



Health Minister Datuk Seri Dr Dzulkefly Ahmad (centre) at the convocation ceremony of the Health Ministry Training Institute Peninsular Malaysia Zone yesterday.

BERNAMA PIC

## PERMANENT POSTS

# 14,000 nurses to be recruited, says Dzulkefly

**IPOH:** The permanent appointment of trained nurses is expected to fill 14,000 vacancies nationwide, Health Minister Datuk Seri Dr Dzulkefly Ahmad said yesterday.

He said the move to discontinue interim contract appointments for nurses starting this

year was among the ministry's efforts to increase personnel at health facilities.

"Up to August, there were 83,158 nursing posts nationwide, of which 69,158 have been filled, leaving a deficit of some 14,000 vacancies. We have absorbed contract appointments perma-

nently as well."

He said this after officiating at the convocation ceremony of the Health Ministry Training Institute Peninsular Malaysia Zone here.

A total of 586 graduates received their scrolls at the convocation. **Bernama**

# Dr Bird sanggup turun padang rawat peliharaan pelanggan



Dr Davidclass Velankanni ketika merawat burung peliharaan pelanggan di rumahnya. (Foto: Shuan Dr Bird)

**Doktor veterinar tawar rawatan ke rumah, kenal pasti punca penyakit burung melalui pemerhatian persekitaran**

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Ramai pelanggan tetap memulakannya membuka klinik veterinar sendiri, seorang doktor veterinar kekal pendirian dengan pendekatan berbeza, turun padang ke rumah pelanggan untuk merawat burung peliharaan mereka.

Bagi Dr Davidclass Velankanni, 41, atau lebih mesra disapa Dr Bird, meninjau sendiri keadaan persekitaran burung yang sakit lebih memberi gambaran jelas terhadap punca masalah.

Katanya, melalui pemerhatian secara langsung, beliau dapat

menentukan sama ada penyakit berpunca daripada faktor pemakanan, kebersihan sangkar mahupun jangkitan.

"Melihat sendiri keadaan burung sangat penting. Dari situ saya dapat menilai dengan tepat punca masalah dan pada masa sama, memberi nasihat cara penjagaan yang betul. Ramai pemilik tidak sedar cara mereka memelihara burung sebenarnya mendedahkan haiwan kepada risiko sakit," katanya ketika di temui BH.

Sejak empat tahun lalu, beliau sanggup menaiki sendiri ke seluruh negeri, termasuk Kedah dan Kelantan, demi menyelamatkan burung peliharaan pelanggan.

Malah, ada yang tidak kisah menanggung kos perjalanan semata-mata kerana yakin dengan kepakaran beliau.

Menurut graduan Universiti Putra Malaysia (UPM) itu, antara kes biasa dirawat, termasuk jangkitan virus, bakteria, parasit serta kecederaan seperti patah kaki dan luka di mata.

"Rawatan sama seperti di klinik, iaitu pemeriksaan menyeluruh sebelum diberikan ubat-ubatan. Jika kes memerlukan pembedahan, saya akan menyewa klinik veterinar untuk melakukan prosedur itu," katanya.

Selain merawat, beliau turut menekankan aspek pencegahan dengan menasihati pemilik burung mengenai makanan sesuai, saiz sangkar ideal serta kaedah penjagaan rapi.

Walaupun lebih selesa menawarkan khidmat bergerak, beliau tidak menolak kemungkinan membuka klinik suara hari nanti. Buat masa ini, pendekatan ke

rumah pelanggan lebih menepati matlamatnya.

## Pesakit dari Australia

Dedikasinya bukan hanya mendapat perhatian di Malaysia, malah pernah menerima panggilan kecederaan daripada seorang pemilik burung di Australia pada 2022.

"Ketika itu tujuh burung kakak tua milik pelanggan sudah mati selepas rawatan lain gagal. Melalui panggilan video, saya menilai keadaan burung, jenis makanan serta ubat yang diberi. Saya nasehatkan supaya membeli ubat dan makanan tertentu."

"Setiap hari dia berikan perkembangan. Pada awalnya saya mengjangka burung itu tidak sempat diselamatkan, tetapi hari kelapan pelanggan hubungi saya semula, penbara burungnya kembali sihat dan boleh terbang," katanya.

Bapa kepada seorang anak perempuan itu mengakui minat mendalam terhadap burung wadiah

berputik sejak usia tujuh tahun, walaupun tidak pernah dibenarkan memelihara haiwan itu ketika kecil.

"Waktu remaja saya kerap ke kampung dan belajar daripada orang tua yang memelihara pelbagai spesies burung. Dari situ saya kumpul pengalaman dan ilmu yang berguna hingga kini," ujarnya.

Anak Jati Kapar itu pada asalnya bekerja dalam bidang logistik selepas tamat diploma, sebelum mengambil kursus veterinar secara dalam talian dan akhirnya menamatkan pengajian dalam bidang berkenaan.

Kini, impiannya tercapai apabila beliau sendiri memelihara lebih 226 burung pelbagai spesies termasuk African Grey, Blue-and-Gold Macaw dan Yellow-collared Macaw.

"Melihat burung-burung ini setiap hari memberi kepuasan luar biasa. Selain memenuhi impian sejak kecil, saya juga terus belajar mengenai tingkah laku dan penjagaan burung," katanya.





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**HIDUNG** tersumbat mungkin kelihatan seperti masalah kecil, tetapi bagi sesiapa yang pernah mengalaminya, pasti tahu betapa tidak selesanya keadaan itu. Sukar bernafas, tider terganggu, dan rasa tidak selesa sepanjang hari boleh menjejaskan rutin harian.

