Where does virulence evolve?
Just about everywhere we look, we see pathogens evolving towards attenuation. Pathogens evolve to be less deadly because the individuals that quickly kill their hosts don't get far, and don't spread as well as the individuals that barely sicken their hosts. So why then does virulence evolve? Why do some pathogens evolve "backwards" towards virulence and deadliness?

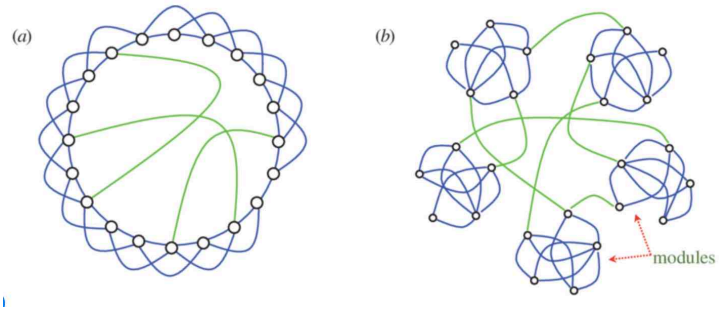
The simple answer is that the virulence is not for the pathogen's host, but for the host's predators. In other words, virulence evolves as a sort of infectious venom that protects animals from predators. Here in this protective role, the more deadly the pathogen is, the more it is rewarded by nature. And this is why some pathogens evolve "backwards" towards virulence and deadliness.

The flight-based, disease network of bats
70% of the world's 1,240 bat species are insectivores. Every night, these bats fly out over a wide area and eat insects that often have fresh mammal blood on them. Then every day, the bats come home to a sleeping-huddle (the opposite of social distancing) and share the diseases they picked up.

Some days later, most bats from the colony go out infected, across the bat territory. Then some of the frail bats get grabbed and eaten while on the ground. Then perhaps their blood infects, or they bite back, or hiss infectious mist, and complete an infection cycle. Then these bats become an inter-species disease vector for mammalian blood and airway diseases.

So one bat eats one bloody corpse insect—then some days later, most of the bats in the huddle go out infected across the bat colony's territory. And this can be an area over 100-km in radius — because this is how far bats sometimes range. It is a huge area of up to 31,400 sq. km.

But it doesn't stop there, because bat territories overlap. So on top of rapidly dispersing diseases in their own territory, bats also help diseases to hop between territories. And this occurs at a speed that approaches 200-km divided by the disease's incubation period. So, huddling bats create a flight-based network for greatly accelerating the spread of mammalian blood and respiratory diseases.



Here above are two illustrations of "leap networks", the blue lines, the "local links" schematically represents the way diseases would spread without bats. The green lines, the "leap links" schematically represent how flying bats help diseases rapidly leap ahead to new areas. Bats are notably unique in this leap network role for mammalian diseases.

NIH list of over 200 diseases carried by bats
On this list we find: Hantavirus, MERS, SARS, COVID Marburg, Ebola, West Nile, Yellow fever, Hepatitis B and C, Herpesvirus, Cytomegalovirus, Influenza virus A, Papillomavirus, Rubulavirus, Mumps, Pneumovirus, Rabies, chikungunya virus, and all 4 coronavirus common cold viruses. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4371215/

Discover magazine article
"Bats are the source of more dangerous viruses than any other mammal. …Ebola, SARS, Marburg, Nipah and more have been traced to the world's only mammal capable of sustained flight… bats harbor a significantly higher proportion of zoonotic viruses than all other mammalian orders" https://www.discovermagazine.com/health/why-bats-are-breeding-grounds-for-deadly-diseases-like-ebola-and-sars

NIH article on bat diseases
"a daily cycle that elevates metabolism and body temperature analogous to the febrile [fever] response in other mammals."
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4012789/

Bat body temperature in flight gets up to 108°F (42.1°C)
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4012789/table/T1/?report=objectonly

"During flight, bats rev up their metabolic rate 15 times to 16 times higher than non-flying bats. That raises their body temperature to between 100 degrees and nearly 106 degrees Fahrenheit, the equivalent of a pretty high fever in humans."
www.nbcnews.com/health/health-news/new-clue-found-why-bats-spread-viruses-dont-get-sick-n81321

Bats run a fever of 106°F daily
The animals that operate the mammalian disease spreading network run fevers of 106°F (41.1°C) daily. And these sometimes get up to 108°F (42.2°C).

Fast bat metabolisms
Due to the energy needs of flight, bat metabolisms are already running fast. So it appears that bats are able to "outrun" most pathogens. These don't affect the high metabolism bats as much as slower metabolism animals that don't fly. So it appears that bats are mostly immune to the diseases that kill the other mammals.

Why do bats huddle?
It is widely thought that bats huddle to conserve heat. But then why do bats huddle in so many tropical places? Why is it normal for bats to huddle in shallow equatorial caves if they huddle to conserve heat?

Perhaps bats huddle because it helps them share protective diseases — protective for the bats and harmful for many other mammals.

And because these diseases were beneficial to the bats, nature favored the bats that huddled and clustered close to better share their protective diseases. This way, when one bat discovered and brought back a new pathogen weapon, all the bats in that cave did better.

Why bats are vector #1 for mammalian diseases
Canine packs contact lots of animal blood. But how many individuals are there in a wolf pack compared with a cave bat colony of 20-million bats like in the Bracken Cave? And wolf packs only roam about 30km a day. So the bat colony covers about 1,000 times the area of the wolf pack. And there may be

hundreds of rats in a colony, but the territory is only about 100-meters in radius. And while birds do cover a large territory, and some species nest together, they have substantially different metabolisms. Therefore birds don't work well as a vector between mammals.

So for zoonotic diseases jumping between and infecting mammals: Bats (the only flying mammals) seem to be responsible for nearly all of it. And particularly, the bats that huddle closely in great numbers — because these have the greatest network effect in spreading and evolving diseases.

The giraffe's neck — the Cheetah's speed
Many animals have a special adaptations. With bats, part of their's seems to be evolving and spreading protective diseases. The frail bats might not be viable without their protective diseases.

Rabies is somebody's venom
That Rabies both kills and spread via bites strongly suggests that it is some animal's venom. Which species is that? Which mammal species benefits most from rabies? Which animal can live longest with rabies?

Rabies: It's got what bats need
Always deadly Rabies is exactly the sort of pathogenic "venom" that fragile bats need for protection from the much stronger animals that might grab them on the ground. In other words, the diseases that best protect bats from predators are the best venom for bats. So evolution favors deadly diseases for bat predators. And this is certainly part of why Rabies is always deadly.

Metcalf's law: Bigger networks evolve exponentially faster
The giant cave-bat networks of up to 20-million bats rival mankind as the largest daily-contact mammalian networks. But these are evolving in "reverse", and evolving diseases (like Rabies) towards virulence. And aside from humans, there are simply no other mammalian networks anywhere near the scale of a bat cave. Therefore huddling bats appear to be the main source of counter-attenuation and virulence and deadlyness in mammalian diseases. This in addition to being the main interspecies vector for mammalian diseases.

Bats giving diseases back
1/ Which bat species will never bite another animal even when it is dying of hunger?
2/ What if the bat is attacked, which species never bit back?
3/ What if the bat has rabies and is acting like a mad dog? Which species never bite?
4/ What happens to animals that eat a rabid bat? What happens to the various animals that the bat sneezes next to, due to its lingering coronavirus "cold"?

Cats, raccoons, foxes, and skunks
These are the four animals (in the US) most likely to be rabid. All are nocturnal and might grab a bat.

Stressed vampire bats bite each other
Here is a study where a reduction in food caused a population of vampire bats to all bite each other. In fact, they bit each other so many times that they lost much of the hair from their heads and shoulders. The inference is that when vampire bats get hungry, they stop merely carrying blood infections themselves. Instead, they seem to all bite each other and pool whatever infections have arisen in their group, from each individual's contacts and stress response. Notably, they bite each other repeatedly, assuring that the diseases are spread around well. Is this behavior unique to vampire bats, or can we induce it in other bat species under extreme food stress? https://academic.oup.com/jmammal/article-abstract/40/3/439/849328?redirectedFrom=fulltext

Incriminating behavior
The bat species that bite each other repeatedly under stress and pool diseases certainly seem to be using germ warfare against all the other mammals.

Flugacious flues
The flu is "flugacious" or fugacious=fleeting, sometimes returning once in decades. So the inference is that we have probably not found all the diseases carried by bats. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4371215/

The pathogens keep trying all their old keys
And the bats are flying them around
All pathogens are constantly trying their keys on all the doors of all the animals they contact. The more doors they knock on, the more likely it is that they eventually evolve a new key that gets them in.

The pathogens have their own agenda
After enough inter-species introductions thanks to their bat vectors, the pathogens eventually evolve to spread among a new species. Then once they start spreading, they start re-attenuating to spread better in their new host species. So pathogens seem to evolve one way (towards virulence) among bats, and then they evolve the other way (away from virulence and towards attenuation) among most other "normal" hosts.

The counter-attenuation, re-attenuation cycle
The diseases become more virulent in bats and they become less virulent and more attenuated when they are out among the other mammals. This repeated cycle might be responsible for most evolution in mammalian pathogens.

Bats, famine and drought
In droughts, it isn't just the output of human crops and livestock that suffers. In drought years, there is also less overall plant, animal, and insect life. So the insect and blood eating bats tend to be hungrier. Then their infections tend to re-surface due to the hunger stress. Also, bats crazed with hunger are probably more fearless and irregular about what they will try to eat/bite. And with many animals gone, the remaining animals get bitten more by the bats, which are also more virulent. And all this is on top of the reduced immune response in malnourished animals/people.

Bat, pangolin, civet cat, or what?
If a disease exists in several species including bats, the bats are probably the main interspecies vector — the hub vector. Bats after all, are quite adapted for that role due their high metabolisms, huddling and nightly contact with bloody insects.

How to stop any insect-borne epidemic
In Asia, people have consumed Chrysanthemum for over 3,500-years, so it appears to be relatively safe. Chrysanthemum contains natural pyrethroids, a powerful insect neurotoxin. And because insects have different organs and metabolisms, what is "nerve gas" to insects can be relatively harmless to vertebrates.

So if people take a small and mostly harmless amount of Chrysanthemum flower, their blood can be made deadly to the insects biting them. And if all the animals of a community takes this natural insecticide, it will stop the mosquito epidemic in one mosquito life cycle (4-5 weeks).

Today millions of people inject micro-doses of deadly botulism toxin (botox) for vanity. Perhaps our infectious disease arsenal should also include micro-doses of insect poison to stop raging insect-borne epidemics.

The pesticides are much less deadly than the insect diseases
Insect-born diseases kill over on-million people a year. On the other hand, we never hear of any agricultural-worker pesticide exposure syndrome. Surely the people applying the pesticides have thousands of times higher exposure. If pesticides are so dangerous, why don't we see a syndrome among agricultural workers? Clearly the insect diseases are a much greater health risk than the pesticides.

Insecticide prophylaxis risk
What difference does it make how we stop malaria from killing 400,000 people a year? And if we can accept a certain negative outcome ratio for a COVID vaccine, then surely we can accept a similar negative outcome ratio for taking micro-doses of insecticide.

Get blood — mate — find water — lay eggs
Where mosquitos have access to both blood and water, they become intolerable. Denying them water to lay their eggs completely halts their reproduction in many dryer places. However, there are still wetter places where this will not work. In these places, we can use chrysanthemum extract or a synthetic pyrethroid to interfere with the mosquito's ability to survive its meals and reproduce.

Why are insect-borne epidemics getting worse?
- **Why are cases increasing?**
- **Why are territories expanding?**

Aside from global warming, nobody has a good reason for why this is happening. Here's a reason: It is due to the natural food movement, and how now farmers are:
1/ Not using insecticides.
2/ Using insecticides that break down quickly, before people can eat them.
3/ Using less insecticide because it is the "right" thing to do.
So today we all have lower levels of insecticide residue in our blood than in recent decades. Now more of the insects biting us are living to lay more infected eggs.

Pesticide residue as protector
Improved drainage & sewers get most of the credit for totally protecting the rich nations from insect-born diseases. But even the famously clean and organized city-state of Singapore — a mere 31 x 17 miles in size — has mosquitos nearly everywhere.

So how do we get total disease protection from partial mosquito control? Maybe we don't. Maybe it is not improved sanitation that has protected the modern world from mosquito disease. Maybe it is the pesticide residue in our blood that is protecting us.

Maybe the simplest thing we can do to reduce malaria deaths is to use pesticides that don't break down so fast. Thus everyone has pesticides in their blood. Either that, or people take measured milligram doses of pesticides by pill if everyone will take them.

An experiment
Get 400 volunteers. For a weeks, expose them as follows:
1/ Give 100 of them fresh vegetables that were normally sprayed in the fields with the old pesticides.
2/ Give another 100 of them fresh vegetables that were normally sprayed in the fields with new pesticides.
3/ Give 100 of them a cup of chrysanthemum tea daily.
4/ Give 100 of them nothing as control group.
At the end of 3, 7, and 14-days, expose all 100 to three hungry mosquitoes each. Take the visibly full mosquitoes and house them in their own individual jars, with water for laying eggs. Which mosquitos die before they can lay viable eggs? How much chrysanthemum and other pesticides are needed to kill 100% of the mosquitoes?

Bug poison as anti-epidemic treatement
If we can harmlessly keep a tiny residue amount of insecticide in our blood for some months, and the alternative is to suffer a multi-year insect-vectored plague, why not take a little relatively harmless bug poison? At least we should have the tool in our arsenal for when people are dying in great numbers from one of the many insect borne diseases.

Dosage
It is the lowest dose where 100% the mosquitos biting people die. Any less than this and we lose protection from blood sucking insects. We also breed insecticide resistance. Any more than this and we suffer unnecessary chemical exposure.

Pesticides as drugs
People take lots of toxic chemicals as drugs, for example: chemotherapy drugs for cancer, and toxic antibiotics for MRSA. We take these strong and sometimes deadly chemicals because experience shows that they are less harmful than the thing killing us. The same mental model should be used for insecticides — especially the insecticides that protect us from the diseases of blood sucking insects that kill over 400,000 people every year.

Many people think: "The less insecticide the better". Yet it is worth repeating, there is no widespread syndrome associated with contact with pesticide residue. This in sharp contrast to the great and well documented harm that insect borne pathogens bring us, for example: Malaria, Dengue, Lyme, Zika, Bubonic plague.

The mosquitos that die after biting people
It is simple to test for toxicity to blood eating insects. All you need are people willing to get bitten:
1/ Are there people that kill most of the mosquitos biting them and others that do not kill them?

2/ What percent of the people kill the mosquitoes biting them in the various parts of the world? Why is this happening? What pesticide residues are causing this.

Ancient Greek chrys·anthemum = golden·flower

Pesticides in wild animals
Is it such a bad thing that we expose the world's animals to trace amounts of these relatively harmless chemicals that help prevent illness from the blood sucking insects that so often afflict them? Large numbers of grazing animals are already eating chrysanthemum flowers. What is the harm if we feed them each a handful of harvested flowers to kill the mosquitos biting them?

