



**THE UNIVERSITY OF MELBOURNE
MD STUDENT CONFERENCE
PUZZLES**

Act IV, Scene 1 Jet Set

(Note: the story is not part of the puzzle)

“So influenza is an enveloped virus with a genome made up of single-stranded, segmented RNA. The viral envelope is made up of a lipid bilayer that contains three of the viral transmembrane proteins, haemagglutinin, neuraminidase, and matrix 2. The first step of the influenza virus infection—”

Jared rolled over in his slumber, inadvertently striking the “volume up” button of his laptop keyboard.

“—INVOLVES BINDING OF HAEMAGGLUTININ TO SIALIC ACID RESIDUES—”

“Huh? What now?”

Jared awoke to the soft glow of his incandescent desk lamp. Startled, and almost out of protective instinct, he jabbed the spacebar of his keyboard to stop the video. It was four in the morning. Winter winds whipped against the wonky window frame of his bedroom. Elsewhere in the house, floorboards creaked. But, otherwise, there was only the sacred sound of silence. No-one awake. No-one awakened.

“Phew, that was a close one,” mumbled Jared.

Jared surveyed his surroundings. In front of him, a word document with his virology notes had been littered with an assortment of strange consonants and vowels. Dismayed, Jared rubbed his face, and felt the contours of those same consonants and vowels imprinted upon his right cheek.

A hefty tome of a textbook, Murray’s Medical Microbiology, sat open with the spine partially cracked from bearing the weight of Jared’s head. A small pool of saliva had stained the opening page of Chapter 40.

“Yuck.” Jared gently dabbed at his drool with the right sleeve of his medical school hoodie, but it was clear that the damage had long been done.

Deciding to ignore that unfortunate consequence of his fatigue, Jared reviewed the bits and pieces of scrap paper that had been strewn all over his desk. Ink of all colours, black and blue, thick and thin, fresh and faded, had graced the sheets of A4 scrap, painting in chicken scratchings the many midnight ramblings of a manic madman.

Jared slumped backwards into his executive-looking, faux-leather office chair, wallowing in the silence of resignation. He had been whittling away at this problem for so long and yet his progress had been so little. It was disheartening.

Finding this disquiet within and without himself almost too unbearable, Jared reached for the remote of his television, switching to some 24-hour news channel for a bit of background noise and visual chewing gum to fill the space and time.

“The Influenza Type A viral pandemic has been identified in cases across all continents, bar Antarctica. This virus, which takes a specific liking to medical students, may seek to threaten the future of the healthcare system as we know it.”

The words of the news anchor faded into the background.

Back to work, Jared thought.

And work he did.

Jared buried himself in his study of the pharmacology of common antiviral agents. Amantadine. Tenofovir. Zidovudine. Oseltamivir. Acyclovir. Remdesivir. In his delirious state, these medications no longer held any meaning to Jared, and soon became a mish-mash of undesirable Scrabble letters, dancing around on the page.

“The virus has been known to be transmitted via the social media app TikTok, and it has been advised that those working in the healthcare sector should refrain from their continued usage of this app.” continued the TV.

Jared closed his eyes and shook his head to shake away his fever dream. When he opened his eyes once more, the letters had stabilised on the page. And what was that other drug that he was reading about just before? Jared performed a brief web search to see if it could prompt any thoughts or memories.

“The viral illness is known to cause feelings of stress, guilt, and/or inadequacy in its victims. There has also been early evidence to suggest that it can lead to personality changes, causing affected individuals to become more impatient, more competitive, and more achievement-oriented.” obsessed the TV.

Wait, what was it that he was reading about on the topic of antiviral medications? Jared reviewed the journal articles that the search engine had spat out not too long ago.

“Neuropsychiatric effects of antiviral drugs are a common occurrence... antivirals may affect the central nervous system... the effective role of serotonin in the activation of T cells... SSRIs could play important roles in possible immunoregulatory and anti-inflammatory mechanisms...” muttered Jared. “Hmmm...”

Jared inspected one of the scrap pieces of paper that was laid out in front of him.

“Hey wait a minute! So if I... and then...”

Jared rotated the page to make sense of his nonsensical notes. Hurriedly, he found yet another pen to devote to the cause of illegibly annotating his already illegible handwriting.

And then, with the brilliant haste of a roaring thunderclap, something clicked into place in Jared’s brain and a penny finally dropped. And, in an Archimedean fit of jubilation, he screamed “Eureka!” aloud.

Something or someone in the house stirred. Floorboards creaked once more. Except this time it wasn’t the wind. Jared knew that he had disrupted the sacrosanct sleep cycle of his mother, and would face her wrath in the morning.

“Oops.”

