAYS



7 days turnaround



polypropylene tubes



transport frozen (-20 °C)

What Changed This Quarter

Three updates that affect how results are reported or interpreted. Please note before ordering.

CUT-OFF ↑
Plasma p-Tau 217 reporting cut-off raised

The abnormal-result flag moves from 0.22 to 0.34 ng/L. Values of 0.22–0.34 ng/L are now reported as indeterminate and need CSF or amyloid-PET follow-up in symptomatic patients.
Order 2925029.

INTERPRETATION -
p-Tau 217 / Aβ42 Ratio - interpretation guidance

Plasma Aβ42 is sensitive to pre-analytical handling. Discordant results - an abnormal ratio with a normal p-Tau 217 - should not drive decisions alone and require confirmatory testing.
Order 2925042.

PANEL EXPANDED -
Comprehensive Hereditary Cancer Panel - 47 → 154 genes

Methodology upgraded from targeted NGS to whole-exome sequencing with curated in-silico analysis of a 154-gene list. Broader hereditary cancer risk coverage.
Order 8140630.

QUALITY & ACCREDITATION CORNER

The Quality Behind the Numbers

Highlights from our Q1 2026 Quality, Patient Safety & Experience review of National Reference Laboratory.

Metric	Q1 2026
0	Serious or sentinel events, and no major regulatory non-conformities.
%97.08	Anatomic Pathology Turnaround Time (TAT) Compliance (target >%90).
%96.93	Clinical Pathology Turnaround Time (TAT) Compliance (target >%95).
%94.76	Genomics Turnaround Time (TAT) Compliance (target >%93).
%98.4	Proficiency-testing scores (target >%95) - external quality benchmarking.
%100	Critical-results notification compliance (target >%99.65).

A Stronger Safety Culture

Voluntary safety-event reporting stayed above target through Q1 2026 even as volumes dipped due to geopolitical events; of 217 events reported, none reached a harm-causing severity. More reporting with sustained low harm is the signature of a healthy culture - staff flagging near-misses before they reach a patient.

Accreditation Wins This Quarter:

- Feb-Mar 2026** - Cytogenetics scope added to our CAP accreditation and ISO 15189 assessment at Danat Al Emarat Hospital , with DOH scope inclusion - no findings.
- Mar 2026** - Successful Tasneef audit for transfusion medicine at Cleveland Clinic Abu Dhabi.
- Ongoing** - Risk-based internal quality audits underway across all NRL sites.

Maintained under CAP accreditation and ISO 15189:2022 across the network.

New Tests at a Glance

Eighteen new and enhanced assays launched between January and June 2026, grouped by discipline.

01

Neurochemistry · CSF & Plasma

Test	Code	Turn Around Time	Specimen
Amyloid-beta 40/42 Ratio, CSF	2925064	7 days	CSF
Neurofilament Light Chain (NfL), CSF	2925038	7 days	CSF
Phosphorylated Tau 181, CSF	2925041	7 days	CSF
Total Tau (T-Tau), CSF	2925040	7 days	CSF
Neurofilament Light Chain (NfL), Plasma	2925034	7 days	Plasma (EDTA)
Phosphorylated Tau 217	2925029	7 days	Plasma (EDTA)
Phosphorylated Tau 217/Amyloid-beta 42 Ratio	2925042	7 days	Plasma (EDTA)
Plasma Amyloid-Tau-Neurodegeneration Profile	2925056	7 days	Plasma (EDTA)

02

Molecular & Genomics

Test	Code	Turn Around Time	Specimen
Comprehensive Hereditary Cancer Panel -154 - gene WES	8140630	21 days	Blood (EDTA)
FLT3 Mutation Analysis (ITD/TKD) - AML	1723301	72 hours	PB / BM
Lymphoid Neoplasm NGS (112-gene, WHO-5/NCCN)	1425022	14 days	BM / PB / tissue
Microsatellite Instability (MSI), Tumor - Idylla™	1425021	72 hours	FFPE