The animals around us
We might also put the Chrysanthemum or another less harmful insecticide in "summer" pet food, deer corn, squirrel bait, and bird seed. We might also have it in watering troughs near our communities, so wild animals consume it. This will reduce mosquitoes, ticks, fleas, and lice. Near our cities, we might also drone-disperse fresh "wet" super-aromatic animal pellets that most animals find irresistibly delicious and can smell from some distance away. These have some Chrysanthemum, or maybe some other pesticides and anti-parasite drugs. Thus all the animals that eat these kill all the fleas, ticks and mosquitos that bite them. We imagine a ring of treated animals (wild and domesticated) around each community. Thus the community can substantially keep new mosquitoes out with this ring of animals protecting it.

Blood-insect energy efficiency
What happens to tick populations when 4 out of 5 ticks die before laying eggs due to insecticide in the blood they are consuming? Certainly cutting reproductive efficiency by 80% will cause ticks to die out entirely in many areas.

Chrysanthemum is a fruit
The flower is essentially a drug fruit like marijuana, coffee, and opium. And like with these other drug plants, the animal-luring-fruit is not sweet and bio-energy expensive for the plant to produce. Instead, the plant offers milligrams of an energy "cheap" drug to benefit the creatures that disperse the plant's seeds. Also, Chrysanthemum may have other valuable drugs in the background, like how Marijuana also has THC and CBD.

The salivary glands of blood insects
Malaria migrates to the salivary glands of mosquitoes.
We should look hard for other nasty pathogens here, in the salivary glands of the various blood sucking creatures.

Where to look for undiscovered plant drugs
1/ With marijuana, we see how evolution has caused a plants to evolve numerous animal drugs: THC, CBD and CBN among others.
2/ With tobacco, we see largely the same thing, although the tobacco family of drugs mostly seem to be poisons that have all adapted to addict and then kill tobacco symbiots for their fertilizer value.
3/ The same evolutionary pressures and paths that cause a plant to evolve one drug often cause the evolution of other similar drugs — as well as perhaps opposite or cancelling drugs.
4/ The best place to look for new drugs may not be deep in the Amazon jungle, but deep in the genomes of plants that already produce other drugs.
5/ There might be a good opioid-addiction drug in the poppy genome, as a sort of cancelling drug to the main opioid drug of the poppy.

Ancient Greek chrys·anthemum = golden·flower

Pyrethroid corn
Given the number of carcinogens (malignant drugs) that have evolved in tobacco, it is hard to believe that anyone would be so dumb as to use ANY part of the tobacco genome in food plants. Yet it was widely done. What about the Chrysanthemum genome? That appears to be both more effective against insects and less toxic to mammals. What if we developed corn that had very low levels of pyrethroids in its leaves and husks, and perhaps none its seeds? How do the bugs get in to the seeds?

It works on all insect born disease
Ingesting small amounts of insecticide works on all insect-borne diseases like Malaria, Yellow Fever, Dengue, Zika, Bubonic Plague, Lyme, etc.

If Malarial people take chrysanthemum…
It kills all the mosquitoes that bite them and then nobody else gets Malaria from them.

Is Chrysanthemum safe?
Here we have a plant that has this symbiotic trick for the animals that eat it. It knocks down the herd following blood sucking bugs when the herds eat it. Then these herds prosper and the Chrysanthemum develops herds of seed dispersing symbiots to spread its seeds.

Certainly Chrysanthemum started out being safer than unchecked outdoor bugs in a marshy summer. But subsequently it should have evolved to be both deadlier to insects and safer to the plant's mammal symbiots. And especially the latter. Chrysanthemum has been optimized and re-optimized for countless migratory mammal species over many millions of years. So it would not be surprising if natural Chrysanthemum had one of the greatest differences between insect toxicity and mammal harmlessness of all the 1,000+ pyrethroids.

Lyme disease insecticide prophylaxis
Lyme disease can't burden its tiny baby tick host very much, so it exists in utterly tiny quantities in the tick's gut. Then it takes some days for the Lyme disease to grow a load in the tick's gut, and to migrate to the tick's salivary glands. If the new host's blood is poisonous to the tick, then it should be less likely that there will be Lyme disease transmission. What about the other tick-born diseases?

Pathogens that surf species.
Infected host populations do die out, so pathogens that can move between species have a big advantage.

Inter-species infections = the new world

A pathogen's survival imperative is to spread and infect as many individuals as possible. Every time a new species is infected, it is a hugely important event for the pathogen, an event akin to the human discovery of new continents.

Species surfing pathogens
It seems that there are pathogens that specialize in being versatile and being able to jump from one species to another. That is their magic trick, and that is what has made them successful. Also, it would appear that most of these diseases (when mammalian) are heavily dependent on huddling bats to get between species.

Diversification and why pathogens kill
In general, pathogens don't spread as well when they kill their hosts. A host walking around normally spreads/disperses the pathogen much better than a stationary dead animal. However, a bit of a diversified strategy might also sometimes be beneficial in small amounts. This is apparently why many diseases kill a sliver fraction of the individuals they infect. If say 1% of infections die and are consumed by carnivores, scavengers, and then insectivores eating blood-filled corpse-insects — Then these blood eating mammals will frequently carry the pathogen off to a fresh new species to infect. So pathogens do often benefit greatly from killing a sliver fraction of their host species.

Why zoonotic diseases kill
When pathogens kill, it is not normally to help the pathogen spread among the same species. Attenuation is normally how a pathogen spreads among the same species. Pathogens kill to spread to other species — mostly via the carnivores, scavengers, and insectivores that consume the blood of the dead host. In other words, Occasionally killing their hosts tends to lead to the zoonotic (zoo•nautical) jumps to metaphorical "new continents".

Recessive genes
The genomes of pathogens (like every other living thing) are always trying out their ancient and once useful tricks that have become recessive and occasionally expressed. So when pathogens jump to a new species, or infect a new population — over time they tend to try out all the old and once successful traits that have evolved to become occasionally expressed recessive variations. And most pathogens have a whole basket of these recessive traits to try out occasionally… because occasionally expressing these golden oldies in new combinations tends to lead to success in a new evolutionary niche much more than random mutation.

One old favorite trick of pathogens is to kill a few individuals in one of the many old and proven ways that have proven to be occasionally beneficial to the survival of the pathogen. And if this killing works better than not killing, the pathogen individuals with the killing trait become more of the species, the pathogen's species.

Symbiots vs. parasites
When the pathogen graduates from parasite to symbiot, it can make its host produce vastly more copies of itself. In fact, the pathogen can turn its host-now-symbiot into a pathogen shedding and spreading/dispersing factory in direct proportion to the benefit that the pathogen gives to its host and symbiot. And this might boost reproductive output for the pathogen by several orders of magnitude. So achieving symbiosis is another sort of a new continent sort of thing for parasites.

Counter-attenuated predator diseases
Komodo dragons (the big lizards of Indonesia) have a pathogen in their saliva that is always fatal if it enters the blood. This apparently helps the big slow low-metabolism reptile to prey on fast moving mammals.

Now what if a pathogen killed it's true host's predators (instead of its prey) and thus helped its true host to survive? Wouldn't this pathogen tend to evolve towards being always fatal?

So for secondary hosts that are the predators, or competitors of a primary host, the natural pressure towards attenuation can work backwards. And here is the main reason why nature evolves diseases that kill. This sort of relationship favors strains that are super-virulent to the other species — when this helps the pathogen's true host to survive. So Bubonic plague was selected for virulence because it helped its true host (the marmots) to survive predators. And the same with Rabies, Ebola, etc.

CAP diseases = Counter-attenuated predator diseases

Always fatal blood diseases
Rabies, Ebola, Hepatitis, HIV, and TB all eventually kill their hosts, and all attenuation only delays death.

Komodo dragon saliva pathogen
Maybe we should survey the salivary glands of the entire animal kingdom for pathogens. I bet we find salivary gland pathogen DNA in many forms of cancer.

Our salivary "symbiots"
According to Scientific American, Fuso•bacterium nucleatum, lives "harmlessly" in the gums of humans until sometimes it seems to have a role in helping some cancers to become metastatic. So this pathogen does two things that make it look like an attenuated CAP disease: A/ it lives in the mouth, and B/ it kills.

Predator diseases migrate to the biting teeth
Like with Rabies, many predator diseases tend to "migrate" to the salivary glands, mouth, and periodontal area. Basically they have evolved to go where they are most likely to be dispersed properly.

Where to find CAP disease
Many seem to "migrate" to the salivary glands where they can infect new hosts with minimal burden to their current host.

Migration to the salivary glands
More accurately, the pathogen goes everywhere and the immune system kills it... everywhere except the one place it helps the host to survive. So the bat lines that kept the protective pathogen infection in their mouths tended to thrive more than those that did not.

Rabies is somebody's symbiot
That Rabies both kills and spread via bites strongly suggests that it is some animal's venom. Which species is that? Which mammal species benefits most from rabies?

A good compass
Which bats are most immune to rabies? Which bats are most immune to the other various diseases that plague people? Collect some of each species. Infect a couple. Lock them up for a time. What percent of the other bats get infected after X days? This is such an easy compass, and it gives hard numbers and a topography that points right to the most problematic species.

Rabies madness and biting
Rabies spread via saliva and blood. It also apparently spreads best when the host animal is walking around infected and "mad" for a while. First this is with no symptom, letting the animal do as usual for some time. Then after a while, rabies typically causes the host animal to change its behavior and go "mad" and act with bizarre aggressive, or fear. This way, the host animal bites lots of different animals in many species.

All these infected animals eventually die. In cats, this can be up to a year — a year of biting mice that often get away. Then the host become food for predators, scavengers, and corpse insectivores. And any one of these animals might bring the disease back to its kind and infect many of them. So there are clearly some diseases like Rabies & Ebola that don't attenuate like "normal" because this impairs how well they spread as predator/ corpse/ blood diseases.

Why so many diseases hardly ever kill
Dogs can follow individual people and prey animals by the faint residual smell they leave in the surroundings. Dogs can also sniff out particular diseases. They can also discern the healthy from the sick, and the sick from the dying. So dogs can probably also remember the smell of a pathogen on an animal that died of an infection. And after exposure to this particular smell, the dogs might carefully avoid this smell in the future. And doubtless many animals are a bit like this. This seems to be why so many diseases hardly ever kill. If many animals come across dead bodies, then they start to avoid living animals that smell anything like that way. Then the pathogen can't spread.

Fruit bats also carry deadly diseases
1/ Marburg virus has been isolated in fruit bats.
2/ Nipah virus is spread when fruit bats lick and urinate on date palm sap. Humans become infected when they consume the raw infected date palm sap. Nipah kills 70% of its victims. So here with Nipah virus is an example of a CAP disease carried by fruit bats.

Does bird flue come from bats?
Bird flue is what bats need, it eliminates bat competitors and predators.

Why kill the old pt. 1?
Maybe it is not simply that the old are weaker and die easier. Maybe it is also that the old have more varied smells. Maybe pathogens have been conditioned by their environment to kill the old because it is harder to discern the smell of the pathogen. Thus the pathogen can kill more without causing animals to avoid its smell.

Why kill the old pt. 2?
1/ Old animals have already reproduced, and their death does not matter as much from the standpoint of a parasite not-burdening its hosts.
2/ Killing the old animals may be symbiotic, especially if they are old, or male. This appears to be part of why males die 18.6% younger than females in many mammals, and 8% younger in humans.

Fusobacterium nucleatum and cancer
This "harmless" mouth bacteria sometimes becomes part of tumor cells in the colon. Perhaps when it kills in this way, other animals can't fix on the infection's smell. In fact, the prey animal probably smells like it died of cancer and is thus perfectly safe to eat. So the predator/scavenger eats and becomes infected, instead of avoiding the infected meal.

Pathogens known to cause cancer
1/ HIV
2/ Human Papilloma virus
3/ Helicobacter pylori
4/ Hepatitis B
5/ Hepatitis C
6/ HTLV-1 (Human T-lymphotropic virus-1)
7/ Human Herpes virus-8
8/ Merkel cell Polyoma virus
9/ Simian virus-40
10/ Chlamydia Trachomatis
11/ Epstein Bar Virus.
12/ Fusobacterium nucleatum
Here we see 12 examples of CAP diseases that have attenuated to the point that they cause a fatal type of cancer later in life. And notably, none of these diseases kill by means of a stinky infection. So the prey animal is much more likely to be eaten and the pathogen spread to a new host.

Attenuation vs. counter attenuation
1/ Counter attenuation only occurs in the bodies and evolutionary reality of prey species. Once the disease starts spreading among a new host species that is not a prey animal, normal attenuation takes over.
2/ There are two sorts of reality for CAP diseases. One reality is in the prey species reality, where the disease benefits a bit from killing the predators of its reservoir host. The other reality, is where the disease never wants to kill its hosts in a way that smells like the disease.
3/ This back and forth is where many pathogens evolved to kill late life in a way that smelled like natural causes.

Are viruses nocturnal like bats?
Even indirect sunlight is deadly to micro-organisms. Maybe the bats are nocturnal because their protection diseases are not as contagious in the daylight. Clearly the vapors droplets dry up faster in the day and also the sunlight kills the pathogens inside the water. Maybe flu season is from this. And maybe all crowded covered public places with less than 6-foot distancing should maintain daylight-like levels of UV light as a sanitation measure.

The pathogen-cancer DNA search-engine project
We sequence all the bat viruses, bacteria and fungi for all the bats and then we look for DNA matches in all the various sorts

of cancer, vascular tissue, Alzheimer's brain tissue, etc. Maybe we should also take samples of various sorts of clogged-up arteries and aneurisms from cadavers and look for bat pathogen DNA matches there too.

Cancer: hereditary, toxin, or pathogenic?
The toxin cancers from tobacco and asbestos were easy to spot. And there are probably more. The hereditary cancers are also also easily spotted. We don't seem to have come nearly so far with pathogenic cancers.

How HIV kills by stealth
1/ That HIV kills by cancers, cardio vascular disease and secondary infections are olfactory cloaking devices that allow the disease to kill and not smell like an infection death.
2/ That HIV kills in so many different ways make it is harder to detect by smell.
3/ HIV is a very old and very highly evolved pathogen that has evolved many ways to do the same thing. Why does it need so many ways to kill? So it can't be easily identified by smell.
4/ We should make a graph where all the known diseases are given an increment in a bar graph for all the known ways they kill. The one's that kill in the most ways are probably oldest.

Blood diseases must be stealth killers
So the scavenger is sniffing the dead corpse. Many can tell when animals died of infectious diseases, and it knows to stay away from this smell and not to eat it. So what do the blood diseases do? They kill by stealth, by cancer, or any indirect way they can evolve. So the blood diseases as a class look like they are probably causing many late life problems in humans.

A dog and rat experiment
Take some rats and kill them with an infection that is deadly to dogs:
1/ Do hungry doges eat the infected rats, or can they smell the disease?
2/ If the dogs don't eat the rats, do they avoid eating still living rats afterwards that are infected and smell of the disease that killed the other rats?
3/ Is the dog behavior any different than the dogs encountering still living rats that smell of disease without encountering the dead ones?

Bone marrow and blood cell diseases
1/ That HIV gets into the bone marrow is the pathogen diversifying into the bone eater niche — a 4th class of corpse eating mammal. Bone eaters give valuable longevity to the pathogen's kills. So getting into the marrow is a big thing for these diseases that kill.
2/ Brain and nerve diseases also look like diseases for bone eaters.
3/ The image of hyenas breaking the bones of an infected animal needs to be on the office wall of everyone studying bone marrow and blood diseases as well as nervous system diseases. This reality is probably key to understanding where these disease come from, and what they are doing.
4/ We might find for bone diseases and antibodies in "hyena" saliva, as well as canine saliva. Maybe we should put extra attention into matching canine saliva diseases to cancers.