Ia biasanya berpunca daripada selesma, alahan, jangkitan sinus (resdung), atau persekitaran yang terlalu kering. Walaupun kelihatan remeh, hidung tersumbat boleh membawa kepada masalah kesihatan lain jika dibiarkan berlarutan, seperti sakit kepala, karang tider, atau jangkitan pada telinga.

Masalah hidung tersumbat masih boleh dirawat, salah satu cara paling berkesan ialah dengan menyedut wap panas. Wap boleh membantu melonggarkan lendir dalam rongga hidung dan melembapkan saluran pernafasan. Anda hanya perlu rebus air panas, tuangkan ke dalam mangkuk besar, dan halakan muka anda ke wap sambil menutup kepala dengan tuala. Tambahkan beberapa titis minyak pati seperti eucalyptus atau pudina untuk kesan yang lebih kuat. Lakukan selama 10-15 minit, dua kali sehari untuk hasil terbaik.

Seperti sedatan wap, mandi air panas juga boleh membantu membuka saluran pernafasan. Ketika mandi, wap dari air panas akan melembapkan rongga hidung dan membantu lendir mengalir keluar

dengan lebih mudah. Selain itu, mandi air panas juga membantu tubuh anda lebih tenang dan mengurangkan tekanan akibat kesesakan hidung.

Semburan air garam juga boleh membantu membersihkan rongga hidung dan mencairkan lendir yang menyebabkan sumbatan. Anda boleh mendapatkannya di farmasi atau membuat sendiri di rumah menggunakan air masak yang bersih dicampur dengan sedikit garam tanpa iodin. Gosokkan alat seperti neti pot atau botol semburan kecil untuk menyemburkan air garam ke dalam lubang hidung secara perlahan. Pastikan anda lakukan ini dengan cara yang betul dan berhati-hati untuk mengelakkan jangkitan silang.

Meminum air yang mencukupi juga amat penting ketika mengalami hidung tersumbat. Air membantu mencairkan lendir dalam saluran hidung, menjadikannya lebih mudah untuk disingkirkan. Selain air kosong, anda juga boleh mengambil sup panas, teh herba, atau air kelapa untuk membantu mengekalkan kelembapan tubuh. Elakkan minuman berkafein atau beralkohol kerana ia boleh menyebabkan dehidrasi dan memperburukkan keadaan.

Ketika tider, tinggikan kepala anda sedikit dengan menggunakan bantal tambahan. Ini membantu lendir mengalir keluar dan mengurangkan tekanan dalam rongga hidung. Tider dalam posisi rata boleh menyebabkan lendir terkumpul

dan membuatkan kesesakan menjadi lebih teruk. Jadi, dengan posisi tider yang betul, anda boleh mendapatkan relief yang lebih berkualiti walaupun dalam keadaan tidak sihat.

Sekiranya anda kerap mengalami hidung tersumbat akibat alahan, penting untuk mengenal pasti dan mengelakkan pencetusnya seperti habuk, bulu haiwan, asap rokok, atau debunga. Pastikan bilik tider anda bersih dan bebas dari habuk. Gunakan penapis udara atau humidifier untuk mengekalkan kelembapan di dalam bilik, terutamanya jika anda menggunakan penghuwa dingin yang boleh menyebabkan udara menjadi kering.

Hidung tersumbat bukan sahaja menyusahkan, malah boleh menjejaskan kesihatan dan kualiti hidup harian anda. Namun, dengan beberapa langkah mudah seperti yang dikongsikan di atas, anda boleh melegakan kesesakan tanpa perlu terlalu bergantung pada ubat-ubatan. Jika simptom berlarutan lebih dari seminggu atau disertai dengan demam tinggi, sakit muka yang teruk, atau lendir berwarna kahpauan, sebaiknya baringnya berjumpa doktor untuk pemeriksaan lanjut. Kesihatan itu anugerah, dan menjaga pernafasan yang lancar adalah langkah awal untuk memastikan tubuh sentiasa dalam keadaan terbaik.



## Hidung TERSUMBAT?

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## BAD BREATH

### Is This Normal?

Bad breath, or in medical terms known as halitosis, is a condition commonly experienced by many individuals. It can occur in various situations, such as after waking up, after consuming certain foods, or due to unstable health conditions. A frequently asked question is: Is bad breath considered normal?

Physiologically, it is normal for someone to experience bad breath at certain times, especially upon waking. This happens because saliva production in the mouth decreases during sleep. Saliva functions as a natural cleanser that helps eliminate

bacteria. When there is insufficient saliva, bacteria can easily multiply in the mouth and produce sulphur compounds that cause foul odours. Therefore, morning breath can be considered normal and usually disappears after brushing teeth or rinsing the mouth.

However, if bad breath persists throughout the day, occurs repeatedly every day, and does not go away despite maintaining oral hygiene, it may be a sign of a more serious health issue. This problem should not be taken lightly, as it can affect a person's self-confidence, cause discomfort

among others, and may indicate underlying diseases.

There are various causes of bad breath. One of the main reasons is poor oral hygiene. Many people believe that brushing their teeth twice a day is sufficient, but they often forget to clean their tongue and use dental floss to remove food debris stuck between the teeth. When this food residue is not properly cleaned, it decays and becomes a breeding ground for bacteria that produce unpleasant odours.