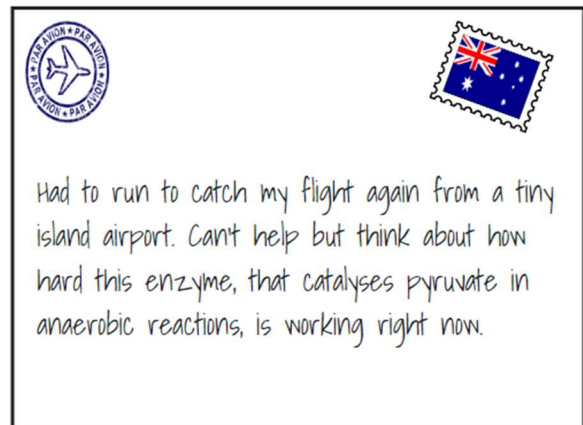
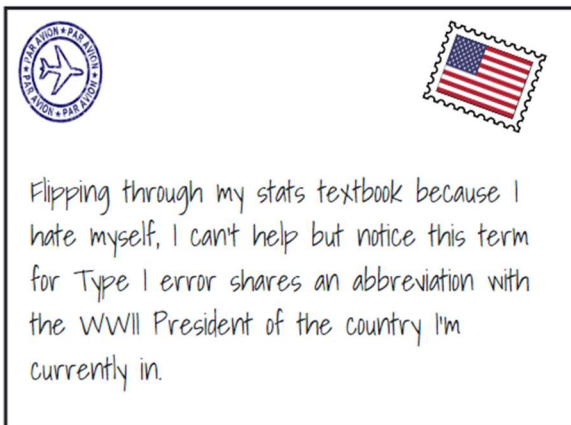
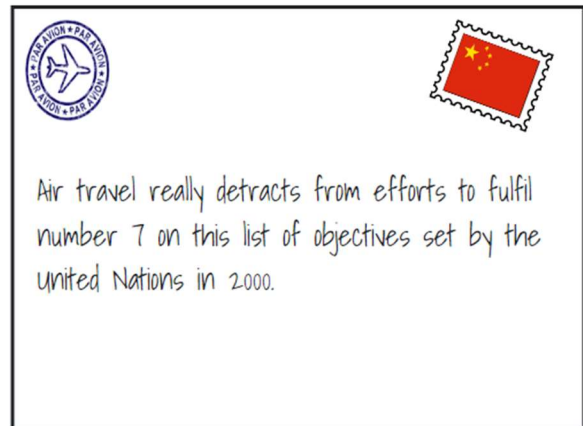
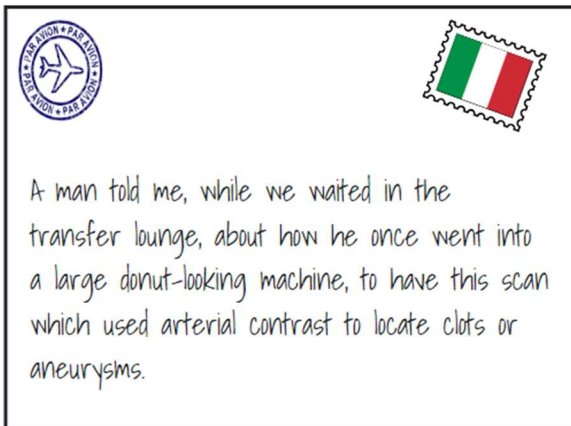
Jet Set

You've just returned from a jetsetting world tour, exhausted but exhilarated. You had meticulously documented your travels on postcards as keepsakes.

However, you realise to your dismay that a rival medical student had rummaged through your postcards, damaging 5 of them in the process!

You can't quite remember what's so special about those damaged cards, but you recall they were pretty important locations. You wonder what they had in common to warrant such sabotage! You sigh in frustration.

Intact postcards





Had to run to make this flight! As I sat down I could really feel pulsations in this terminal branch of my external carotid.



Here is my last stop before going home. Thankfully I remember the corrected name of the disease I most recently studied, just in time for the CAT!



I just saw a house mouse scurry across the terminal! I hope it doesn't carry any Arenavirus that could give me this infection!



I'm glad *Dermacentor andersoni* is not endemic in Central America, I don't want to contract this disease that it transmits!



Opened the window of the plane and was hit by sunlight. I hope the diameters of my eye apertures appropriately changed as a result of this mechanism.



Ouch! My diverticulitis must be playing up again, because I'm feeling pain in this specific region of my abdomen, if you divide my abdomen into nine zones.



So excited to start my world tour from here! But the airport's so small, I had nothing to do except revise the pharmacological approach to myocardial infarcts, of which this drug is a vasodilator.



Stumped on a crossword clue from the newspaper I got from the terminal newagent: "This protein transport iron to cells, and can be found in milk"



Thankfully the terminal had hand sanny dotted around. Don't wanna bring home any MRSA, VRE, ESBLs etc, which have this property where many antimicrobials don't work.



The parents in front of me at Security were carrying a baby with this micrognathia, glossoptosis and airway obstruction.



There was a crying baby the entire flight! Just glad for them that they didn't have this paediatric disease where abdominal organs would push into the chest cavity because of a defect.



Today I read about this childhood condition that causes joint pains, but I think the name I recorded in my Anki is outdated... unfortunately the helipad had no WiFi for me to check.



Trying to memorise all subtypes of this disease, of which "Hand-Schüller-Christian" is one. Gosh I hate eponymous naming. You'd think they were trying to name an airport!



Visiting an area of the tropics, I am thankful for this germline-encoded host sensing molecule, which detect typical pathogens I might encounter.



Walking off the plane made me appreciate these proprioceptors located at my musculotendinous junctions, without which I can't walk!

Damaged postcards