Emphysema = wearing your lungs out disease
Like every other part of your body, you lung tissues can only re-generate so many times. Emphysema is when a person has caused their lung tissues to regenerate excessively and many of the cell lines have died.

Pathogenic lung cancer
1/ There seem to be pathogens of the respiratory tract that live "outside the body" on its airway surfaces. Some go into hiding and repeatedly pop up. Thus they repeatedly cause inflammation of the lungs, probably where they landed first.
2/ This repeated inflammation causes the cells to age, a process that is inherently carcinogenic.
3/ The pathogens that caused greater aging, to the point of lung cancer manage to kill while hiding their smell. These got eaten more by the predator, scavengers, bone eaters, and insectivores, and these individuals became more of the pathogen species.
4/ The viral cancer process seems similar to that of asbestosis. In both cases we seem to have this foreign irritant causing cells to die quicker and age faster, until they make a mistake in replicating and become a cancer.

Allergy or lingering infection?
Maybe the people who get pneumonia and then develop asthma have not developed an auto-immune problem, but are instead still suffering from the pathogen that caused the pneumonia. Maybe the asthma is the pathogen reactivating in what we call an asthma attack. Maybe some forms of asthma are from lingering infections.

Denatured proteins
For people with food sensitivities, cooking the proteins for a long time denatures them and frequently prevents a reaction.

Hay fever
The pathogens that evolved to wake up when there was lots of pollen in the air might have out-survived the ones that did not: This pollen irritation would help them get in better after all. Also, perhaps we contract the hay fever pathogen by going out when the pathogens that spread on pollen are active. Perhaps the hay fever allergies are from the same hitch-hiking pathogen(s). For all these respiratory allergies, maybe it isn't your body that is reacting. Maybe the pathogen is waking up and getting your body to help with its agenda of spreading. Maybe that is why you sometimes notice the Gerd before you notice the smell of the thing that triggered it.

Selective aging
Why do some sorts of cells age faster in some people? Perhaps it is from pathogen infections killing certain types of cells faster than the others. And this is exactly what we expect from pathogens that want to kill in a whole bunch of different and natural smelling ways.

Many diseases have tended to evolve to target one type of cells or another. And these tend to be the cells they live in and burn up. So we should especially look for pathogen DNA in these faulty tissues. What traces do we find using our pathogen DNA search engine?

Why DNA spirals
Is it because the spiraling makes the DNA less vulnerable to breakage by stretching, like the spiral wire on an old-style telephone receiver cord.

Loss of taste/smell in COVID patients
1/ This gets many host animals eating things they should not eat and dying as a result. And they die in a way that has no smell of COVID. Thus their blood tends to get eaten more by predators, scavengers, and insectivores. Thus the pathogen perhaps makes it into a new species.
2/ This is/was probably deadly to species that are heavily reliant on smell, species like bats and dogs.
3/ Nasal congestion accomplishes the same thing and is a common way pathogens take aways the senses of smell and taste to kill a few host individuals by stealth.

HIV looks like an attenuated CAP disease
HIV is always fatal, and it is most effectively transmitted by the blood. So it looks like it started as a CAP disease, and then evolved into a primate mounting disease like SIV. But it appear to have been symbiotic in how it helped eliminate the non-reproductive males (low-status mounted ape males), so there could be more reproductive females given fixed food inputs.

Here we note that ape mounting behavior make little sense without HIV/SIV, but it make perfect sense with it. The mounting tended to be the eventual kiss of death for the recipients, death by hepatitis and HIV and other gay men's diseases.

Statistics
Let's graph the number of offspring for each male chimpanzee in a troop. Let's also graph the number of times each male was mounted in prior years. The mounted males should not be producing many offspring. And this is the niche that SIV and HIV exploit—getting rid of the non-alpha mounted ape males that didn't produce many children.

Hissing animals
Animals hiss, spit and bark partly because it causes infected "saliva" droplets to go airborne. This helps infect predators with whatever infections the prey animal has — like say a CAP diseases perhaps. Thus hissing individuals survive better and become more and more of the species.

At first, animals evolved to hiss because the predators that didn't get frightened-off, tended to get sick and die out. Then some predators evolved to fear hissing. Then other animals started hissing because it scared predators away. Now it seems to be a mix of everything.

Bat cave colds
All the human coughing and sneezing and nasal itching, the discomfort, the snot, and the lung mucus. All of it helps the bats diseases spread in bat cave cave huddles. This is what all this stuff evolved for — to help pathogens spread better in a dark bat cave, among sleeping bats, when the cool daytime bat metabolism is good for incubating diseases.

Sicker when you go to bed
This is another thing that seems to from the bat cave. This gave the bats a higher viral load of protective diseases when they huddled to sleep together.

Why do predators have strong immune systems?
1/ This is needed to deal with the diseases they catch from their raw meat diet.
2/ The hard part of being a meat eater is not only catching the prey, but also having a strong enough immune system to cope with blood diseases.

People should be more careful about eating
a/ Undercooked meat, particularly jerky
b/ Wild meat, particularly wild varmints (from vermins).

Illness monitoring
We all should have an illness reporting app on our phones. Got a fever, headache, sore throat, runny nose, etc.? Report it. Then the "CDC" can make real-time maps of infectious illnesses. This gives faster data than waiting for people to go to a clinic.

Russian roulette
Let's say you could have a pig pen next to your bed. There is a dryer hose and some little fans that take the air from right next to the pig at its snout, and pumps the air right above your pillow while you sleep. This is a completely awful idea right? You are going to catch something… right? The point I am trying to make is that eating rare meat is probably a greater health risk.

Species protection
Eating undercooked wild "bush" or varmint meat is dangerous for all mankind, not just you.

Bubonic Plague seems to comes from squirrels more than rats
The Black Death apparently comes from the fleas of marmots, which belong to the squirrel (sciuridae) family. And in the US at least, many primary plague infections seem to come from contact with squirrels. So with plague, we are perhaps wrong to worry mostly about the filthy rats. Instead we should perhaps worry more about the cute little squirrels. We really should do some research about the true proportion. Knowing this proportion might save a great many lives one day.

How fast diseases march
1/ Perhaps the "fast marching diseases" like plague, diseases moving inexplicably fast are vectored by bats.
2/ There is probably a formula where march speed = bat range over incubation period.

Why did the rodent get big again?
Rodents are all about being small, low cost, plentiful and expendable. How come some rodent species have abandoned the small and low cost tactic and grown large again? (for example Marmots)… Isn't this like how on islands, many species grow big when they have no predators? Apparently Marmots are on this virtual island as a species—and they don't have to worry much about predators. This apparently is due to the bubonic plague they carry, and perhaps other diseases. What other rodent species have gotten big and fearless due to their germ weapon(s)?

Fearlessness is a symptom of CAP diseases
Apparently marmots come right up to people. Apparently their species has no need to fear other animals. Thus they can infect and cause no harm themselves. This seems to be another sign

of species that harbors a killer disease. Maybe we should trap and sample the blood of fearless creatures.

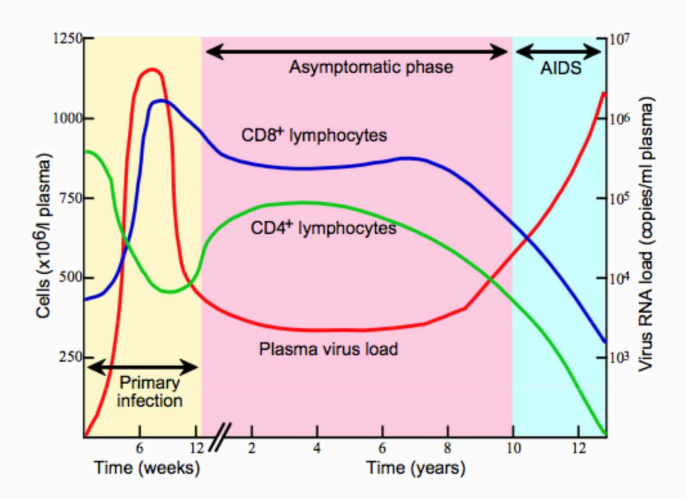
The strong smell of rodents
This is like the poisonous snakes with the bright coloring. The rodents are shouting: “stay away from our kind”. They are associating their smell with their diseases. They don’t care if predators can detect them more easily. Better all the other animals learn to stay far away from their kind.

Just don’t eat MY kind
It is actually better if the predator is still around eating your competitor species, but not your species. So perhaps GERD and other upper digestive ailments are the result of a pathogen like Helicobacter pylori that puts predators off eating certain prey animals. Which species harbor Helicobacter?

The bark of this tree
Zoonotic isolation will probably prove more valuable than the botany of treatments — for here we stop the problem at its source.

Plague breeding species
Where is the next super-bug going to come from? Probably where past super bugs came from.

Non-transmissible between humans
Think about how bird flu has been caught by humans, but does not seem to transmit between humans. There are two possible reasons for this:
A/ The disease (which can already reproduce inside single humans) needs to mutate so that its copies can infect others.
— OR —
B/ Bird flu is like HIV and Hepatitis-C. It is hard to transmit. It needs blood-to-blood, or ingestion of blood, or inhalation of dry bird feces, or some precise set of conditions to spread. Here we note how “everyone” touches and occasionally eats raw bird flesh, but few people come in direct contact with human blood or flesh.



Hepatitis-C
Apparently only 3% of people diagnosed with Hepatitis-C pass it on to their long term sex partners. It is one of the most important things in medicine to know how the various diseases spread, and which practices lead to the transmission of which diseases. The red “Plasma virus load” line in the above graph is the viral load for HIV. Note how the viral load is in the thousands except in the initial 12 weeks and in the late stages of the disease. Also note that the viral load can be in the millions for these periods. Now considering that Hep-C swims in the same animal blood ponds as HIV: Maybe we should use the HIV viral load curve as our mental model for the viral load of Hepatitis and many other diseases. And maybe, some of these have a late life pick-up, and some just taper-off.

And maybe with Hep-C, the initial short spike in viral load and infectiousness is only a few days, and these are both many times what they are afterwards during the long tail. Perhaps the 3% number is due to timing and a disease that is only contagious for only a short while. Then, after this the disease is seldom passed between people.

We must do it
Blood-to-blood exposure is the touchstone for seeing if inter-species transmission is possible. We need to know all the zoological niches for all blood-to-blood transmission of all diseases. And injecting animals in this way is going to bring an early death to a few old/weak/particularly vulnerable individuals in each species. But we will use this knowledge to bring eternally greater health to both ourselves and to all animals.

Central Asia Marmots
If these are the main bubonic plague reservoir species:
1/ The same forces that cause them to develop one disease will also cause them to develop others. So they might carry other nasty diseases. We should first have multiple teams looking for these diseases for some years before culling.
2/ We may want to have a few walled marmot reserves and eliminate the marmots from most of their habitat.

Tuberculosis
TB looks like another counter attenuated predator disease that always eventually kills. And in the process of killing it causes victims to frequently cough up blood clots for years, clots that are surely full of infectious TB germs. Each must smell quite a bit like a bleeding animal or a kill. Thus the TB chunks get carefully sniffed by predators following a trail. And it is a little blood here, and some weeks later, a little blood there, exactly what the pathogen needs to spread best across a wide territory.

This explains why TB is so hard to pass on between humans. We are not generally sniffing the blood other people cough up, like a canine might. Although we might be near while someone coughing up a TB blood clot. We should probably tell everyone who once tested positive to TB that if they have to cough, then they must social distance.

It seems likely that the costly and scarce bacterial “seeds” are only expelled in clot form. And TB is otherwise “1-in-a-million” contagious. Perhaps hepatitis C and many other hard-to-contract diseases follows this model.

The half-life of untreated TB patients is about 5-years. Half of people with untreated TB die every 5-years. So TB is a blood disease, and one that re-attenuated to turn the victims into multi-year blood-spitting spreading-platforms.

Look where TB is most prevalent
North Korea, Burma, Cambodia, New Guinea, Mauritania, Sierra Leone, Djibouti, and all the nations south of Chad and west of the Rift Valley. These places are not just poor, they are also isolated and thus ignorant.

A disease of ignorance
It isn't hard to infer from the countries that suffer most from TB that TB is a disease of Ignorance. Let's do some surveys. How many people in these places have never heard that if you cough up blood, you need to go and see a doctor right away for the relatively easy cure. Do the TB nations score especially low on these surveys?

Does knowledge cure TB?
TB is often called as a disease of extreme poverty. However, maybe this is inaccurate. Maybe TB is actually more of a disease of extreme ignorance. People have to be really ignorant not to have heard that painlessly coughing up a little blood now and then is a symptom of a deadly contagious disease. If this is so, then the easiest thing we can do in the global battle against TB is educating people.

Everyone should know that the half-life for untreated TB patients is 5-years. Half die every 5-years. Also they should know that the blood clots are what is truly infectious, and people are perhaps thousands of times more infectious while they are coughing up TB blood clots. Also, sniffing or ingesting the blood clots seems to be another way to pass the disease.

How much do global TB rates correlate to knowledge about the dangers of coughing up blood? I suspect that people don't see the harm of coughing up a little blood. They also don't grasp that the blood clots they cough up are highly infectious.They also don't know that they will be treated for no money and that they will probably be totally cured in no time. Otherwise, they are probably going to eventually die of TB and they will infect the people around them along the way. So for raising TB awareness and curbing transmission, let's have more public awareness ads about the dangers of coughing up blood in the nations where TB is prevelant. You have to go right away for treatment. It doesn't cost anything, and you get paid time off work if you have to quarantine.

Where are the TB blood sputum pictures?
Why is it so hard to search for TB sputum pictures?
If coughed up blood is responsible for 99% of human to human TB infections, why is it so hard to find pictures of this online? How much blood do people cough up? What does it look like in humans and animals? What does TB look like in humans and animals? TB sure seems to be a disease of ignorance, not poverty.

Everyone coughing up blood
Unless there was a recent trauma, everyone must get a TB check if they are spitting up blood. This shall be the rule worldwide.

Where is TB from?
The distribution in southern Africa (including South Africa) suggests at an animal source for TB, probably bats. Which bat species have habitat that matches the highest TB infection rate zones adjusted for TB inoculation?

TB among animals
TB evolved to have the coughed-up clots sniffed as food on the animal trail, or during copulation. The pathogen puts all of its reproductive energy here and completely shuts down at other times so it is undetectable by smell.

Let's keep TB under control
TB is definitely threatening to break loose of our antibiotic treatments. We really should be doing everything we can to slow down this treatable disease.

Ending TB
The simplest and easiest thing we can do to end TB is to have an information campaign.

Blood pathogen multi-tests and prevention
Let's have these multi pathogen blood test machines like our insulin testers. A person uses an insulin test needle to get a drop of blood which is touched to a multi-headed version of a sugar monitor insert. One of these devices checks for all the STDs, another for the respiratory diseases, another for diarrheal disease, etc. This is how we get instant self-help results for very little cost. This is how we put an instant infectious disease lab everywhere on earth. This is how we do regular screening.