03

Coagulation

Test	Code	Turn Around Time	Specimen
Protein S Activity (Functional)	164525	7 days	Citrate plasma
von Willebrand Factor Profile (Activity, Antigen, FVIII)	1101045	7 days	Citrate plasma

04

Autoimmune Serology · IFA

Test	Code	Turn Around Time	Specimen
Anti-Mitochondrial Ab (AMA), IFA	1226004	5 days	Serum
Anti-Parietal Cell Ab (APCA), IFA	1226007	5 days	Serum
Anti-Smooth Muscle Ab (ASMA), IFA	1226005	5 days	Serum

05

Clinical Chemistry · Serology · Cytogenetics

Test	Code	Turn Around Time	Specimen
Apolipoprotein A-1	1126101	24 hours	Serum
HTLV-1 / HTLV-2 Antibodies - ECLIA	1226008	3 days	Serum
Karyotype - POC & Tissue Biopsies	1725335	14 days	Serum
Methotrexate (MTX) Level	11251021	48 hours	Serum

Dr. Hemad Yasaei

Head of Molecular Diagnostics & Genomics National Reference Laboratory . M42

With over 15 years of experience in the field of molecular genetics and genomics, Dr. Hemad brings a wealth of knowledge and expertise to NRL.

He obtained his PhD in Cancer Genetics and BSc (Hons) in Medical Genetics at Brunel University London, UK.

Before moving to the United Arab Emirates in 2016, he worked on a number of research projects as a Post-Doctoral Fellow and Senior Research Associate at Brunel University London and the University of Bristol, UK.

He has contributed to numerous articles and research papers for leading scientific journals on the topic of genomics and regularly speaks at both international and regional conferences.