Gum diseases such as gingivitis and periodontitis also contribute to bad breath. Swollen, bleeding, or pus-filled gums can emit a strong foul smell. Furthermore, untreated tooth decay or cavities can become storage areas for food debris and bacteria, further intensifying the odour.

Apart from oral-related factors, some causes of bad breath stem from internal health issues. These include infections in the upper respiratory tract such as sinusitis or tonsillitis, digestive disorders such as gastritis or acid reflux, as well as medical conditions like diabetes, liver disease,



or kidney problems.

Lifestyle also plays a crucial role in contributing to this problem. Individuals who smoke, chew tobacco, or consume alcohol are more likely to suffer from bad breath, as these substances reduce saliva production, dry out the mouth, and promote bacterial growth. Certain foods such as garlic, onions, beef, jerky, and durian can also cause strong-smelling breath even when consumed in small amounts.

However, bad breath is not an issue without solutions. With proper

oral and dental care, along with lifestyle changes, bad breath can be reduced or even completely eliminated. Steps that can be taken include brushing teeth at least twice a day with fluoride toothpaste, using dental floss, cleaning the tongue, and rinsing with antibacterial mouthwash. Additionally, regular dental check-ups every six months are important to detect and treat any dental or gum issues early.

In conclusion, bad breath may be considered normal in

certain situations, such as after sleeping or eating specific foods. However, if the odour is persistent and strong, it is not something to be ignored. It may indicate a more serious health condition that requires further medical or dental evaluation. Therefore, it is the responsibility of every individual to maintain good oral hygiene and overall health to ensure fresh breath, good health, and confidence in social interactions. Indeed, fresh breath reflects a healthy body.



By KAYLA YAP

THE first time the seemingly healthy woman gave birth, she went into heart failure.

She recovered and went on to deliver her second child a few years later.

Doctors cleared the woman to go home with her newborn.

But within months, the woman in her early 20s was rushed back to the hospital, again in heart failure, and ultimately died in the intensive care unit of Penn Medicine in Philadelphia, Pennsylvania, United States.

Several years later, a new study has solved the mystery behind her death: an undiagnosed genetic condition.

The woman is one of many adults whose fates could possibly have been changed with a DNA test.

The study, published in *The American Journal of Human Genetics*, found that one in four adult patients in intensive care units across the Pennsylvania health system had a genetic condition linked to the medical issue for which they were admitted.

Half were unknown at the time.

"I thought it would be a concerning number, but this was larger than even I thought it was going to be," said Assistant Professor Dr Theodore Drivas, a medical geneticist at the Hospital of the University of Pennsylvania and senior author of the study.

The researchers also found that the chances of a genetic condition being caught varied widely by race.

Sixty-three percent of white patients knew about their condition, compared to only 22.7% of Black patients.

This was based on a sample of 365 patients ages 18 to 40 admitted to an intensive care unit at Penn Medicine who had signed up for the BioBank, a repository for health-related data used for research.

Their blood samples were in the bank, allowing Dr Drivas and his team to retrospectively sequence their genomes for disease-causing mutations.

When they sequenced the woman's genome, they found she had a mutation in a gene called *Titin* that's known to cause an especially high risk of heart failure in women during and after pregnancy.

"We probably would have managed her differently if we knew," Dr Drivas said.

Doctors could have periodically monitored her heart function after the second pregnancy.

Instead, she went home after giving birth and only came back a few months later when her heart failure had progressed.

Similarly, another patient had multiple aneurysms following surgery that could have possibly been prevented if she had been screened for her genetic condition.

Though the vast majority of patients in this study survived their intensive care unit visit, many could have received more targeted care had



Genetic testing is more feasible today than previous decades, thanks to the costs getting lower and the process getting faster. — TNS

## Offer genetic testing to everyone

A recent study reveals that many adults have undiagnosed genetic conditions, pointing to a need for universal testing.

their condition been found.

Three-quarters of the disorders had standard medical management recommendations available.

It's unknown if the outcomes of the patients studied could have been improved.

The study did not identify individual patients, including the woman whose death after childbirth was cited as an example.

The issue is that genetic testing is rarely offered to adults, even when they are critically ill, Dr Drivas said.

He sees this study as a call to action for intensive care unit doctors to implement universal genetic testing — which is now widely available and often costs

as little as a few hundred dollars — for all adults, so that no one goes undiagnosed.

"We need to switch to a model where the default is to send [patients for] genetic testing, not the exception," he said.

### Test adults, too

For decades, the medical field has operated under the assumption that the older you are, the less likely you are to have a genetic disorder, Dr Drivas explained.

The reason for that is a lot of genetic diseases show up in early childhood.

Doctors tend to look for those so-called "paediatric-onset" disorders, rather than ones that appear later in life.

"We just assume, if you're 30 years or older, you can't possibly have a genetic disease," he said. Plus, the threshold for getting tested is high.

Commonly missed genetic conditions are those that increase the risk of aneurysms, which is a bulge in the wall of an artery that can burst or cause a clot. — Wikimedia Commons

Conditions that cause intellectual impairment or affect multiple parts of the body are more obvious signs

of a genetic condition.

Meanwhile, most of the diseases found in Dr Drivas' study only cause symptoms in adulthood, and may affect just one organ.

That bias is also reflected in the workforce, with most medical geneticists trained to work with children, not adults, Dr Drivas added.

The genetic conditions most commonly found in this study were cystic fibrosis (a condition that causes damage to the lungs, digestive system and other organs) and Marfan syndrome (a disorder that affects the connective tissue) — both of which tended to already be diagnosed.