We screen for COVID
Why not screen for everything?
So far, COVID is on track for killing around 6-million in two years, or about 3-million/year. Tuberculosis kills about 1.5 million a year.

TB and snogging
I bet that TB is pretty easy to catch from snogging. Here is why I would include it on a standard STD test panel.

Physical education and respiratory disease
The most conducive environment for spreading respiratory vectored diseases is to start with kids. First make them exercise in cold winter air so they get cold, and their airways get chapped and lacerated. Then make them take steamy showers together right after they were running around and getting chapped airways. Also, it is very helpful is spitting during or after one's run is considered part of working out.

A better TB approach?
Can't we develop a more effective vaccine than the one we have? The one we have isn't very effective.

TB treatment
We might try administering our antibiotics as both a vapor inhaler to the inside of the lungs and also as pills. Also, perhaps some drugs for lung infections are better tolerated in higher doses by administering the treatment to the lungs.

What is TB's main animal transmission scenario?
TB is always deadly, so it looks like a counter attenuated predator disease, and that points to bats. And maybe the clots are not perfectly adapted for infecting sniffing predators on a game trail. Maybe that is an incidental transmission route.

Maybe some species of bats cough up the TB blood clots when they sleep to infect one another (harmlessly probably). And maybe they clots come up when they are fear stressed. These then infect the bat predator/competitor which is mostly sniffing around in the dark.

Faking-out TB
It should be possible to fake-out TB so it goes dormant
https://www.sciencedaily.com/releases/2021/02/210222124608.htm

Can bat colonies spread TB?
Why don't we leave some TB infected animals for some hunger stressed bats without enough food. Which species of bats can pass the TB to which animals?

Which diseases can bats network and pass along?
we should test a variety of bat species for this.

The TB portal species
If we look at a TB prevalence map, the southern part of Africa looks like the most likely place for where TB is being transmitted from animals to humans. After our education, vaccination, and treatment campaign has been in place for some years, we will be able to better see which areas this is.

Gay men's diseases
Aside from HIV and Hepatitis, which diseases (including late life diseases) are more common among gay men? It should be easy to find these diseases, and catalogue them, and generate statistics so people will know the true risks.

Pathogens don't normally evolve towards virulence
Pretty much all pathogens find it hard to spread among modern humans with their medical knowledge and adaptive responses. And the deadlier the pathogen, the more we respond with counter measures. So we should expect that nearly all pathogens, nearly always rapidly attenuate in humans as a result. Also we should expect that when pathogens "mutate" and become deadlier in humans, it is probably from re-introduction rather than actual mutation. After all, the original zoological sources are the only evolutionary route that is driving evolution "backwards" towards virulence.

Human epidemics and time
If virulence only evolves in prey species, then the longer the pathogen exists in human hosts, the more it should re-attenuate.

Limited pathogen resources
1/ The pathogen's resources are typically limited given the demands of blind dispersion. So the pathogens evolve to focus their efforts and put their offspring where they will be able to reproduce best and survive.
2/ Pathogens evolved to infect the blood so predator, scavengers, and insectivore will consume the pathogen in the first place.
3/ Pathogens also evolved to infect the nasal and respiratory tracts, urine and feces, so the disease will get blown around in the bat cave, and between other social animals like dogs and rats. It is also so hissing animals will pass the infection.

A highly varied appearance… to the immune system
Pathogens are all masters of disguise when it comes to immune systems. After all, aren't they just burglars sneaking around and re-purposing our bodies—until our immune system can recognize them and eliminate them? So maybe the evolution of pathogens is more about cloaking and disguises than anything else.

The pathogen's objectives
1/ Produce lots of offspring.
2/ Get offspring dispersed well.
3/ Go undetected by current host's immune system.
4/ Go undetected by new host's sense of smell.

It isn't mutation really
Most pathogens are not truly mutating very much. Mostly, they are expressing some old and already well refined recessive traits long in their genomes.

Antibiotic resistance
What happens when bats regularly drink livestock blood with antibiotics in it? Does their 20-million cell disease-breeding-network then breed pathogens that are resistant to the new obstacle in their objective of virulence? Are bats the main source of anti-biotic resistance?

MRSA
1/ Bats are known to carry Staphylococcus.
2/ MRSA is not only a thing of hospitals. It also affects farms among other places.

Is it camouflaged?
Evolution frequently causes parasites to camouflage and hide themselves. Think of how hard it is to spot flesh-colored tick blood sacks on a dog's belly. Symbiots don't have to camouflage. The rewards of their helpful symbiosis is enough to keep the relationship going by itself.

Why the pathogen makes us feel bad
Think about the flu. Incapacity from sickness must turn many animals into prey, and scavenger pickings, thus they will tend to infect other animal species. But they don't stink like they died of the flu. Yet they tend to become prey and scavenger pickings. That is why you have body aches.

Pathogen dispersal trumps all
Just as seeds dispersal is all-critical to plants, infection dispersal is all-critical to pathogens. So we need to realize that infectiousness is the main objective/ benefit to a pathogen. And little else really matters in comparison. Whatever works survives and becomes the species.

Pigeons
Pigeons fly out over a large area scavenging food and dead animals from our cities. Then they roost together rather like bats. They may not be mammals (like bats) with similar metabolisms, but on the other hand they live much closer to us, and in great numbers. So they spread fewer diseases, but they are still a vector network. For example histoplasmosis fungus is spread by dry dust from both bat and bird droppings. Cryptococcosis and psittacosis are two other less deadly bird

dropping diseases that we know of because they produce immediate symptoms. There may very well be other attenuated bird dropping diseases that only produce problems later in life. If we are going to "drain the swamp" and get rid of the worst disease vectors, urban pigeons should be on the list.

Nobody cried for small pox
Nobody cried when we made smallpox go extinct in the wild because it is a "criminal species" in the "society of living things". Likewise, nobody can rightfully object to killing all the ticks or rodents or pigeons infesting a city.

Vermin
All creatures that transmit human diseases are vermin when they come to live with us. All should be eliminated from every human community on earth as best we can.
1/ Mosquitos
2/ Ticks
3/ Fleas
4/ Rodents (including squirrels)
5/ Bats
6/ Pigeons

Sub-zero parasites?
Do mosquitoes, ticks, and fleas benefit the ecosystem in any way at all? What about bats? I bet we eventually realize:
1/ That removing insectivore bats does not increase insect populations by a detectable amount.
2/ That the disease spreading bats are more of a problem than the insects they eat.

Criminal species
Species that harm other species, their habitat, or people, and especially if they harm people — these species should be thought of as criminal. Criminal species may be brought into captivity, and made extinct in the wild. This will greatly reduce disease — all disease — including a lot of late life diseases that people take for natural aging.

Eliminate from the wild?
It might greatly benefit mankind and the other mammals if we took some germ-warfare, or plague-carrying species into captivity, and eliminated the rest from the wild:
1/ Vampire bats and certain other types of huddling bats that eat corpse insects for example.
2/ Certain oversized rodents.
3/ Wild pigs.

Places without a certain animal
What late life diseases are less common where there are no bats? What about where there are no dogs, squirrels, pigeons, or pigs? What about people bitten by certain animals, what late life diseases do they suffer more from?

Staying away from wild animals
There needs to be more public information about this. And people need to understand that the risk is not that one individual will get sick and die, but that a new disease like COVID will be unleashed upon mankind. This is why people should avoid contact with wild animals.

Many animal species mixing at the zoo
Zoos are a terrible idea from an epidemiological standpoint. And "the world famous San Diego Zoo" is perhaps the worst. This is because the San Diego zoo is right by the airport of a huge tourist attraction city. And landing in San Diego, you fly right over the beautiful zoo and interesting-looking Balboa Park. (Quite Beautiful and interesting from the air.) So people from all over the world arrive, and many go straight to see the "World famous San Diego Zoo" before doing anything else. Thus, one of the world's largest animal collections is constantly exposed to fresh diseases from all parts of the world. And many other people visit the zoo on the way out. These people get exposed to the world's largest animal collection right before heading-out to all parts of the world. And many people bring their kids, which crawl around and touch everything, and then put their hands in their mouths, or rub their noses, or eyes. The alternative is to put all our zoos far away from big cities, and more spread out, or behind glass.

Varmint jerky
This is sold by the roadside in so many places around the world —and few people have any concept of the dangers. There really should be a worldwide campaign about how dangerous it is to eat wild varmint jerky—and also to butcher varmints. We need to explain how it is not enough to dry meat and prevent it from spoiling. There are other pathogens and parasites in the meat that are not killed in the drying process. And again, it's not just the jerky eater's health that is at risk. Eating under-cooked jerky puts everyone's health in danger. So selling under-cooked meat, particularly under-cooked wild meat should be illegal worldwide.

Stop the varmint hunting
Hunting varmints for food:
1/ Occasionally causes terrible plagues.
2/ Causes much late life disease.
3/ Is bad for species conservation.
4/ Is inefficient and wastes a great deal of time.
5/ Is not a significant source of food.

Varmints in cages
Varmints in cages are certainly more infectious than dead varmints. The trade in live wild animals for food or pets should be entirely halted worldwide on the grounds that it may lead to plagues.

Stay away from sick and fearless animals
So you found a strangely brave animal that is not running away from you, as normal. Maybe this is because the animal is terribly ill and has a high fever and a massive viral load. And again the risk is not that you will get sick as an individual, but that everyone will get sick from your interaction with the sick animal. The media (particularly the children's media) should not be encouraging or depicting people who find sick animals and nurse them back to health. It should be doing the opposite and telling people to stay away from sick and fearless animals.

Rodent to pet to human
The double jump from rodent to pet to human is unlikely, especially considering the strong immune systems that cats and dogs have. It is better to have the pet kill/ eat/ reduce the numbers of rodents than to leave the rodents around to infect humans.

Separating from the animals
I bet we eventually realize 3-things about disease:
1/ Most new and nasty varieties of diseases come from other animals.
2/ Most late life disease comes from attenuated pathogen infections decades earlier.
3/ People should be staying away from wild animals, and never butchering them, or getting their blood in their mouth or eyes.

Russian roulette for all mankind
It is Russian roulette for all mankind when people to eat many species of wild animal, or uncooked jerky, or meat. And keeping wild animals as pets is a similar sort of risk.

A stay away from wild animals campaign
If all the new varieties of diseases are coming from other animals, then maybe we should have a worldwide campaign against eating and interacting with wild animals except perhaps those with hooves.

Better isolation from a few creatures is how to stop most disease.

Wild animal walls
What if we walled all the human communities worldwide? What if we put a 6-foot block or precast concrete wall around all the world's communities. This separates all the wild animals and crawling insects from the human community. What if we put a 10-foot flying insect fence/screen above our 6-foot animal wall? This fence is perhaps made of chain link panels, with standardized bug screening panels that clip in. The screening is regularly sprayed with insecticide. As most flying bugs stay close to the ground, most land on the screen and die soon after.
1/ The non-flying insects can be more or less permanently eradicated inside the zone with a single application of pesticides. Also, most of the flying insects are prevented from entering.
2/ Due to the ring of animals on pyrethroids, and the screening, perhaps very few mosquitos will be able to make it into the community.
3/ There are no mice or snake bites, or insects, or road kill.
4/ Six-foot cinder block wall (on 2-foot footings) costs about $120/ lineal foot, or ~$650,000/mile. Then we add maybe $350,000 for fencing and screening/ mile. So a 20-mile x 20-mile square fenced area (with an 80-mile permitter) might have a one time cost of $80-million for a city of say 3 million to share. That is a one time cost build cost of $28 per person. (although tilt-up panels are probably better and cheaper.)
5/ Given the per person cost of building a wall like this, the fences might be 3 stories tall in many cities, so they are more effective at keeping the flying bugs out.
6/ If we spray the inside area with insecticide once, then we have 400 square miles of land where we can live mostly pest free without any additional pesticides. And maybe this pesticide breaks down in a few weeks, and long before human use of the land.
7/ We also imagine fields that are made free of insects by a single initial application to the ground, and then kept mostly free of insects by a grid of insecticide screen walls every so many miles apart. Thus only the walls need regular spraying, not the fields.

Fluoridated water
Insecticided water
Fluoride is terribly toxic stuff, but we only put a tiny amount of it in the water. What if we did this with the pyrethrin in the tap water across Africa's bug zone? What if people were supposed to water their livestock and there were artificial watering holes for wild animals. Then many animals would be made poisonous to mosquitoes. Maybe the aid water will be insecticided, so it will both be safe to drink and also it will significantly reduce new malaria infections among other mosquito diseases.

Illness monitoring
We all should have an illness reporting app on our phones. Got a fever, headache, sore throat, runny nose, rash, etc.? Report it. Then the we can generate real-time maps of infectious illnesses.

Rat dogs in action
They don't normally draw blood from the rats. Instead, they grab the rodent by the middle (away from both infectious openings) and instantly shake vigorously. It is hard to say what exactly is going on without slow-motion, but this motion probably sloshes the brain of the rodent causing instant disorientation and anesthesia. And once the dog gets going, it develops this towel snap motion that breaks the rodent's neck. The dogs that did not consume much blood, or end-fluids out-survived the ones that killed by biting. That is why they bite in the middle.

Jerboas and monkey pox
This looks like another CAP disease.

River animals and infectious disease
Think of the mammals living in runoff water contaminated with the feces, and corpses of other animals. These must already have a high resistance to disease. Which muck rooter is going to survive best?… The animal that carries lots of diseases to plague predators and competitor animals: or the animal that doesn't carry any disease? Here is why so many diseases come from, or via pigs. Here is why all the world's hog populations should be separated and quarantined.

The stink of pig manure
Is the pungent odor of the pig pen like the distinct smell of mice? Is it an infectious animal teaching would-be predators a lesson with that smell? The pigs also perhaps roll in their manure as a 2nd line of defense, another line of germ warfare for predators.

China and pigs
The Chinese character for the word FAMILY is essentially a pig under a roof. And even today, about 20% of Chinese pigs come from small holdings where the pig lives in the same building as the humans. The old Chinese way is that the pigs lives in the not-so-well-sealed-off crawl space under the house. It is these small pigs-in-the-house families that are thought by many to be the world's main source of swine flu epidemics. So this practice should be stopped.

Wiping out swine flu
Mandatory pig-farm separation and quarantine might add a tiny bit to the price of pork. But it will greatly curb the many swine flu varieties and the late life diseases they cause. So let's change

the rules of pig farming worldwide and put a complete halt to pig diseases.

New international rules of pig farms
Pig farming minus the human diseases
1/ No hogs may be kept in the same building that people live in or work in.
2/ We want our pig populations fully isolated from each other, from other animals, and from people. Then pig meat will be clean for mankind and good to eat.
3/ There should be a licensing process that make it unprofitable for people to keep less than say 500 pigs. And this should be so for the entire world.
4/ All pig factories must be a safe, and odor-free distance from all communities.
5/ All pig factories should be 100% sealed with regard to contact with land animals, bats, birds and even flying and walking insects. If there are any doors, openings, or skylights, they must be both netted and screened.
6/ As few people as possible should come in contact with live pigs. We should push all hog faming worldwide into robotic factory farms that have mandatory entry and exit quarantines for the few on-site workers. There are robots or shock collars that drive the pigs along, and for their meals, exercise, and a robotic "car-wash. When the pigs are out of their sleeping bowls, their bowl is washed out, and the waste sent down the drain by an overhead robot on overhead rails. So there is no mud or filth in the pig's life. It is a place of skylights and indoor laps on concrete.
7/ This is a big part of how we "cure the common cold" and eliminate most pig-borne colds and flus. It is also how we eliminate a great many attenuated, late life diseases that "colds and flus" tend to give rise to.
8/ All the feral hog populations need to be considered vermin and either relocated to islands or exterminated.