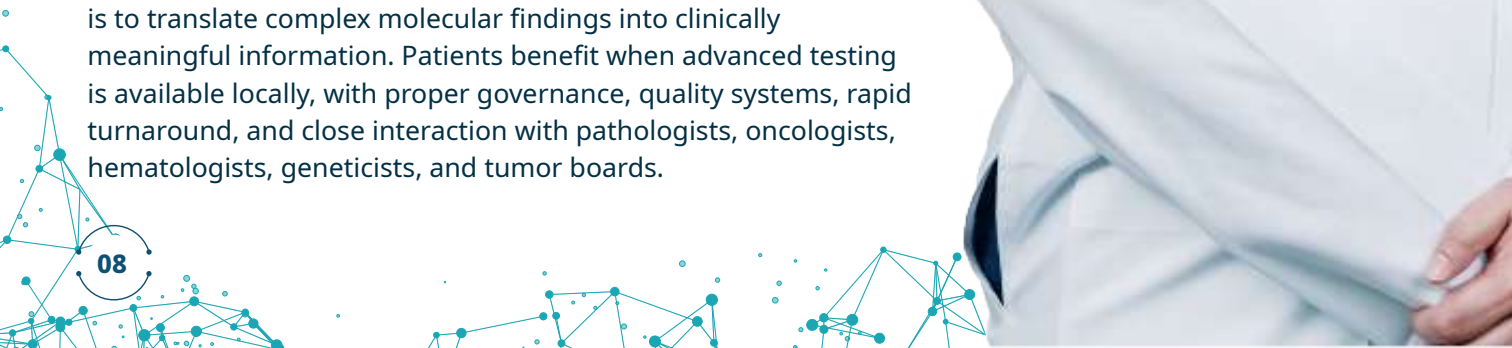
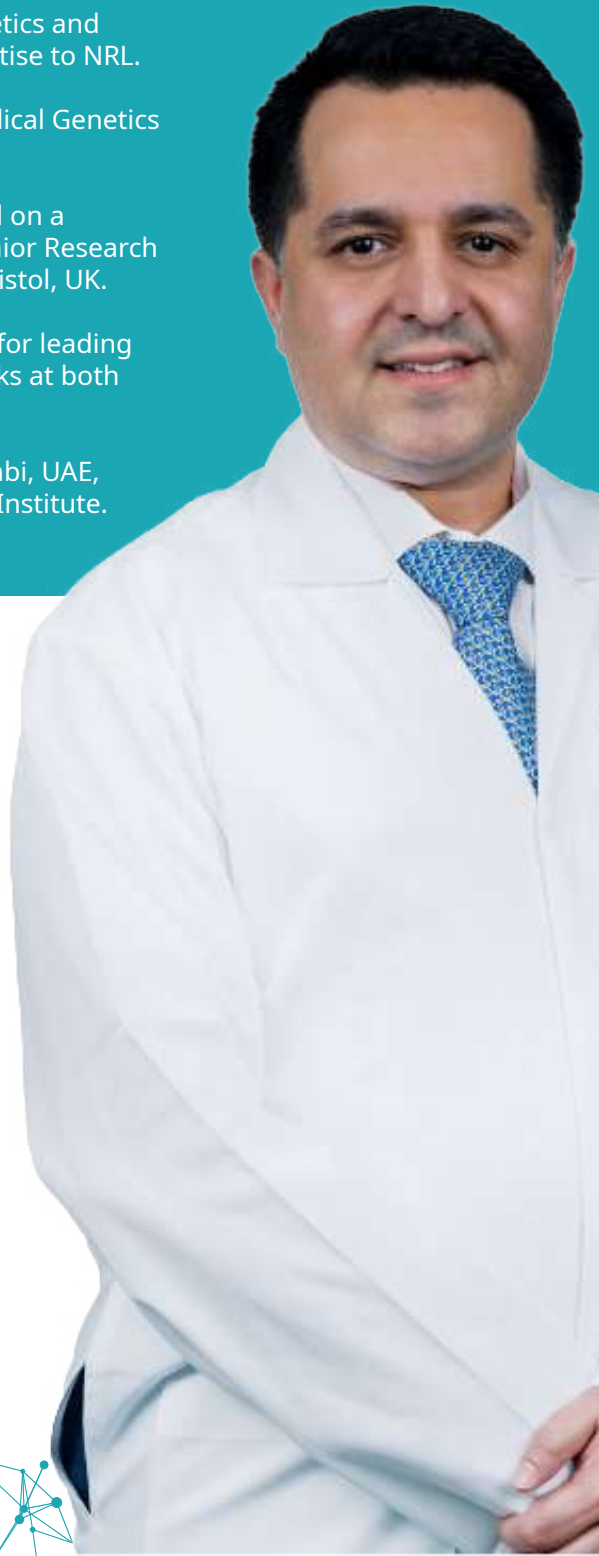
He is an adjunct faculty member of Khalifa University, Abu Dhabi, UAE, and a member of the Abu Dhabi University's Cancer Research Institute.

Dr. Yasaei leads NRL's Molecular Diagnostics & Genomics department, supporting clinicians across oncology, inherited and infectious disease, transplant-related testing, and genomic medicine.

His focus is less on generating data than on translating complex molecular findings into something a clinician can act on - interpreted within the full clinical and pathological picture. Following is his conversation with the Diagnostic Insights.

How would you describe NRL's role in molecular diagnostics for the region?

NRL is a high-complexity reference laboratory serving the UAE and wider region. Our mandate goes beyond accurate results - it is to translate complex molecular findings into clinically meaningful information. Patients benefit when advanced testing is available locally, with proper governance, quality systems, rapid turnaround, and close interaction with pathologists, oncologists, hematologists, geneticists, and tumor boards.



How has demand for comprehensive genomic profiling changed?

Substantially, in volume and sophistication. A few years ago, many requests were single-gene or hotspot tests. Today clinicians expect broad profiling that identifies actionable mutations, resistance mechanisms, fusions, and biomarkers for trial eligibility - driven by targeted therapies, immunotherapy, and the recognition that local data generation supports equity and faster access.

What do clinicians risk without advanced genomic insight?

Decisions made with an incomplete picture of tumor biology: missed therapeutic opportunities, delayed recognition of resistance, and reliance on sequential testing that consumes tissue and time. The real challenge is consistent interpretation and reporting, integrated into clinical and pathological context - strengthened at NRL by close collaboration with our Anatomical Pathology teams.