The diseases that were commonly missed included cardiomyopathies, which affect the heart muscle and increase the risk of heart failure.

Other commonly missed genetic conditions were those that increased the risk of aneurysms, which is an abnormal bulging of an artery caused by weakness in the artery wall, the study found.

A woman in her 30s had been wheeled into the intensive care unit with multiple aneurysms around her brain and underwent a standard surgery to treat them.

But the treatment ended up causing her to develop more aneurysms at the sites where doctors had been accessing her arteries.

This was characteristic of a condition called vascular Ehlers-Danlos syndrome, which is caused by mutations in the COL3A1 gene.

However, the woman had never been offered genetic testing.

When Dr Drivas sequenced her genome, he confirmed she indeed had the mutation.

Had they known, they could have warned doctors not to perform that particular procedure.

"We would have said, 'Hey, stop touching her arteries. They're really fragile,'" he said.

Most of the patients included in this study had their first intensive care unit visit within the past 10 years.

The researchers hope to eventually return these testing results to the patients in the study, so that they can get more informed care going forward.

### Lower costs

Dr Drivas isn't sure why the racial disparity in diagnoses is so high.

It tended to be reflected in conditions that were less obvious or perhaps were not causing symptoms yet.

The solution to these disparities may be to implement universal testing in intensive care units.

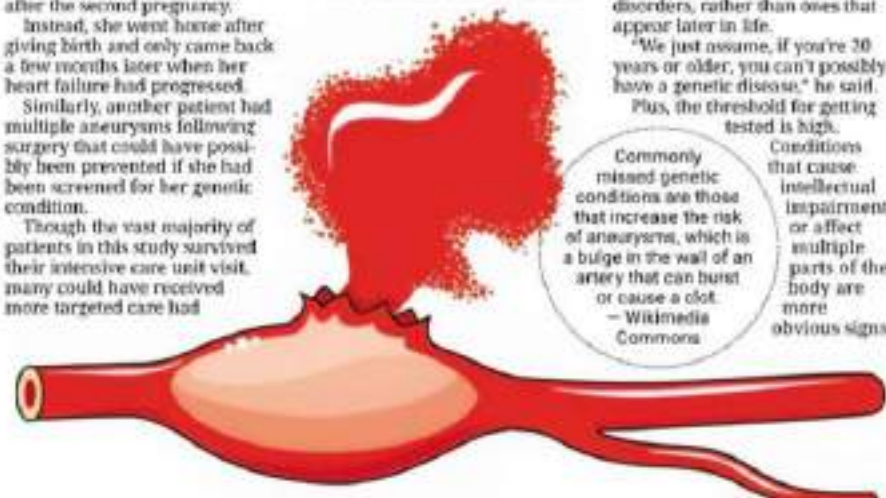
A study from the University of Washington had shown that Black children were much less likely to get genetic diagnoses than their white counterparts.

However, when they made genetic testing the default in the neonatal intensive care unit, "that disparity goes away completely, and everyone gets good care," he said.

Genetic testing is more feasible today than previous decades, thanks to the costs getting lower and the process getting faster.

For example, if someone presents with heart failure, doctors could order a targeted gene panel that should cost no more than US\$250 (RM1,052) and, for most patients, be covered by insurance, according to Dr Drivas.

"Price has gone down, the reliability of testing has gone way up, and so it just makes it, in my opinion, kind of a no-brainer to get this done," he said. — The Philadelphia Inquirer/Tribune News Service.





By CHRISTOPHER FAM  
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AS Malaysia sets its sights on becoming a regional leader in artificial intelligence (AI) through efforts like the upcoming National AI Action Plan 2030, research and development (R&D) has become a centrepiece for the country's future.

Global players are already setting up shop for local R&D facilities, with AMD, for instance, opening up an office and engineering lab in Bayan Lepas, Penang last month.

Meanwhile, others are looking to invest hefty sums in developing R&D centres, like China's Rianon Corporation, which is planning an RMD200 facility in Johor, according to Prime Minister Datuk Seri Anwar Ibrahim.

### Academic boost

Local universities have also stepped up to play a key role in developing talent, and providing the facilities needed to further push technological boundaries and work towards the country's ambitions.

Take Universiti Putra Malaysia's (UPM) planned AI Sandbox, announced in early August, which aims to create a safe and controlled environment that can be used by universities, industries, and government agencies to experiment, test, and validate AI solutions before large-scale deployment.

According to Dr Azree Nazri, head of laboratory at the university's Institute of Mathematical Research, the Sandbox is modelled after the Taman Maya AI project in Terengganu that he had previously developed, which he says directly shaped UPM's model of test-beds and integrated R&D-commercial pipelines.

"Like Terengganu's Taman Maya AI, it focuses on rapid prototyping, innovation cycles, and de-risking adoption – ensuring that AI projects are practical, responsible, and scalable while fostering talent, IP (intellectual property) creation, and commercialisation.

"Looking ahead, the long-term vision is for the AI Sandbox to serve as a launchpad for developing more national-level AI projects, driving innovation across key sectors," he says.

The Sandbox will be situated on UPM's campus and is designed as a platform to test and develop smart city innovations in areas including agriculture, healthcare, mobility, governance, and biotechnology, with operations targeted to begin by end of this year.

It will even come equipped with its own private 5G network, allowing the development of systems supported by the technology.

"Initial studies will focus on BVLOS (beyond visual line of sight) drone safety, AI-driven traffic systems, and conflict applications.

"The facility will also strengthen collaboration among students, researchers, startups, and indus-

try, creating a scalable innovation pipeline integrated into UPM's AI ecosystem," he says.