Bats and pigs
If we get serious about eliminating vectors, we probably should keep bats and pigs totally apart. It is not hard to imagine diseases cycling through one network into the other and back again.

How much do bats
accelerate time for pathogens?
2-fold? 20-fold? 200-fold? Doubtless it depends on the pathogen and bats.

Bat diseases & Metcalfe's law
Metcalfe's law restated for biology says that: Evolutionary speed = population squared. So linear increases to the breeding population: 2X, 3X, 4X, 5X, etc. have an exponential effect on evolutionary speed 4X, 9X, 16X, 25X, etc.

So if a hypothetical Coronavirus is living in 11 equal sized animal populations connected only by bats, removing the bats will cut evolutionary speed for the Coronavirus by 11-squared, or 121-fold. In other words, getting rid of the bats will cut the speed of evolution and adaptation by over 99%.

Metcalfe's law and evolution
Metcalfe's law (posited by George Gilder) was intended for computer networks, but it also applies to the adaptive speed of biological breeding networks. Metcalfe's law states basically that a network's "value" equal to the square of the number of nodes the network has. With biological networks it might read: The adaptation rate of a breeding network is an exponent (a square) of the breeding population.

So when two equal sized breeding networks are combined, evolution doesn't just happen 2X as fast, it happens 4X as fast. And when we divide a breeding network into two equally sized populations, evolution happens 4X slower.

So if we eliminate bats from a disease's breeding population, we might divide that family into 20 different populations that seldom interact. From here we imagine that eliminating cave bats might cut the adaptive speed of many diseases like those of the Coronavirus family by 20×20 = 400, or 99.75%.

The Bracken Cave
This cave in central Texas is home to 20 million Mexican free-tailed bats [Tadarida brasiliensis mexicana (Molossidae)]. On one hand it can be called "the largest warm-blooded non-human vertebrate colony in the world", and on the other hand it might be called "the world's largest network for evolving fresh and super-virulent bat vectored zoonotic pathogens".

Immunologically, we are fighting an evolutionary war with a number of bat vectored diseases. If we find that we must keep the bats, then we might close the largest caves and drive the bats into nearby "bat-coops" man-made apartments that can be slowly spread over a great area a few meters a day. Thus the largest caves are "broken up" into smaller disease breeding networks. This presuming the bats don't fly between coops too much.

Otherwise, we have a huge evolutionary network that is working towards counter-attenuating mammal diseases and making them much more virulent. Also, if we are going to do any intervention, we would be wise to start with the biggest bat metropolises because this is where most of the counter-attenuating evolution is occurring. This is where evolutionary time is running fastest.

Bats might not be so important
in that ecosystem
1/ What seeds do bats spread that birds do not? (Capture some birds and bats and keep them and feed them until they empty out. Then let them go. Who is passing what seeds?)
2/ Do bats really make that much of a difference in the insect populations? Let's conduct tests. We will eliminate the bats from a test area and see how much insect populations rise.
3/ Do bats swallow seeds, or do they spit them out. Which plants are completely dependent on bats for pollination or seed dispersal?

How to slash bat disease
without killing all the bats
1/ Regularly test bat populations and cull the sick.
2/ Break up the large caves. Maybe we have these styrofoam sandwich mini bat caves: mini-igloos, fiberglass covered and can be carried in on a litter by 2 or 4 men. They also probably

have a human door and a human window. Maybe we put lots of these in front of the bat caves before we net-over the cave entrance at 2:00am. Then when the bats return, they go to an igloo to roost. Then we spread the igloos around.
3/ Use two-part "key-lated" (chelated) poison in live bait animals to only kill the vampire bats and remove these 3 species from the wild. Dark goats on even days, light goats on odd days. Bait animals unharmed, blood sucking mammals dead.

Bats feed in 8 different ways
1/ Fruit eaters.
2/ Flower feeders.
3/ Flying insect insectivores.
4/ Ground insectivores.
5/ Vertebrate carnivores.
6/ Fish eaters.
7/ Blood feeders.
8/ Omnivores.
How many human diseases does each type of feeder carry on average? We should have numbers on which species are the most problematic. We should also study what happens when we remove the bats from the wild in isolated areas.

Because of their disease network, bats are actually one of the most important animals to know about, especially for health care people. Let's not kill them all before we have a chance to study them.

Bats are running so fast
Apparently bats run a fever of up to 108°F (42.1°C) when they fly. So bats may not need much of an immune system. They might be simply outrunning most pathogens. Also bats seem to have evolved to help their protective pathogens, to keep them alive. So bat immune systems should get more attention. Also worth considering is bat longevity in relation to their high metabolisms.

Bats don't get cancer much
1/ Perhaps their metabolism and immune system protects them from the pathogens that have attenuated into causing a late life cancer.
B/ Perhaps it is that their immune system can be more sensitive to cancer because it doesn't have other threats.
X/ I think it is probably only A, but I would not rule out that B is also happening.

Bat network functions
1/ Counter-attenuate powerful mammal pathogens to protect the bats from predators like cats, raccoons, foxes, and skunks.
2/ Rapidly spread diseases between and among mammal species. This is another form of counter-attenuation.

The bats at the center of the huddle
There is often a concentric element to bat huddles. Let's use super-accurate infrared thermometers to monitor the body temperatures of the bats in huddles. Are there a few super-hot infected bats in the centers of the huddles that feel good to be next to? Are all the bats the same temperature? Are the bats at the edge colder? Is there an economy of fever going on here? Will bats huddle around an electric heating element? How much higher are bat disease loads in the morning?

Summoning the pathogenic demons
Bats with their small guts and high metabolisms can get desperately hungry after only one night. Perhaps their immune systems then start "summoning the demons", the pathogens, by helping the pathogens to surface.

Bat diseases as memetic programming
Did bats evolve to exchange diseases the way humans evolved to exchange ideas? Consider the saying knowledge is power — Knowing many ideas makes you powerful. For bats that saying might translate as: Diseases are power — Carrying lots of diseases makes you powerful.

The right way to find bat diseases
How to monitoring bat populations for diseases
The correct way to to monitor bat populations for diseases is to get the bats from the bigger colonies, feed them well for three days with no activity in a cool place. From day 2, they also get immunosuppressants. On the fourth day they get no food. On the fifth day they get a blood draw and euthanized, then we swab their openings and cut off one lower incisors, including some gum tissue. The bats must be destroyed after this because they have been "germ-weaponized" and are too dangerous to release.

Collecting bat samples correctly
When we look for new bat pathogens around bat teeth, we might want to try and simulate, or exceed the force of a bite so the stuff inside the tooth socket will come out. Beware, there may be very nasty pathogens here. Also maybe we concentrate on bats with particularly red gums prior to giving immune-suppressants.

Bats as creatures of chronic infections
Bats are already out-running pretty much all the mammalian diseases due to their fast metabolisms. If they are carrying an infection, it is probably a symbiot like the one in the always-deadly-pathogen in Komodo dragon saliva — a symbiot that the dragon lizards support and definitely benefit from. Bats are known to carry a great many such symbiotic pathogens that kill the animals they come in contact with, in various ways.

A dog's sense of smell
The canine sense of smell seems to have primarily evolved to track prey animals by their scents. But there were also certainly evolutionary pressures for the dogs to tell one disease or health condition from another, helping the dogs to:
1/ Avoid infections that might sicken them.
2/ Discern the truly weak from the somewhat weak. Enabling the canines to become symbiots — by culling the unfit, rather than being indiscriminate predators. Thus more predation could occur and canine populations could increase.

Dogs learn negative associations with illness smells very fast
Let's fill a district with lots of pre-diabetics mixed in with healthy people. Many people bring their dogs here each day for a while to see if the dog takes to the training. Everyone in this community has an identical dog treat for each dog that comes

near, and the dogs are all conditioned to be hungry at this time of day. And while everyone has a treat, the dog is only given food from the normal people. From the pre-diabetics and diabetics, the dog gets a mild bark collar shock before he can get the food. After a short while, the dogs will run from people who are pre-diabetic.
1/ We can perhaps do this with schizophrenia and other diseases where we are clueless about their etiology. Finding asymptomatic people that most schizophrenia dogs take for schizophrenic might help us understand the disease better.
2/ A corps of detector dogs will be the easiest and best method of early detection in many diseases.
3/ We can train thousands of dogs at a time to do this, for almost no money, and on an informal basis.
4/ We can train thousands of dogs at a time to do this, for almost no money, and on an informal basis.

Dog bites are so common
Each year, 800,000 Americans seek medical care for a dog bite. These people are at risk of rabies, pasteurella, staph, strep, and capnocytophaga. Surely there are other undiscovered late-life "detective diseases" that dogs tend to carry.

Asymptomatic COVID
Why have no symptoms at all? Why not a tiny viral load and more shedding? It may be because dogs and other animals can then smell the COVID and learn to avoid it.

Train dogs to detect COVID
…and you've got it made.

Fast killing pathogens probably stink
They might have evolved to stink as a means of protecting their hosts. If so we can easily train dogs to detect these diseases.

That cold may give you cancer in 30-years
There are a great many late-life diseases that seem to come from pathogens that merely sickened us decades earlier.

COVID & high blood pressure
The COVID virus enters the body through the ACE2 receptors that regulate blood pressure. And high blood pressure does help blood pathogens spread. So high blood pressure looks like it might be from an infectious agent like COVID. We should figure out which viruses attach here, or to the ACE1 receptors, because there's a reasonable chance that one or more of these pathogens are the main source of late life high blood pressure.

Is high blood pressure from a pathogen?
If a pathogen elevates blood pressure, the individual becomes more stressed and aggressive and likely to attack and infect other animals with the blood disease. It is rather like how Rabies makes dogs "mad". But with high blood pressure, this goes on for many years. So pathogens definitely would have benefitted from causing high blood pressure.

Does stress activate high blood pressure
like it activates Herpes?
Stress is known to "activate" Herpes and cause outbreaks in a person. Perhaps stress also causes high blood pressure "outbreaks" in people infected with a high blood pressure. Perhaps stress in infected people raises blood pressure, which raises stress in a feedback manner. It is not hard to imagine that predator diseases might have evolved to amplify the stress that is is already present in host animals. This way, the attenuated pathogen was only stressing the host a bit, and was hard to detect by smell. Thus these pathogen individuals survived and became the species.

Clotting diseases of late life
COVID definitely causes clotting issues. When it eventually attenuates, it might cause clotting much later, perhaps decades later in life. So here we imagine a route for a delayed onset clotting disease dispersed/ spread by a pathogen much earlier in life. Another way to look at it is that many young people that had mild COVID symptoms today, may in their old age suffer severe symptoms from COVID in the form of high blood pressure. Also, blood clotting proteins are linked to arthritis. So perhaps some types of arthritis are from an attenuated blood disease.

COVID and people with high blood pressure
According to the CDC, around half of COVID hospitalizations are/were people with high blood pressure. Perhaps a different pathogen caused that high blood pressure by damaging the ACE receptors. Now perhaps a second coronavirus infection is causing even more damage to this system, fatal damage.

COVID mortality by BP graph
It is widely known that high blood pressure greatly increases COVID mortality. A little statistical granularity is easy to put together, and it might be very useful. On the X axis we have the last recorded BP prior to the COVID infection. And on the Y axis we have the mortality from COVID. There are two super-imposed lines, one for prior systolic and the other for prior diastolic BP.

COVID & stroke
COVID definitely attacks the inside of blood vessels, and this produces strokes in some patients. Perhaps some elder strokes are caused by similar blood pathogens that have attenuated to the point where they are only causing aneurisms and strokes decades later.

Viruses & cancer
The way viruses damage the genetic material of cells is known to be a big source of cellular malfunctions. Apparently the viral gene splicing produces errors, and frequently the same errors, the same sorts of cancer. So we should expect that some of today's viruses will tend to cause cancers in later decades.

Harmless bug, or late onset fatal
Perhaps a "harmless" cold in our youth will kill us 30 years later. Sometimes it is a virus introducing a mutation that will much later develop into cancer, or perhaps the infection will cause heart disease, or vascular disease, or stroke decades later.

Detective diseases
The pathogens that strike quickly are easy to see. The attenuated late life pathogens are much harder to recognize.

High blood pressure and shingles
Maybe these are both end-of-life return-outbreaks of attenuated diseases. Maybe we can treat high blood with a vaccine the way we treat shingles.

The German approach for expensive vaccines
Step 1: Go to doctor and get vaccine prescription
Step 2: Get prescription from the pharmacy of your choice.
Step 3: Return to doctor for injection.
Step 4: The needle is drawn in front of the patient.
This approach is a bit slower and more cumbersome, but it is more likely to be honest.

How does antibiotic resistance occur?
Is it mostly a matter of increased dormancy on the part of the bacteria? Given the way bacteria go dormant, chronic infections might be better treated by a course of antibiotics followed by one prophylactic dose every other days to keep the infection from returning while at the same time outlasting the dormant pathogen individuals.

Lure 'em out with immunosuppressants
Are some hard to treat diseases like herpes, HIV and TB better treated with a course of anti-biotic/anti-viral followed by a some hours of immunosuppressants.

A post anti-biotic blood test
Maybe a real good way to reduce anti-biotic resistance is to test everyone after their course for the presence of the bacteria they tested positive for. I bet a paper blood test kit can spot relapses hours before most people can feel they are relapsing. Maybe everyone has to go a certain time after their last does. Maybe they have to go to a pharmacy and give a drop of blood. I bet we can tell long before people even feel bad again.

Turning infections on and off
It is well known that bacteria go dormant when faced with stress. We need to figure out how the bacteria know to go dormant. If we know this, then we may be able to:
1/ Trigger dormancy with some harmless drug.
2/ Turn-off dormancy so our anti-bacterial drugs work better.
3/ Maybe we can use immune suppressants combined with antibiotics to lure the chronic bacterial infections out and kill them once and for all.
4/ Do sulfur sponging drugs increase the effectiveness of antibiotics?

Excessive stress response
It seems that the body's excess stress response can wear out like its excess sugar response. So perhaps our stress response should be viewed as another aspect of the body that can wears out. Perhaps ACE-2 pathogens help our stress response to wear out faster.

High blood pressure kills by stealth
Here is a pathogen killing some of its host in a way that probably doesn't smell like an infection. In fact, it may smell just like a very stressed prey animal dying of old age.

Addicts, old gay men, and virgin
The late-life illness statistics for these groups should be studied closely because every departure from the norm points to a contagious disease or lack-thereof. Is there a higher or lower rate of any late life disease in any of these groups? What late life conditions are virgins free of? What about remote people who have never been around a large group of people? What about New York subway passengers? What about people who let lots of dogs lick them on the mouth.

What polyps, aneurism, and stroke are
Some pathogens infections only cause localized inflammation. The inflammation causes the inner layers of cells growing faster than the outer layers. When this happens a polyp forms. With blood vessels, the polyp is called an aneurism.