How has your workflow evolved to meet rising demand?

We have moved toward an integrated operating model, standardizing each step from pre-analytics to reporting, and managing capacity through both volume and complexity lens. Efficiency cannot come at the expense of quality. External quality assurance, including through the EMQN, supports our analytical confidence.

What excites you most about the future of precision oncology here?

Moving it from selective access to routine, locally delivered care and the convergence of comprehensive profiling, liquid biopsy, MRD, digital pathology, and AI-supported interpretation that lets us treat cancer as a dynamic disease.



“

“In precision medicine, regional capability matters: patients benefit when advanced genomic testing is delivered locally, with proper governance and fast turnaround.”

”

Your advice to laboratories building oncology testing programs?

Build around clinical need, not technology alone; invest early in quality, governance, and interpretation; choose scalable approaches; and remain ambitious regional laboratories should help shape precision medicine, not just import it.



When Prenatal Results *Do Not Match*

A Lesson in Confined Placental Mosaicism

A high-risk NIPT for trisomy 13. A chromosomally normal fetus. Both were correct and the explanation lies in where each sample comes from.

A recent NRL case illustrates a recurring diagnostic challenge in prenatal genetics: reconciling discordant results across NIPT, CVS, and amniotic fluid testing.

The pathway began with a high-risk NIPT result for trisomy 13. Because NIPT analyzes cell-free DNA derived predominantly from placental trophoblast, this finding raised suspicion of a trisomy 13 cell line within the placenta rather than the fetus. Follow-up QF-PCR on uncultured chorionic villi confirmed mosaic trisomy 13 in approximately 70% of cells - consistent with an abnormal line in the trophoblastic component.

Conventional cultured CVS karyotyping, however, returned a normal 46,XX result. The apparent contradiction is explained by tissue biology: cultured karyotyping reflects the mesenchymal core, which can diverge from the trophoblast in placental mosaicism.

To establish the true fetal constitution, amniocentesis was performed. Both QF-PCR and cultured amniotic fluid karyotype were normal. Because amniocytes are of fetal origin, these results superseded the placental findings and confirmed a chromosomally normal fetus for the tested chromosomes. The overall picture was most consistent with confined placental mosaicism (CPM) involving trisomy 13.

As Reilly et al. note, CPM is a recognized cause of false-positive NIPT and trisomy 13 is among the chromosomes where mosaicism is more frequently encountered following a high-risk result.

The case reinforces a principle worth restating to colleagues: Interpretation depends on the biological origin of the sample.

NIPT and CVS interrogate placental lineages; amniocentesis provides direct assessment of the fetus. When NIPT and CVS are abnormal, but ultrasound is not strongly suggestive of aneuploidy, amniocentesis may be required to avoid misinterpretation and careful counseling is essential throughout.

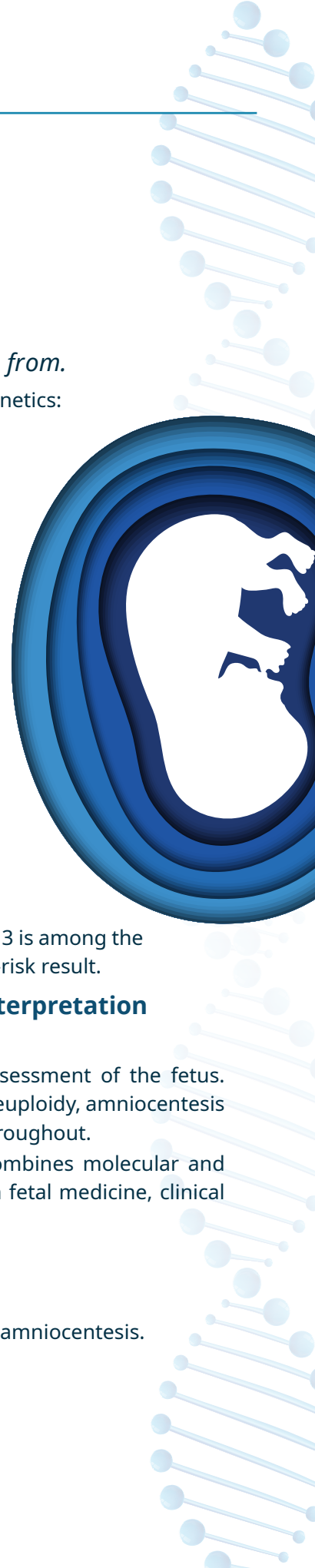
For NRL, the case reflects the value of an integrated prenatal pathway that combines molecular and cytogenetic methods with expert interpretation and close collaboration between fetal medicine, clinical genetics, and the cytogenetics laboratory.