This in turn has given birth to one of the initial projects under the Sandbox, that being the AI Corridor set to launch next year, which will serve as a test-bed for autonomous drone technology.

"The AI Sandbox acts as a test-bed for safe experimentation, prototyping, and validation of AI solutions," Azree says. "The AI Corridor then scales these proven innovations through shared compute, talent pipelines, and commercialisation pathways."

"Together, they form a connected ecosystem – Sandbox feeds innovation, while Corridor ensures real-world impact."

He adds that Sandbox will also house projects aside from the Corridor, which will be announced in phases as they reach maturity.

### The drone zone

In establishing the AI Corridor, UPM seeks to eventually connect all Malaysian smart cities together with what it calls a "superhighway" that will see the deployment of drones and unmanned aerial systems.

In the long run, Azree described the AI Corridor as "a national plan to place Malaysia at the forefront of a transport revolution" and believes that the AI Corridor will transform Malaysian e-commerce logistics, particularly for last-mile and middle-mile delivery.

"Just as trains reduced transport times from days to hours, UAVs (unmanned aerial vehicles) will reduce them from hours to minutes, using energy from renewable sources," he says, adding that BVLOS would extend the operating distance of drones and unlock their true potential.

"Once UAVs can travel long distances safely alongside other sky users, they will be more readily used for e-commerce or last-mile delivery – amongst many other beneficial uses."

Benefits would come in the form of lower costs as part of a transition from traditional vehi-

cles like motorcycles to autonomous drones operated from BVLOS, which avoids fuel charges, congestion, and delays while also being faster and more environmentally friendly.

"The real strength of the Corridor is enabling UAVs to fly the Euclidean path – the shortest, most direct route.

"However, the challenge is ensuring these straight-line paths are legally approved by regulators such as CAAM (Civil Aviation Authority of Malaysia), to guarantee safety, compliance, and airspace management.

"In the middle mile, the Corridor connects smart cities between states, creating an aerial superhighway for goods. For example, a UAV could carry parcels from a Johor distribution hub to a Kuala Lumpur smart city hub in hours instead of by-day truck journeys," he says.

This would improve efficiency, reduce logistics costs, and strengthen Malaysia's national e-commerce and logistics network, he claims.

At the Corridor's launch, it will initially target coverage

of all UPM grounds with a 5G-powered drone route, with plans to later expand with further routes that include the Malaysian Agricultural Research and Development Institute, Serdang Hospital, and beyond.

This would in turn evolve into a future transport system using AI-powered infrastructure, enabled by vehicle-to-vehicle (V2V) and vehicle-to-person (V2P) communication to ensure safety for drones, pedestrians, and autonomous vehicles.

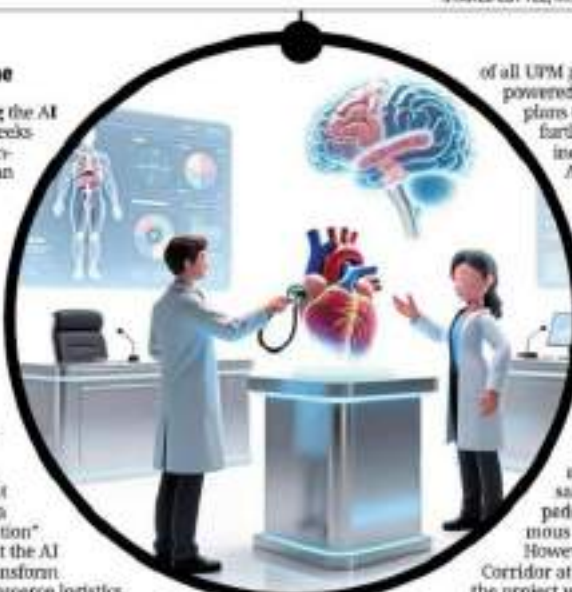
However, at the start of the Corridor at the Sandbox facility, the project will operate within designated airspace, which is 1,500ft (457m) wide and 300ft (91.4m) high – with timed flight paths scheduled at 60-second intervals.

Azree further says that the AI Sandbox-Corridor ecosystem will offer students hands-on training, give researchers access to scalable R&D and commercialisation pathways, and provide startups with affordable testing grounds, market entry opportunities, and funding support.

By bringing these groups together, it aims to build skills, share resources, and spark collaborations, fostering innovation, entrepreneurship, and talent pipelines.

### Virtual visions

Universiti Putra Malaysia (UPM) is not the only university driving R&D efforts in the country. The Asia Pacific University of Technology and Innovation (APU) has



# Forging the future



This vision is human created. AI-assisted



also established XR Studio, an on-campus facility dedicated to augmented reality (AR), virtual reality (VR), and mixed reality (MR).

The Studio, currently in full operation, is centred around the development and testing of real-world applications of the various technologies under the extended reality (XR) umbrella by both students and researchers.

APU's chief innovation and enterprise officer, Prof Dr Vinesh Thiruchelvam, positions the facility as a comprehensive platform that "integrates advanced technologies like 360-degree volumetric video capture, mixed reality smart glasses, and high-spec gaming workstations", enabling students and researchers to fully engage with XR development and experimentation.

Projects from the APU XR Studio range from teaching and learning tools, to full-fledged industry-focused solutions. This includes the development and

evaluation of a microbiology lab simulation built in VR for teaching and learning, as well as several collaborations with other industry partners.