The cholesterol deposits that supposedly cause aneurisms
If aneurisms are caused by pathogens, then the arterial plaque deposits look like the pathogen armoring itself against the immune system with a shell of calcium and cholesterol from the blood. So the plaque doesn't actually cause the aneurism per se. Instead it acts like a limpet or abalone shell, keeping the immune system out and allowing the pathogen to thrive at that site. Then this local thriving pathogen community will often cause a polyp. True "bulb" polyps are apparently even better at keeping the blood and immune system out. Once these have developed, the pathogen can reactivate, and the immune system simply can't easily reach it.

A**neurism treatment**
1/ If polyps and aneurisms are pathogenic in origin, we may be able to use a test to detect the bacterial proteins in the blood.
2/ Maybe we can use an angioscope to focus UV/ laser/ heat/ microwave/ cold or antivirals to kill local vascular infection if the plaque/ polyp is not too advanced.
3/ If the plaque is advanced, then perhaps we can use a mild acid squirts interspersed within a suction nozzle to remove the plaque. This like we do with the lemons and electric kettle build-up. But this seems unlikely except under suction due to the risk of break-away plaque in the bloodstream.

Diverticulitis
This looks like a pathogen that embeds in the gut wall, but apparently cannot use the circulatory system. Once embedded, the pathogen either irritates or kills the cells where it embeds. If the pathogen merely irritates, this eventually causes a polyp to form. The pathogen also seems to have evolved to use sugar to rapidly form gas, before it can be digested. This results in gas which causes the polyp to pop out into the peritoneum where it creates a cul-de-sac for itself that is safer from the immune system. Eventually the pathogen goes into kill mode, causing the gut to perforate, killing the host after many years. Then the host is eaten and the disease spread.

Gut flora transplants
Sprinkling crop seeds in the middle of a forest doesn't work. The trees must be cut down before the seeds are planted. Otherwise the trees will get all the light and the seeds will not grow. Perhaps in a similar way, the surface of the gut must be cleared of existing bacteria before the new bacteria can be expected to take hold. Maybe we need to use a water spray or UV kill off the existing flora in a few spots, so the new healthy transplanted flora we apply can take root.

Blood pathogens and vascular disease
When the blood pathogen gets into another animal, it is racing against time and being recognized by its new host's immune

system. So for many blood pathogens, it makes sense to attacks what they come to first: vascular linings. Here is where the pathogen gets a first toehold, perhaps its biggest toehold — before the immune system responds. Here is where the pathogen can establish a citadel for itself and change into slow vascular sabotage mode. First it builds up arterial plaque as a shield. Then it ramps up irritation of the blood vessel, eventually producing an aneurism pocket to use for hiding its offspring. Then the aneurism ruptures and kills the animal, "100% naturally", with not a hint of disease odor.

Bats connect periodontal & vascular disease
The blood pathogen migrates to the bat's teeth and makes them bleed.

Painful teeth are a symptom
Wherever we see infectious disease accompanied by painful teeth, we should note the symptom as this implicates a blood disease. Also, the salivary glands and nearby periodontal areas are another good place to look for otherwise undetectable predator diseases. The under the tongue salivary gland (a squirting gland) should tend to have other diseases still, hissing diseases perhaps.

Bats with bleeding gums
If nature favors bats that spread diseases best, then perhaps the bats that occasionally bite mammals have evolved to support an infection that causes chronic oozing periodontal bleeding. So when the bat bites, its blood mingles better (in two directions) with the blood of the victim. Thus diseases can transit via the blood of the bat directly into or out-of the blood of other mammals. We really should be culturing bat oral pathogens and looking for the same thing in human oral cultures. Also, maybe we should do some studies about what percentage of bats transmit diseases with one bite.

A close up on vampire bats biting victims
1/ We imagine infected bat fangs that are not needed for chewing because the bat is wholly focused on blood drinking. These teeth are only needed for one bite in 24-hours, mostly. So these teeth don't have to be very strong. So we imagine the bat's tooth sockets as being perhaps spongy and chronically abscessed and full of infected blood. This starts oozing out when the bat bites and applies pressure to its teeth.
2/ When the bat's infected and bleeding teeth bottom-out in skin of the victim, the bat keeps biting. Thus the bat's blood is pressed out of the tooth socket and directly into into the wound of the victim.
3/ We imagine that the bat blood has evolved antibodies or some other means of coagulating its blood and bonding on contact with the victim's open tissue. This is perhaps accomplished by a bat symbiot microorganism. Also, perhaps this blood binding pathogen is the cause of the clotting issues that COVID and some other blood pathogens cause.
4/ The exact mechanics of vampire bat biting should be studied under high speed video, especially with infected teeth.
5/ A great many otherwise hard to spread diseases seem to regularly flow into this species and that one thanks to the global bat disease network.

Vampire bat teeth
The small fangs close together in the front seem to be for thin skin. The longer teeth in the back seem to be for thicker skins like cow hide. There are only a few teeth because vampire bats have chronically bleeding gums to facilitate disease transfer in both directions. The energy burden of chronically bleeding teeth is reduced by eliminating unnecessary teeth.

Also, when bat species evolved to have missing teeth, it suggests chronically bleeding gums… which evolved to better transfer biting diseases in both directions. Perhaps we will realize that these species need to be culled in the wild because they are a key factor in transmitting diseases.

What bats pathogens need for spreading
1/ Mouth ulcers have what bat diseases need.
2/ Cold sores have what bat diseases need.
3/ Chapped lips have what bat diseases need.
4/ Nose bleeds have what bat diseases need.
5/ Bleeding gum disease and tooth decay have what bats diseases need.
6/ Coughing asthma, and damaged airways have what bat diseases need.
7/ Sneezing and nasal sneeze allergies have what bat diseases need.
8/ Urinary tract diseases have what bats need especially when they cause infected urine to spray and get airborne more easily.
9/ Frequent urination has what bats need when it causes urination during the night and infection of the other bats when they are gathered.
10/ Sleep disorders have what bats diseases need. This gets the bats up and active at night when the other bats are gathered around.
11/ Night time acid reflux burps have what bat diseases need… body fluids airborne.
12/ Farts have what bat diseases need… body fluids airborne.
13/ Diarrheal illness has what bat diseases need.
14/ Rashes have what bad diseases need.
15/ Bed wetting has what bat pathogens need. Maybe this is from an infection. What if there is this pathogen that infects young bats and makes them incontinent for life, but only while they sleep. But it only expresses in 1-in-1,000 cases because it also spreads other diseases and burdens the bats quite a bit. The pathogen should be present in the urine. Is there any extra pathogen in the urine of bed wetters? What about urinary tract nerve tissue? How is this tissue damaged by pathogens? Does this teach us anything about other parts of the nervous system damaged by pathogens.

What blood diseases need
All of the following help animals die without smelling funny:
1/ Dry eyes and indeed all eye diseases have what blood diseases need if they make a prey animals blind, so they can die without smelling funny.
2/ Tinnitus and deafness have what blood diseases need if they make prey animals blind, so they can die without smelling funny.
3/ Peripheral nerve damage has what blood diseases need if they make prey animals insensate, so they can die without smelling funny.
4/ Attacking the fingers of the front paws has what blood diseases need if they make prey animals lame, so they can die without smelling funny.

Dry eyes pathogens
1/ The correlation between dry eyes and corneal detachment does not seem to be studied enough. Perhaps dry eyes are

from a hit and run infection that sheds almost no copies so as to kill the host in totally natural smelling way.
2/ If you get dry eyes at the same time of day, every day, even if you stay in a hotel, then a pathogenic origin is suggested.
3/ Does exposure to sunlight help with your dry eyes? If so, then a pathogenic origin is suggested.
4/ Is it better to consume synthetic Vitamin D and avoid sunlight? Or does the UV light in the sunlight act on the infected eyes? We should know this.

Sunlight and diseases of old age
Which diseases of old age are less common among older people who are regular sunbathers? Which are more common among older people who exercise but do not get much sun?

Gout, big toes and hooves
The otherwise puzzling way gout attacks the big toe makes more sense when we realize that hooves are a homologous organ with big toes. In other words, gout looks like a transgenic pathogen that attacks the "big toe" joints of animals with hooves. So perhaps gout comes from contact with certain hooved animals. Furthermore, the similarities between gout and arthritis also implicate arthritis (and indeed much auto-immune disease) as possibly having a pathogenic source.

Chronic diseases that return when the host is stressed
Many chronic diseases are set off by stress. Here it seems to be that the pathogen evolved to rapidly multiply, and increase viral load when the host is stressed. This focuses the limited bio-energy of the pathogen and increases the chances of infecting a predator. Chronic diseases that "go-off" and rapidly emerge with stress are implicated as pathogenic in origin.

Here also is a model for understanding the connection between stress and inflammation. It is that stress causes pathogen loads to increase, and this results in increased inflammation.

Chronic diseases that return with dietary changes
Many chronic diseases are set off by dietary changes. Here it seems to be that the pathogen evolved to rapidly multiply, and increase viral load when the host migrates into a different habitat with different foods. This increases the chances of infecting other animals and conserves the limited bio-energy of the pathogen. Thus these more efficient versions of the pathogen tend to become their species.

Why does Pregnancy help with auto-immune disease?
1/ Not killing pregnant females is the way of fishermen and shepherds. It also seems to be the way of parasites and pathogens. When we see pregnant females spared, pathogens are implicated.
2/ Which party has evolved towards eliminating females that are not breeding? Is this from the host species evolved to eliminate non-breeding females, or is this a parasitic pathogen evolved to be more symbiotic by eliminating non-breeding females? The former seems unlikely given how human females live to be 80, but are only fertile until 40. On the other hand, the latter seems likely given that there are several medical conditions that back-off upon pregnancy.
3/ Can we simulate the "pregnancy effect" with synthetic hormones or other chemical markers of pregnancy? Can we improve on nature with our simulated pregnancy markers? Can we trick pathogens into remission? Also, maybe if we look carefully here, we can find the actual bodily malfunction that pregnancy turns off.

Johne's Disease
Many cattle diseases like this one will mostly be conquered if the cows are constantly moving as a front by an electronic herding device. That is to say, if they are not eating each other's waste.

Giant stores that sell everything
Think of how Walmart, Target, Cosco, and others seem to sell everything. Maybe through conjugation, and bats sustaining multiple protective pathogens, the various bat diseases tend to have more of a general store approach to the way they attack the body.

Why Vampire bats are particularly dangerous
1/They drink the blood of animals, and this mingles with the blood from their bleeding gums. Then they often drink each other's blood, mingling blood, forming a blood mingling network. Then when they bite the next animal to draw blood to eat, they mingle blood from their bleeding gums. So vampire bats create a blood-to-blood network for spreading hard to transmit blood diseases like HIV. In fact, HIV's difficulty of transmission points in no other direction better than it points towards blood drinking bats.
2/ Many pathogens may start out in the bloody periodontal areas of vampire bats, where they don't need to travel anywhere to infect the animals. Then they evolve to make the jump from burdensome bloody teeth, to nearby salivary ducts. Then they evolve to infect the sinus, lungs, and gut.

Which bats carry which fleas?
Can bubonic plague fleas be carries on bats? Which fleas, lice and other blood sucking insects live on bats?

Zoonotic Isolation
The cost of isolating the pigs, bats, insects and other vermin is a tiny fraction of the short-term health benefits this will bring. And that is to say nothing about the later life health benefits.

Stop the infections
Reducing the number of lifetime pathogen infections is probably the biggest and easiest thing we can do to reduce late-life disease.

Teaching the immune system
Maybe this isn't necessary. Maybe we eventually realize that:
1/ Most old age diseases come from a few germ-warfare species like bats, pigs, and oversized rodents.
2/ People should avoid these animals when they have not been farmed properly.
3/ There should be punishments for people who take risks with all mankind to taste some rare animal's flesh… flesh that tastes a lot like other meats.

How pathogens accelerate aging
Many pathogens are never completely eliminated. These go on, each slowly killing cells in various parts of the body, which get

replaced more often than normal, thus the pathogens accelerate the aging process in a focused way.

Nervous system pathogens
Like everywhere else, these pathogens can slow down, but only to a point, and many need to kill cells so they can live. This tends to cause the cells to age and die off

Alzheimers And Herpes
Herpes infects the nervous system. Herpes is also found in higher levels in the brains of people with advanced Alzheimer's disease. Perhaps it is one of a few attenuated nerve diseases that cause peripheral nerve disease and Alzheimers.

Glaucoma & herpes
Not only is glaucoma a disease of the nerves, but those with herpes infections are more likely to get glaucoma. Maybe this occurs where the virus first infects the eyes. Or maybe it is from another pathogen that comes from the same place as herpes.

Attenuated Rabies
The most common way that deadly pathogens attenuate is by down-clocking and killing in decades instead of days or weeks. So if we started with a Rabies-like disease that ate up the nervous system and produced madness in weeks and months: What would that look like if it attenuated to a decades time scale? It would look a lot like senile dementia, wouldn't it?

Senile dementia / Alzheimers
Maybe this is 4 brain and nervous system pathogens that have all attenuated and produce vaguely similar mental decline symptoms via different mechanisms.

Curing alzheimers
The pathogen has been playing Jenga with the mind for decades. And now that the tower is wobbling you want a cure? The time to prevent Rabies is in the early stages of the infection.

Peripheral nerve damage =
Playing jenga with the nervous system
Nerve cells don't recover from infections well. So nervous system pathogens tend to be degenerative. The only question is how fast?… And which nerve cells get killed first?

Some nervous-system pathogens have evolved to kill peripheral nerve cells first, and to kill them slowly. Either that or they mostly go for the unused cells, unless they are all gone. But this killing of the peripheral nerve cells is how the pathogen keeps its host alive the longest — the pathogen's shedding/spreading/ dispersal platform. Once a pathogen starts playing Jenga with a host's brain, it ruins the mind (as in Alzheimers) and the host dies soon after. However, before Alzheimers, there may be a measurable loss of nerve function in this or that place that serves as a herald of Alzheimers.

Antibiotics causing peripheral nerve damage
Is the antibiotic causing the peripheral nerve damage, or is the recovering bacteria killing more of your nervous system when it recovers.

What is senile dementia?
Look at it from a zoological standpoint to really understand what is going on. We have this "dry rot" of peripheral (or non-essential) nerve activity. This is a disease long attenuated to the point of symbiosis.

Connecting sleep apnea and Alzheimer's
They both look like different aspects of a bat disease. Sleep apnea probably helps spread the respiratory disease among huddled bats. The Alzheimers is the disease destroying nerve tissue as slowly as possible so as to stay alive and infectious as long as possible. Eventually the Jenga tower collapses and the person becomes demented or dysfunctional from Alzheimers. Then after decades of being a pathogen spreading platform, the host dies of what smells just like natural causes, so the scavenger train does not avoid the kill.

Make the host act boldly
Consider the aggressiveness and boldness of some animals when they are desperately hungry — then port it to flying bats. So bat feeding probably at times has an element of aggressiveness, boldness, or randomness. And this would help spread bat diseases.

Rabies and boldness
Consider the way rabies makes dogs act with bite other animals. Does rabies do the same thing with infected bats that normally do not bite? Did rabies evolve to make normally non-biting bats more likely to bite? Are there other diseases that evolved to make non-biting bats more likely to bite? Is this the source of some forms of severe mental illness?