Key takeaways:

- NIPT and CVS reflect placental cell lines; amniocentesis reflects the fetus.
- Discordant placental results with reassuring ultrasound warrant confirmatory amniocentesis.
- CPM is a recognized cause of false-positive NIPT, particularly for trisomy 13.

Cytogenetics & CytoGenomics Department, NRL

Reference: Reilly K, et al. Obstet Gynaecol. 37-25:28;2023



News from Capital Health Screening Centre & Tawam Molecular Imaging Centre

Diagnostic Insights brings together the diagnostic capabilities of the M42 cluster. Alongside NRL, the Capital Health Screening Center (CHSC) and Tawam Molecular Imaging Center (TMIC) share the updates below with a common thread this quarter in cognitive and preventive care.

Capital Health Screening Center (CHSC)

Preventive Health, Wellness, and Clinical Education

CHSC Achieves Approved Practice Setting (Intermediate) Accreditation

In Q1 2026, CHSC achieved Approved Practice Setting (Intermediate) accreditation - a recognition of its commitment to excellence in clinical education and high-quality healthcare training. As an accredited practice setting, CHSC provides a structured, supervised learning environment for nursing and radiography training programs, as well as return-to-practice programs for physicians.

Through evidence-based practice, experienced clinical educators, and comprehensive hands-on learning, CHSC helps its trainees develop the knowledge, clinical skills, and professional competencies required to deliver safe, effective, patient-centered care reflecting its ongoing dedication to developing the future healthcare workforce.

Applications: clinicaleducation@capitalhealth.ae

Integrated Wellness and Alzheimer's Care Packages

CHSC offers a comprehensive range of wellness and Alzheimer's care packages designed to support individuals across every stage of their health journey. Delivered in collaboration with NRL, the tailored wellness programs promote prevention, early detection, and healthy living, while specialized Alzheimer's packages provide compassionate, evidence-based care that enhances quality of life for patients and supports their families and caregivers.

These services run through a coordinated workflow across the diagnostic cluster ensuring seamless referrals, standardized care pathways, and continuity of care between providers. By leveraging multidisciplinary collaboration and consistent service standards, patients gain timely access to the right care, in the right setting, at the right time.

To explore the wellness and Alzheimer's packages, please refer to the CHSC website.

Tawam Molecular Imaging Center (TMIC)

Advanced Molecular Imaging and Precision Diagnostics

TMIC Launches Brain Amyloid PET/CT Service

Advancing early detection and precision care in cognitive disorders.

TMIC has successfully launched its first Brain Amyloid PET/CT service, a significant advancement in the region's neuroimaging capabilities. Despite the complexity of introducing a service that relies on a specialized radiotracer imported from the Kingdom of Saudi Arabia, TMIC implemented the program and delivered seamless patient care, with 14 patients scanned in the inaugural month.

Brain Amyloid PET/CT plays a vital role in assessing patients with memory impairment and suspected neurodegenerative disease by detecting amyloid plaque accumulation an important biomarker associated with Alzheimer's disease and other cognitive disorders. The service enhances diagnostic accuracy, supports earlier intervention, and contributes to improved patient outcomes across the UAE.