Another is centred around virtual cycling training, with the system designed to simulate virtual, uphill climbs, along with tilting slopes, which gives riders the ability to pre-emptively experience the real-world conditions of competition tracks.

Others include a mental health-centric VR game application, while another project with IMU Hospital aims to evaluate its operating theatre using a VR experience designed to enhance clinical training for medical students.

A similar facility can also be found at the Taylor's University Virtual Online Future Technology and Extended Reality (Vortex XR) Lab.

According to the lab's director, John Hii Ing Kieng, the lab acts as an XR and AI incubator that provides students access and hands-on experience with the same tools used by the global XR and AI industry.

"Perhaps most exciting is the entrepreneurial edge. Many of these projects have clear commercial potential. Students experience the full journey - ideation, prototyping, pitching, and exploring real market pathways."

"For some, this leads directly into careers in R&D and innovation;

for others, it becomes the launchpad for their own startups," he says.

This includes development in Unreal Engine 5 and Unity 6 for the creation of digital twins and high-fidelity simulation work, along with access to hardware like the Apple Vision Pro, Meta Quest headsets, and other AI-powered XR glasses.

"We are also heavily investing in AI innovation. By using agentic AI frameworks and large language models such as GPT-5 and Gemini, we are developing 24/7 AI tutors, personalised learning companions, and lifelike virtual characters that can interact with students in role-play scenarios."

"Another exciting area is Emotion AI, or 'affective computing'. These platforms can detect and respond to a user's emotional state in real time, allowing us to design empathetic and adaptive virtual experiences - whether that is a mental health training module, a customer service simulation, or a medical empathy exercise."

"The lab is exploring the technologies that are not just shaping the future of XR, but also reshaping how students learn, practise, and prepare for real-world challenges," he says.

The Vortex XR Lab is currently developing AI-powered platforms for the university's students intended to provide a space to develop skills in public speaking, teamwork, and communication in safe, simulated environments. Hii further highlights its flag-

**AI-powered solutions are essential in helping organisations detect and respond to cyber threats faster based on real-time data.**

Prof Dr Vinesh Thiruchelvam



**The lab is exploring the technologies that are not just shaping the future of XR, but also reshaping how students learn, practise, and prepare for real-world challenges.**

John Hii Ing Kieng



**The long-term vision is for the AI Sandbox to serve as a launchpad for developing more national-level AI projects, driving innovation across key sectors.**

Azree Nazri



ship project: an AI-powered mental health training platform developed with the Taylor's University Mental Health and Well-being Impact Lab, which "uses AI avatars to let counselling and psychology students practice therapy sessions in repeatable, realistic scenarios".

He adds that the Lab aims "to continue developing it as Vortex XR Lab's first commercial Content-as-a-Service product, with potential applications for universities, corporate wellness programmes, and healthcare providers both nationwide and globally".

The facility itself has been integrated into 31 undergraduate programmes at the university, and has seen use for immersive virtual lessons.

"Here, law students can argue cases in a virtual courtroom, medical students can explore the human body in fully interactive 3D, architecture students can walk through their designs before a single brick is laid, and business students can sharpen leadership and communication skills through AI-powered simulations," Hii says.

#### Cyber defence to the fore

Also on the Asia Pacific University of Technology and Innovation campus is the Cybersecurity Talent Zone, which focuses on developing and equipping students to tackle real-world cyber threats.

"The main goal is to provide our students with an experiential learning environment for cybersecurity and to advance solution developments or research in the digital forensics area," Prof Vinesh says.

With AI entering the picture and becoming a new vector of attack for threat actors, Vinesh says that the use of machine learning and AI to defend against them has also been reshaping the cybersecurity landscape.

"AI-powered solutions are essential in helping organisations detect and respond to cyber threats faster based on real-time data."

"The only reverse obstacle to this is that cybercriminals are also leveraging AI to refine their attacks."

"This will be the cyberwar of wars in the coming future, in which AI sits as a white or black solution," he says, adding that this area is where the efforts of research facilities like APU's Talent Zone will be shifting to.

Prof Vinesh believes that the research focus will be squarely on the AI deployment for early detection of breaches, especially on patterns towards fraudulent access.

"AI can also be deployed for first-sign detection of website spoofing via smart domain security measures. The other advancing research area is in digital forensics, in which investigative studies are conducted to gather evidence using AI to visualise and report crime on the Internet and in cyberspace."

"AI algorithms and techniques will be the virtual assistant for studying complex digital data and enhancing mitigation strategies. This will be added to the Cybersecurity as a Service (CaaS) offering in the near future," he says.





HARVINDAR  
SINGH



## Comment

# Businesses face rising tax obligations

THERE have been a spate of changes and developments in recent times in the Malaysian tax environment, giving rise to increased responsibility for businesses on the taxation front as well as causing a significant increase in tax compliance costs.

Some of the key changes include the expanded sales and service tax (SST), with the government broadening the scope of both sales tax (on non-essential and luxury goods) and services tax (to more service sectors).

Some items that were previously exempt are now taxed; whilst some sectors (for example leasing/rental, construction, private healthcare, education, beauty services) are now subject to service tax.

Businesses have until Dec 31, 2025 to adapt to the new SST scope without being subject to penalties.

The self-assessment system (SAS) has been expanded to real property gains tax from January 2025, whilst stamp duty is being phased in under the SAS from January 2026.

Under SAS, businesses are responsible and accountable for correctly interpreting the law and applying it accordingly, as well as estimating their tax liabilities accurately and paying the right amount of tax.

To support compliance, the Inland Revenue Board (IRB) has been implementing digital tools such as e-filing, MyTax, automatic verification and data integration.