The two sorts of Super-spreader
Most epidemics will have a short "spike" in patients, followed by a long tailing-off Like in the previous HIV graph. It is important to realize that both the short spike and the long tail have their own sort of super-spreader/ super-disperser. The super spreader of the short spike sheds lots of pathogen. The super-spreader of the long tail has a lingering infection that keeps the pathogen in the environment for a long time. Addressing both sorts of super-spreader is key to controlling a disease.

Viruses humidity & exercise
Dry air kills viruses faster, but it can also cause people to develop chapped airways, which makes them more susceptible. Humid environments sustain the virus longer but do not cause people to develop airway chaffing. The worst of both occurs when someone is:
A/ Getting winded and chapped in dry air, such as a run in Phoenix, or skiing in thin dry mountain air, and then…
B/ Going somewhere moist and crowded right afterwards like a crowded ski lodge.

Winter sports and lodges
The ski resorts of Colorado, Utah, Idaho, and Bergamo were all COVID hotspots before they were shut down. Look at the lifestyle. Days are spent getting winded, internally chapped and hypothermic in cold dry thin air. Then nights spent in a stuffy ski lodge bar with people from all over the world.
1/ It shouldn't be too hard to figure out if getting winded and then going to a crowded place increases one's chances of getting a cold. Let's correlate breathing rate for 10-minutes with increased changes of getting some disease, and let's study how long people must wait for things to return to normal

2/ We might need to close down all the bars and crowded restaurants in our ski areas as public health nuisances.
3/ If it is dangerous to winded and chapped in dry air and then go into a crowded place, then everyone should know this.

The PE class run
How many schools require that the kids go for runs in the cold dry winter air? How many kids get hypothermic noses from this? Then 30-minutes later, the kid is in a poorly heated classroom that is kept stuffy so it stays warm enough. How much of flu season is this causing?
1/ Kids should probably exercise after school, so the micro-lacerations can seal up overnight.
2/ We should have better temperature, humidity, and air-circulation guidelines for our schools.

Cold buildings are a symptom of management theft
Many building managers stubbornly and absurdly resist reasonable calls to set the thermostat temperature down in summer and up in winter. If the manager is making this decision, the reason is normally that there is more money to siphon off. In other words, poor conditioning of buildings is a symptom of property manager theft.

Plagues taking the old and sick
We have had it so good for so long that we have forgotten how it was normal for an epidemic to take the old and ill. Taking the old was normal. What happened less frequently was a plague that took many of the young as well as the old.

Asymptomatic kids in school
It isn't only with COVID where kids can have a pathogen infection and frequently show no symptoms. This is the way things normally work with contagious diseases. Kids frequently get the disease and don't know it. Then due to the school classroom huddling, they become super-spreaders in the community.

The football huddle
1/ Get out of breath in dry fall-winter.
2/ Huddle closely to plan.
3/ Repeat many times.

What is cold and flu season from?
1/ Is it from indoor air circulating less in winter?
2/ Is it from people getting chapped in dry winter air and then going into crowded places?
3/ Is it from a colder and lower energy winter-Earth stressing cave bats and causing them to share their diseases more?
4/ Is it from a lower immune response in colder cave bats?
5/ Is it from less UV light?
None of these things would be hard to get answers on. What a valuable thing it would be to know which of these is responsible, and which are not. For then we might be able to stop cold and flue season entirely by focusing our energies where they will produce results.

Mouth ulcers
The main cause of these seems to be the sharp edges on one's adjacent teeth. The dentist can round these edges off in about 2 minutes without anesthesia. Also, having open cold sores probably makes one more vulnerable to a variety of other diseases.

More fever cameras
In Asia they have many more thermal video cameras in public buildings. We should probably require these in the US at schools, airports, subway stations, and other crowded places.

Coughing or a runny nose
Even if you know it is from allergies, you are supposed to wear a mask in public, just like in Asia.

High school biology
How much less reactive and less infectious are the various pathogens after they dry out for 5 minutes, 10 minutes, 30 minutes? There should be a curve. It's just basic sanitation.

Quarantines help attenuate pathogens
Quarantines are not only a tool for halting outbreaks, they also accelerate attenuation through natural selection.

Forced attenuation
Step-1: Find a few people infected with a super-mild version of the pathogen.
Step-2: Infect 40 death row inmates with this version.
Steps-3 on: We find the mildest cases and repeat step-2.
Eventually we have an attenuated version of the pathogen which we use to infect people. This is something that we should have started doing with COVID in January of 2020. So some months later, people could have opted for controlled infection by an attenuated version of COVID.

Asexual reproduction leaks
or
1:10,000 conjugation rates are all fast breeding bacteria need for "infinite" adaptability.
A great many asexual reproducers seem to engage in genetic material exchange through conjugation at rates of up to around 1:10,000. This seems to be all that is needed for adaptation. This is because 2 to the 10th power = 1,024, and 2 to the 20th power = 1,048,576, and so forth. So for say streptococcus (with a 40 minute reproduction under ideal conditions), the survivors proliferate quite quickly. They can make up to:

1-thousand copies in ~7 hours, (0.1 exchanges)
1-million copies in ~14 hours, (100 exchanges)
1-billion copies in 21 hours. (100-thousand exchanges)
1-trillion copies in 28 hours, etc. (100-million exchanges)

So there is no true asexual reproduction. It is only mostly asexual reproduction, and the small amount of sexual reproduction through conjugation is all that is needed to achieve "infinite" adaptability.

Ambient UV
If mid-day sunlight kills half of pathogens in a couple minutes, then even reflected and ambient UV probably creates an untenable habitat for those micro-organisms. Perhaps we can actually smell/sense this lack of micro-organisms in brighter places, vs dim places.

Survivors caring for the sick
There should be videos where the recovered and immune can be taught to help care for the still sick.

Hot air high oxygen ventilation
People don't burn their lungs in 45° weather, maybe oxygen-rich hot moist air ventilation will harmlessly slow some respiratory infections. I imagine these CPAP-like machines that output hot respiration air at a very precise temperature and humidity and also high oxygen levels for the purposes of treating the membranes of our airways. And maybe they add zinc or antibiotics, or anti-virals.

Ridiculous Coronavirus names
Let's stop using 229E, NL63, OC43, and HKU1 for Coronavirus names. Instead let's reduce our mental overhead, and call them as Corona-1 to Corona-7. So Corona-1 to Corona-4 are common cold viruses, Corona-5 is SARS, Corona-6 is MERS, and Corona-7 is COVID.

Isopropyl
Let's stop calling rubbing alcohol as alcohol. Let's drop the alcohol part from the packaging and just call it isopropyl.

Avoid unproductive coughing
We should teach kids to try not to cough except when it brings something up, as this damages the airway tissues.

Liquor vapor cough suppressant hack
When I don't have a cough suppressant, or can't wait for it to take effect, I sometimes use inhaled liquor vapors to anesthetize my lungs. I put a teaspoon of hard liquor on my tongue, tilt my head a bit forward of level. Then almost totally close my mouth and inhale very slowly so as to bubble or "bong" the air through the alcohol. This draws thick anesthetic alcohol vapors into the airways. I repeat a couple times until the urge to cough passes. Then I spit out the alcohol.

Antibiotic inhalers please
Most antibiotics are water soluble. So one can rub a tablet into some water in the palm and create a liquid like skim milk diluted with water. I wish something like this liquid was properly studied and dosed as an inhaler. Also, these will certainly cause problems as do all drugs. It is just that they look like they might be a miracle cure for some people with chronic bronchitis or repeated sinus infections.

Antibiotic delivery to the lung surface
Inhalers seem the way to go for infections of the airway's surfaces. Perhaps we will bind the drugs to a large clunky molecules that cannot enter the body like with Rifaximin. Thus the drug can be more toxic, and more effective.

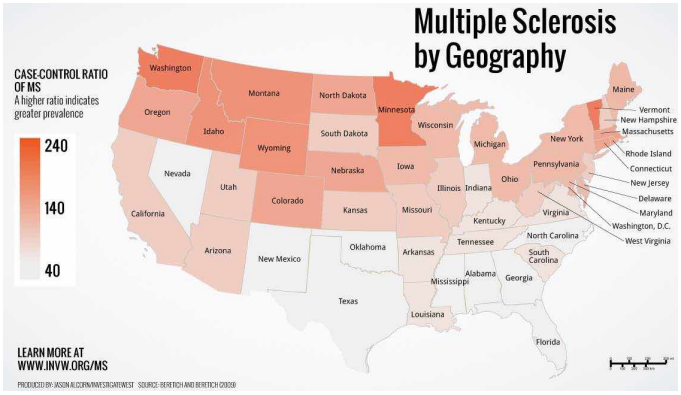
Zinc inhalers
Does it help respiratory infections to inhale zinc mist?

Better inhaler sprays
For better distribution, the spray needs to occur over 2-3 seconds.

Making viruses deadly to study them
This is a dumb idea. It seems to mostly be a bad excuse for developing bio-weapons. The risk of a superbug getting out is extreme. The reward seems almost far fetched. People should never be allowed to make pathogens more virulent. It should be outlawed by international agreement.

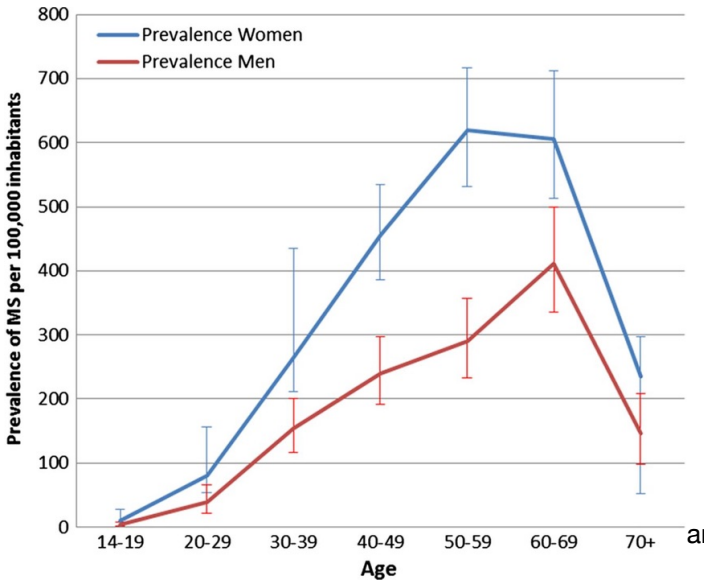
Immune system elasticity and age
Immune systems seem to start out strong like so many of the body's systems. Then, as people age, the immune system become "in-elastic" as with the other organs and tissues. Perhaps some old people die of infections because their immune system has recently become too "inelastic" to deal with a major challenge.

Weak links, strong links and Small world networks
The names "local-links", "leap-links" and, "leap-networks" convey much more sense of the subject than the current vague terms. These terms are much more user-friendly for this important area of science. They will lower mental overhead, and make everyone smarter.



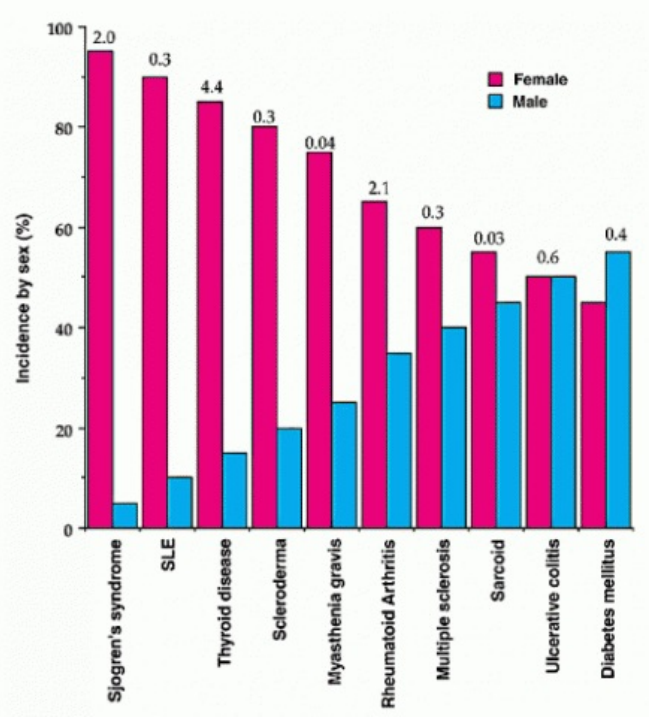
Pathogen, auto-immune, or other
As a rule of thumb, if a disease is more common towards the equator, it looks infectious. And if a disease is more common at higher latitudes where people "hibernate", it look auto-immune. Also, females tend towards less activity than males, so they tend to get auto-immune problems more. If a disease is more common among females it also looks auto-immune.

MS is both more common at higher latitudes and more common among women. It seems to be a hibernation disease, a condition caused by a synergy between winter break and awful stay-at-home weather. The kids emerge from some weeks of hibernation and exert themselves without enough warm-up and they get an auto-immune syndrome as a result.



are

Auto-immune diseases that strike women more
Females seem to have stronger immune responses. And this is thought to be due to the bearing of offspring. But maybe it is about activity level in youth. Also, the connection between low levels of Vitamin D and MS could be explained by how girls tend to stay home more than boys when it is cold. Which other diseases are both more common in higher latitudes and among people who "hibernated" or otherwise got torpid for a long time in their youth?



Headball
Perhaps one day some doctors will sign a petition saying: "We ask that the rules of soccer be changed so that it is not allowed to hit the ball with one's head. We think that this is probably harmful, and it is so easy to simply change the rules of the game and make it truly football, instead of a brain-damage version of football."

Cancer weed
Let's officially change the name of tobacco to cancer weed

Motorcycles —1:7 Road Deaths — 1:700 Road Miles
Highway deaths were about 36,000/year, prior to COVID. Of those, about 5,100 were motorcycles. For the road miles number, just look around while you drive, but double the number for time of day, and double it again for time of year. People just don't get that motorcycles are over 100X more deadly than cars.

Year	Car Deaths	motorcycle Deaths
2015	35,486	5,026
2016	37,806	5,337
2017	37,473	5,229
2018	36,835	5,038
2019	36,096	5,014

Regarding the road miles you see, you might want to double it for time of year and double it again for time of the day.

The main starting points of COVID
1/ It lands in the lungs and causes lung problems first.
2/ It is swallowed and causes gut problems first.
3/ It lands in the nose and causes nasal problems & loss of smell first.
There seems to be 3 main avenues for the infection to enter the body. Is one of these avenues less deadly than the others? Is there another route that is less deadly than these three.

The 7-headed Coronavirus family
The highly successful Coronavirus virus disease family has 7 varieties plaguing many species of genuine life.

Is COVID a fresh new cold virus?
It looks like CV-5 to CV-7 are fresh new common cold viruses like CV-1 to CV-4 — diseases that probably killed a larger portion of the population when they first appeared.

China's #1 Bio-weapons lab
Wuhan is located at the biggest fork on China's biggest river. Wuhan is on one of China's main transport hubs. This is a really dumb place for a bio-weapons lab. Is this: a) Stupidity, or b) An excuse?