TMIC Welcomes Dr. Sureshkumar Chandran, Nuclear Medicine Physician

Abu Dhabi, May 2026 – Tawam Molecular Imaging Centre (TMIC) is pleased to announce the joining of **Dr. Sureshkumar Chandran**, Nuclear Medicine Physician, whose expertise in advanced molecular imaging and PET/CT significantly enhances TMIC's commitment to delivering world-class diagnostic and precision healthcare services.

Dr. Sureshkumar brings a distinguished academic and clinical background in Nuclear Medicine. He completed his specialist training at two of India's premier institutions and further advanced his expertise through a European Fellowship in Nuclear Medicine. In addition, he holds a Master's degree from the University of Pisa, Italy, reflecting his dedication to excellence and continuous professional development in the field of molecular imaging.

With specialized expertise in neurodegenerative disorder imaging, including Florbetaben Amyloid PET/CT, Dr. Sureshkumar has extensive experience in the molecular imaging of Alzheimer's disease, Parkinsonian syndromes, and other neurological conditions. His work supports earlier and more accurate disease detection, helping clinicians improve diagnostic confidence and make informed treatment decisions at an earlier stage.

Beyond neuroimaging, Dr. Sureshkumar possesses extensive experience in PET/CT interpretation, oncologic imaging, and theranostics, working collaboratively with multidisciplinary teams that include neurologists, geriatricians, psychiatrists, oncologists, and primary care physicians. His patient-centered approach ensures comprehensive and evidence-based diagnostic evaluations tailored to individual patient needs.



Strengthening Advanced Molecular Imaging and Precision Healthcare Services

A

bu Dhabi, June 2026 – Tawam Molecular Imaging Centre (TMIC) is proud to announce the successful launch of its first Brain Amyloid PET/CT service, marking a significant advancement in the region's neuroimaging capabilities.

Despite the complexity of introducing a new service that relies on a specialized radiotracer imported from the Kingdom of Saudi Arabia (KSA), TMIC successfully implemented the program and delivered seamless patient care. During its inaugural month, 14 patients underwent Brain Amyloid PET/CT scans, reflecting the growing need for advanced diagnostic solutions for cognitive and neurological conditions.

Brain Amyloid PET/CT imaging plays a vital role in the assessment of patients with memory impairment and suspected neurodegenerative diseases by helping clinicians detect amyloid plaque accumulation in the brain an important biomarker associated with Alzheimer's disease and other cognitive disorders.

This achievement reinforces TMIC's commitment to innovation, clinical excellence, and expanding access to cutting-edge molecular imaging services. The launch enhances diagnostic accuracy, supports earlier intervention, and contributes to improved patient outcomes across the UAE.



Where to Find Us

NRL ROUNDS

Our CME webinar series - quarterly sessions, led by NRL pathologists and scientists.

Sep 2026 - Alzheimer's Biomarkers: CSF & Plasma

Dec 2026 - Whole Genome Sequencing

UPCOMING CONFERENCES – SAVE THE DATE

FRONTIERS IN LABORATORY INNOVATION, ADVANCES IN HEMATOLOGY & TRANSFUSION MEDICINE 2026



Friday, October 30 – Sunday, November 1, 2026



Cleveland Clinic Abu Dhabi, UAE
Conference Centre

INTERNATIONAL SURGICAL PATHOLOGY CONFERENCE 2027 NATIONAL REFERENCE LABORATORY & INTERNATIONAL ACADEMY OF PATHOLOGY (ARAB DIVISION)



Thursday, January 14 – Sunday, January 17, 2027



Cleveland Clinic Abu Dhabi, UAE
Conference Centre

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Now, early detection is possible.

The advanced Alzheimer's blood test is the first-of-its-kind in the UAE and wider MENA region.

Get tested to:

- **Detect Alzheimer's early & accurately**
- **Track neurological changes over time**
- **Receive insights that guide better care**



**Advanced
Alzheimer's
blood test**

**Now available
in the UAE.**

**Earlier answers.
Better care.
Better prospects.**

800 77



مركز العاصمة للفحص الصحي
Capital Health Screening Centre

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المختبر المرجعي الوطني
National Reference Laboratory

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مركز توام للتصوير الجزيئي
Tawam Molecular Imaging Centre

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