E-invoicing has been implemented since August 2024 and a large number of e-invoices have been issued to date by the IRB's MyInvois portal and it is expected to be fully implemented by Jan 1, 2027, once the relaxation period for the last phase of taxpayers that are due to implement e-invoicing from July 1, 2026, expires by Dec 31, 2026.

To further enhance compliance levels, various enforcement steps have been undertaken by the IRB.

This includes using more data-analytics, carrying out risk profiling and conducting

**Under SAS, errors or omissions are likely to be taxed with penalties. Taxpayers can expect more audits or investigations to take place.**

strategic audits and investigations.

Certain quarters have estimated that the IRB raised RM16.95bil in additional taxes and penalties between January 2024 and August 2025 via audits and investigations which were driven by risk analysis.

Due to the changes taking place, affected taxpayers need to update or install systems for e-invoicing, record keeping and electronic transactions, as well as re-configure accounting, pricing and invoicing systems.

Small businesses will need to adjust to e-invoice systems, cost of POS (point of sale)/invoicing software integrations and incur costs for staff retraining. The proper tracking of taxable or exempt goods or services needs to be in place.

With any new rules, effort has to be put in to understanding them, for example which goods or services are subject to SST, the thresholds involved, registration obligations and the interpretation of exemptions.

In many cases, hiring or contracting tax professionals becomes inevitable.

Businesses in the sectors that are newly taxed (for example construction, leasing) report significantly increased monthly operating costs from the SST expansion.

The operating cost increases for small enterprises are said to have ranged from about 6% to 11% due to the combined effects of cost-increases (including expanded SST) and other regulatory moves depending on whether they are in retailing or manufacturing et cetera.

For fixed-price contracts (common in construction), absorbing tax increases can squeeze margins.

The government projects additional revenue from the revised SST framework, but

this implies businesses have to carry the compliance burden (updating systems, prices, contracts) in order to collect remitted taxes.

Under SAS, errors or omissions are likely to be taxed with penalties.

Taxpayers can expect more audits or investigations to take place.

Data-driven enforcement means less room for negligence and non-compliance, therefore businesses must invest in compliance tools to reduce the risk.

Smaller enterprises often have less capability (both in systems and expertise).

They're more impacted by needing new registrations, ensuring they meet thresholds and navigating contract transitions.

Other challenges and risks for businesses include transitional ambiguity, for example contracts that are signed before certain dates may get exemptions and therefore companies would have to track contract dates, service delivery dates, et cetera to ascertain the tax exposure.

The interpretation of the law itself can lead to confusion and disputes as some definitions or exemptions may not be clear (for example what counts as "financial services", or the difference between residential and commercial leasing) giving rise to the risk of misapplication.

Businesses have to evaluate whether the taxes imposed should involve a price pass-through – passing on the increase in cost to consumers which may result in reduced demand and losing competitiveness.

On the other hand, absorbing the tax or the additional compliance cost may hurt margins.

For small and medium enterprises, increased overheads tend to weigh more heavily than revenue and they may struggle

to absorb or implement changes smoothly.

It is envisaged by various quarters that for many small businesses, operational costs could increase several percent (5% to 10% or more) of current costs.

For mid-size and larger firms with more complex supply chains or services, cost increases could be in double digits in percentage terms when factoring in tax on previously untaxed inputs and compliance overheads.

Further, depending on the sector, the services that are newly subject to services tax (education, leasing, construction, healthcare/private wellness) will face steeper cost bumps.

To reduce costs and avoid surprises, businesses should consider early adaptation by upgrading accounting and relevant information systems (invoice tracking, e-invoicing, forecasting SST liabilities).

Staff training and consulting should be conducted to understand the changed tax scope, thresholds, exemption conditions and relevant details.

A review of all contracts to see how new tax rules apply (especially for long-term or fixed-price contracts) should be carried out.

It is probably a good idea to seek professional advice to ensure proper classification, to strategise and to plan pricing formulations accordingly.

It is imperative to keep abreast of government guidance and rulings to reduce the risk of misinterpretation.

Harvinder Singh is a Chartered Tax Institute of Malaysia council member and SCS Global Consulting (M) Sdn Bhd tax partner. The views expressed here are the writer's own.





# Pembelajaran melalui permainan

20dB Hearing tingkat kesedaran penjagaan pendengaran kanak-kanak di KidZania

Oleh **NURUL NABILA AHMAD HALIMY**  
**PETALING JAYA**

diperkenalkan dengan peranan ahli audiologi dalam bidang kesihatan.

"Misi kami ialah menggabungkan teknologi pendengaran bertaraf dunia dengan sentuhan penjagaan tempatan," katanya selepas Majlis Pelancaran 20dB Mini Centre di sini pada Jumaat.

Hadir sama, Pensyarah Universiti Kebangsaan Malaysia, Dr Marniza Omar; Presiden Persatuan Audiologi Malaysia merangkap Pensyarah Universiti Islam Antarabangsa Malaysia, Profesor Madya Dr Sarah Rahmat dan Ketua Jabatan Audiologi, Kementerian Kesihatan Malaysia, Dr Nur Azyani Amri.

Tambahnya, inisiatif tersebut sekali gus memudahkan orang ramai memahami penjagaan pendengaran yang diyakini keluarga dan bersifat mesra.

"Pendekatan pembelajaran melalui permainan membolehkan kanak-kanak memahami kepentingan pendengaran.

"Mereka juga dapat melihat penyelesaian seperti alat bantuan pendengaran sebagai satu cara menikmati kehidupan lebih bermakna," ujarnya.

Malaysia ketika ini berdepan kekurangan pakar audiologi berbanding keperluan jangka panjang, sekali gus menjadikan pendedahan awal kepada bidang itu sangat penting.



Dari kiri: Dr Marniza Omar, Yong Yaw, Sara dan Dr Nur Azyani pada Majlis Pelancaran 20dB Mini Centre di Petaling Jaya pada Jumaat.

20dB Hearing dengan kerjasama KidZania Kuala Lumpur melancarkan Pusat Pembelajaran 20dB bagi meningkatkan kesedaran mengenai kepentingan penjagaan pendengaran sejak usia muda.

Pengasas dan Ketua Pegawai Eksekutif Kumpulan 20dB Hearing, Mok Yong Yaw berkata, pusat berkenaan memberi peluang kepada kanak-kanak untuk merasai pengalaman secara langsung melibatkan bunyi, ujian pendengaran serta simulasi kerjaya ahli audiologi.

"Melalui aktiviti yang menyeronokkan dan interaktif, kanak-kanak bukan sahaja belajar mengenali bunyi malah

Dengan memperkenalkan audiologi sebagai kerjaya di KidZania, inisiatif ini membantu memberi inspirasi kepada generasi baharu mengenai pakar penjagaan pendengaran.

Justeru, Pusat Mini 20dB itu mencerminkan misi syarikat untuk menggabungkan teknologi pendengaran bertaraf dunia dengan penjagaan penuh keikhlasan.

Menerusi rangkaian klinik di seluruh Malaysia dan Singapura, 20dB Hearing menawarkan penyelesaian pendengaran penilaian, peranti canggih serta sokongan

pemulihan bagi membantu individu menikmati kehidupan lebih bermakna melalui pendengaran lebih baik.

Dalam pada itu, Dr Sarah berkata, masalah pendengaran dalam kalangan kanak-kanak sering tidak didiagnosis lebih awal.

"Pendengaran seperti WiFi, jika terganggu maklumat tidak sampai ke otak. Jika masalah berlaku dalam lima tahun pertama, ia boleh menjejaskan pendidikan, komunikasi dan potensi jangka panjang," katanya.





## YOUR OPINION

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MAIL: The Editor, Menara Star, 15, Jalan  
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Letters must carry the sender's full name,  
address and telephone number.  
A pseudonym may be included.

IN recent years, we have seen important changes in Malaysia in relation to mental health, such as the effort to decriminalise suicide attempts and nationwide campaigns to reduce stigma. However, one critical issue remains unaddressed: insurance coverage.

While Malaysians who can afford it are well covered for chronic physical illnesses like diabetes, heart disease, and cancer, mental health conditions are often excluded or only minimally included in health insurance policies.

Only a few insurers provide protection for conditions like depression, schizophrenia, and bipolar disorder, and they often have low annual caps. Most still do not include full benefits such as counselling, outpatient therapy, or wider mental health support.

This outdated view overlooks what the World Health Organisation (WHO) has repeatedly said: there is no health without mental health.

Families dealing with depression, anxiety, or bipolar disorder frequently end up paying out-of-pocket for treatment, counselling, and medication. For many, these costs are too high, leaving conditions untreated – and untreated conditions can worsen, leading to lost productivity, family breakdowns, or, in tragic cases, preventable deaths.

World Mental Health Day is on Oct 10, and it should mark the moment Malaysia takes the important step of requiring all health insurance policies to cover mental health conditions equally with physical illnesses. Such a change would not just ease the financial burden on individuals and families but it would also send a clear message that mental

# Include mental healthcare in all insurance plans



Photo: 123rf

health deserves equal dignity and attention as physical health.

Other countries have shown that this can work. Singapore's national insurance scheme, MediShield Life, began offering mental health coverage in 2021, and it includes psychiatric inpatient care as part of basic health protection. Australia's Medicare system allows patients to access up to 10 subsidised therapy sessions a year under a mental health treatment plan. The

United Kingdom's National Health Service guarantees free access to mental health services, treating psychological illnesses on par with physical ones.

The case for mandatory insurance coverage is not just ethical, it is also economic. The WHO estimates that depression and anxiety cost the global economy US\$1 trillion (RM4.2 trillion) each year in lost productivity. In Malaysia, mental health issues impact one in three people at some point in

their lives. If left untreated due to financial barriers, these conditions diminish workforce participation, weaken academic performance, and destabilise communities. Providing insurance coverage is therefore a smart investment in national resilience, not a financial burden.

Linking mental health coverage to insurance reform aligns with the government's broader agenda. The Madani Medical Scheme is modernising clinics, electronic

medical records are being implemented, and the Health White Paper sets the stage for long-term change for our healthcare system. Making mental health coverage mandatory would ensure consistency, making sure that progress is not dependent on political cycles or annual budget changes. It would also show that Malaysia is committed to integrating equity and compassion into the 13th Malaysia Plan (2026-2030).

As we mark World Mental Health Day this year, we should recognise that the next critical step in addressing mental health issues in Malaysia is to ensure access to care through insurance. No family should face a choice between financial security and mental wellbeing. No patient should feel that their mental illness is less important than a physical illness.

Making mental health coverage mandatory is not just a minor policy adjustment. It is a statement that Malaysia cares about the overall wellbeing of its people, that we are ready to invest in resilience, and that mental health is health, without question.

**DR AFRIZA HANI  
MOHD SINON**  
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