China COVID statistics
China: 1,400,000,000 people, 4,636 COVID deaths.
USA 330,000,000 people, 602,000 deaths.
In China, the poor crowded epicenter of the COVID epidemic we have **1-in-301,948** people dead from COVID.
In the rich spread-out US, far from the epidemic epicenter we have **1-in-548** people dead from COVID.
(Covid numbers here as of June 21, 2021)

301,948 ÷ 548 = 551. So the people in the rich and spread-out adversary nation at the other side of the world have been 551 times more likely to die than in the poor crowded nation at the epicenter of the outbreak.

China: 1,400,000,000 people, 91,629 COVID cases.
USA 330,000,000 people, 33,500,000 cases.
In China, the poor and crowded epicenter of the COVID epidemic we have **1-in-15,279** people contracting COVID.
In the rich and spread-out US, far from the crowded epicenter we have **1-in-9.8** people contracting COVID.

15,279 ÷ 9.8 = 1559. Thus people in the rich and spread-out adversary nation on the other side of the world are 1559 times more likely to get COVID than at the poor crowded epicenter of the outbreak.

Was China Immunized?
The COVID fire burns everywhere but in China. Maybe China isn't under-reporting. Maybe China's isolation tactics are not winning. Maybe a COVID vaccine was quietly added to their other immunizations and China was immunized.

Our visitors from the PRC
Are PRC visitors significantly under-represented in US statistics for COVID patients? If so, then China would appear to have been vaccinated.

Diabetes and sugar disease
1/ Diabetes is 1/7 of healthcare spending.
2/ There are 34 million Americans with diabetes (10%).
3/ There are 88 million Americans that are pre-diabetic (27%).
4/ See the staggering cost of diabetes at diabetes.org

Diabetes is up 2-3 fold in 30-years
In the past 30 years, the number of cases of diabetes in the world is more than doubled to 366 million. In the Arab world the diabetes rate has nearly tripled. Given that 10% of Americans now have diabetes, and this results in immense public healthcare costs, perhaps we should tax the sugar content of the things we eat and drink.

Is diabetes from fructose + liver damage?
Fructose is metabolized by the liver and not the gut. When the liver metabolizes fructose, it is turned into glucose, the bane of diabetics. Older people commonly have damaged livers gone "fatty" from years of abuse. These livers become unable to function properly and are not able to break down fructose rapidly. As a result, glucose trickles out into the bloodstream over many hours, and even over night. This results in a steady demand for insulin that wears out the insulin producing cells, resulting in diabetes.

The failure of the insulin producing cells is thus seen as a secondary effect. The primary cause seems to be damage or aging of the liver cells that metabolize fructose. This can result in overnight glucose or high morning blood sugar. This in turn keeps the insulin-producing cells on 24 hours a day until they fail.

Why me?
1/ It would appear that some people have insulin cells that can operate for ~500,000 hours, while other people have insulin cells that can only operate for ~25,000 hours in their lifetime. Or perhaps most people have insulin cells that can operate 24 hours a day for decades, while others can't do this at all and their insulin cells fail when they are children. So-called childhood diabetes.
2/ Some people binge on fructose and alcohol all day until they ruin their livers. Sucrose is half fructose.

126 grams a day of sugar
This is 4.5oz, the average US sugar intake.

10KG baby vs. 80kg Adult
1- yolk = 8-yolks
10-grapes = 80 grapes
2 strip of bacon = 16 strips
Small kids won't even burp from eating these quantities, because they are still young and this sort of stuff doesn't bother them yet. But how many grapes are there in a jar of grape baby food? And what is the adult equivalent for a jar of baby apple sauce?

Childhood diabetes
Many mothers seem to be under the impression that they should feed their babies fruit to relieve colic/constipation. Therefore many mothers give their babies a daily does of fruit — so much fruit that it has a laxative effect.

Here the baby is given so much fructose, that its liver is overloaded and parasitic bacteria overgrow and eat the fructose instead. This leads to inflammation and fluid which softens the stool. So, yes, if you overload a baby's liver with sugar at every meal, they will get loose stool, meaning liver overload and also perhaps their insulin system is being damaged.

Also, the reason why apples in particular have such a famously great laxative effect for babies is that along with grapes, they have more fructose than other fruits.

Here we start wondering about the entire idea of the daily dump and regularity. For all we know, this daily dump state might wear out our digestive system, including the liver and pancreas 1/3 faster that when we are "irregular". Maybe we should rethink fibre, fruit and fructose.

The easiest thing for liver and gut health
Don't consume so much fructose or alcohol that you get farts, bloating, acid reflux, or loose stool. These symptoms mean that you are overloading and damaging your liver by making it work at maximum output. You are also overloading your digestive system, the normal gut bacteria overgrowing and causing inflammation, fluid, and pre-mature aging.

How to recognize "sugar bloating"
Do you wake up trim and then become bloated later in the day, all day? Does this bloating not appear if you eat only meat, eggs and oil? This means you are consuming too much sugar and you are already on the path to diabetes.

The most important meal of the day
People often say that breakfast is the most important meal of the day. Maybe it is most important that you not eat in the morning and BREAK YOUR FAST with a BREAK•FAST meal. Breakfast apparently IS the most important meal of the day. But it is important that you not have it if you need to slow the onset of diabetes.

Break-fast and diabetes
One thing that is important for preventing diabetes is that you don't break your daily fast, and that you only put sugars in your gut for part of each day — say lunch to dinner. Apparently the thing that is important about breakfast is that you not eat it, or that you have no sugars at breakfast, only meats, oils and fats. Even a big portion of carbs will result in sugar.

How much of the day do you fast?
Do you break your fast in the morning, with a sweet break•fast meal of sweet yogurt and cereal that is 1/3 sugar by weight… or do you do the right thing and wait until mid-day to begin eating sugars?

Morning fasting
For pre-diabetics, lengthening the daily fast should give insulin producing cells much needed time to recover.

The old dietary ways
Traditionally people had an evening meal and did not snack after this. In America this was around the time the father came home in the evening. Then they had a breakfast of meat, fat, carbs (hash browns, pancakes, oatmeal) and little sugar. So

traditionally (when we had much less of a problem with diabetes and obesity) people really didn't have much sugar or carbs between say 7:00pm and noon the next day. In other words, they spent 17 hours of the day sugar fasting, while today we spend maybe 8 to 12 hours a day sugar fasting.

In recent decades, desserts and after dinner snacks were generally the stuff of special occasions, treats, and were not a daily thing. That is how people ate before we all started getting fat and getting diabetes.

Harmfully rich diets
When the ancients spoke of rich diets, they weren't talking so much about creamy or fatty things. Those things were never so scarce as sweetness was. References to rich things were about honeyed nuts, dried fruit, fresh fruit, fruit juices, beer and wine. That was a rich diet prior to modern times. So the harmful richness of the ancients was about fructose and alcohol mostly.

Cloyed = overloaded
If you are eating so much sugar that you feel cloyed, then that is a binge. That is a sugar overload.

Weight gain/loss
How big is the caloric intake zone where people neither gain nor lose weight? How much does excess caloric intake shorten one's life?

Pre-diabetes and a lower calorie diet
Is pre-diabetes slowed by having a caloric intake at the lowest weight-stable intake? Life expectancy is certainly longer if we do this.

Of fat and thin diabetics
The fat diabetics are not bothered by eating too much. These succumb to the hunger-stimulating effects of insulin. The thing diabetics on the other hand are bothered by eating. So they tend to eat as little as possible and get thin as a result.

Less food = less sugar
With diabetes, the body has a problem with excess nutrition, particularly sugar. So what are we going to do, give it lots of nutrition? No. We are going to have scheduled meals with a precise sugar and caloric intake. We dial this down until we start losing weight. Then we back off to a stable intake. And we have pedometers and other ways to input exercise. And the app tells the cafeteria how big your meal portions are.

The best liver cleanse
It is to not drink alcohol and to avoid all sweets. This will help keep two important parts of your body young. What about the unproven teas and herbal cleanses? Are those more likely to be real or quack remedies? Also be sure to drink enough water.

The two forms of fructose
There are a few types of fructose. Is there any difference between how these are metabolized? Is there any difference in how hard these are on the liver?

How does fructose metabolism fail?
What point does fructose metabolism normally fail? Is it with fructokinase, triokinase, or with one of the other enzymes? Where does fructose metabolism slows with age?

People take the insulin state for normal
All around the world, people are now consuming so much dietary sugar that they think this is the normal state.

Open kitchens
This is another thing that is surely contributing to obesity. Maybe we should have closed kitchens in our homes, with time locks that prevent on-site mindless snacking.

307,000 hours
It is not hard to imagine that some people have insulin cells that can work for say 307,000 hours in their lifetime. (12-hrs of insulin daily for 70 years = 307,000 hours.) So once their liver is damaged, they often start using their insulin cells 24 hours a day. So maybe their first 20 years are 12 hours a day insulin and the next 25 years are at 24 hours a day. Then their insulin cells wear out completely and they are diabetic at 45 years old.

Chemical machines with a fixed lifespan
Google says tires last about 60-75,000 miles. But how many years is that? Well it all depends on how much you drive your car and how many sharp turns you take. It is much the same with alcohol and sugar binges in humans. They are like sharp turns for your tires.

Lightweights
It should be common knowledge that being an Alcohol "lightweight" can be an indication of a damaged liver.

Don't snack all day long
If you eat all day, then your insulin level is raised all day… And your body may only be coded to have 300,000 hours of insulin in your lifetime. Or maybe it is 500,000 hours… or maybe only 80,000 hours.

Maltose
The way maltose blocks sugar absorption would seem to contribute to wearing out one's insulin producing cells by keeping them on longer. Are heavy beer drinkers more prone to develop diabetes than people who drink other sorts of alcohol?

Why sugar causes weight gain
1/ Insulin is the hormone that tells your cells to eat. Snacking all day causes your body to release insulin all day. Thus all day long, your cells have their eat switch on.
2/ Insulin tells your muscles, fat, and liver cells to absorb glucose from the bloodstream. It basically tells your cells to eat or don't eat, in an on/off way. So let's say your liver is damaged and is no longer able to metabolize fructose well. Then the liver starts getting these backlogs of un-metabolized fructose… and glucose trickles out of the liver for many hours, and the body handles this by turning on insulin for many hours. In effect, these people have their cellular eat switch turned on for more of the day and that is why they gain weight.

Obesity & Diabetes both are from excess sugar
Obesity: Because your insulin is on all day, your cells are being told to eat all day, so they eat and you get fat. And because they are being told to eat all day, you also get hungry all day.
Diabetes: Because your insulin producing cells are on all day, they age faster and then wear out and stop producing insulin. Then you become diabetic.

Insulin stimulates appetite for several hours
Your blood sugar and insulin levels may be back to normal after 2 hours, but the insulin's hunger effects on your cells seems to last for some time longer. So it takes more than a couple hours for insulin's hunger effect to subside.

Why exercise helps with Diabetes
Exercise creates pre-demand for sugar that will absorb some dietary sugar before one's insulin comes on. So if you are trying to keep your insulin off, exercise is key. This is the easiest insulin cheat. Eat and then walk/exercise so that your muscles will use as much sugar as possible directly.

Moderate exercise for diabetics
A bit of exercise helps lower your blood sugar, but don't overdo it. Too much exercise wears your body out.

Insulin cheating breakfast
Stop eating at 6pm. Consume nothing but water after 6pm. For breakfast, have only eggs, meat, oils, fats, and sugar free greens. No sugars, fruits, or grains. If you want a cup of rice or buckwheat (low sugar grains) you must exercise first. Exercise before eating any sugar or carbs as this will create pre-demand for sugar that will help keep your insulin off. With this diet, it is possible to keep your insulin is off from 8pm to noon, or around 16 hours a day.

Sugar is not a good thing
We can see from the body's response to even small amounts of blood sugar, that sugar is a thing that the body tries to rapidly clear from the bloodstream because it is harmful. So are we wise to have the "sweet life"? Are we wise to dump huge volumes of sugar into our bodies? Sugar can be easily metabolized like alcohol, and like alcohol, one can obtain sustenance from it. But both are hard foods for the body to live on. Both wear the body out in their own ways — rather like Tobacco, asbestos, sunlight, and a host of other things.

Least hungry in the morning?
If you find it is easiest to delay your first meal despite it being so long since you have eaten, this is because your insulin is off. Or rather, this is because your body's eat hormone is off. If you are trying to eat less, stretch out this morning period where you insulin is off. Do this by not eating any sugar in the morning. And if you do eat a tiny bit of sugar with your breakfast (say from rice or buckwheat or other low sugar grains, try to exercise first and create a sugar deficit so your insulin does not come on from the tiny amount of sugar you had for breakfast. Also, if you are going to have a time to exercise and you are pre-diabetic, you should exercise close to your ultra-low-sugar breakfast, so your insulin can stay off for more of the day. This is also not-coincidentally a very good way keep your hunger/ eat hormone off for more of the day.

Why intermittent fasting works
It works because it takes hours for the insulin to wear off, and for your cells to stop trying to get more sugar. After this time period, you are no longer "insulin hungry".

High protein diets and weight loss
Maybe it isn't the added protein, but the reduced sugar and insulin that curbs your appetite.

Sub-insulin diet
This is where you exercise and eat no sugars, no alcohol, and limited carbohydrates. It is basically a no-sugar, low-carb diet, but as a way to slow the onset of diabetes, and even perhaps a way for some diabetics to live without injecting synthetic insulin.

Alcohol and sugar binges
There are lots of drugs that people can easily tolerate as 90 doses a month — but if someone takes all 90 doses at once, they will overdose… right? Better you have a drinks a day with your means than all 21 on Saturday night. And surely the same goes for sugar binges.

Fructose-free food?
One of the defining characteristics of modern processed food is how often the ingredients are turned into a fluid mix and injected or sprayed on a mold. Then the spray fluid is normally heated and cooked. But during the time it is in liquid form, perhaps we can neutralize or otherwise eliminate the fructose.

The thirst and frequent urination
These seem to be from the liver damage rather than the lack of insulin. Maybe the liver is chronically inflamed in some way not related to ASPAT/ALAT. Maybe it is chronically losing fluid as a result. What is different about the content of the urine of thirst and frequent urination people? That will be a good indicator for blood tests. We really should understand what is causing this inflammation. Is this just some form of early liver failure? In what ways does the liver fail and how does this lead to other diseases? zebra

Surgical liver remediation
Is it possible to transplant only the fructose metabolizing cells in a liver transplant? Can other liver cells be made to metabolize cells. What do fetal stem cells do in the liver? What do they do for the insulin-producing parts of the pancreas?

School poster
"Alcohol & sugar binges"
Feel 30 when you're 40,
—or—
Feel 50 when you're 40."

Metro Poster
Don't eat all you can.
Eat only what you need.
You'll live longer, and
feel and look better.

"You don't need that snack"
"You don't need that drink"
1/ This is exactly the opposite of what the all the metro ads say today. They say "Kit-Kit", or "Kalu-ahhh" candy alcohol. They say "aren't you hungry", and "it's Miller time".
2/ Maybe we should ban food and beverage advertising because it is unhealthful and contributes to obesity.

Food labeling
All potential toxins should be listed in grams or milligrams per kilo: fructose, sucrose, sodium chloride, sodium nitrate, caffeine, other stimulants, alcohol, artificial sweeteners. And this includes both natural and artificial toxins.

Caffeine pills
1/ A typical single espresso has about 30-40mg of caffeine, while an 8oz. drip coffee has about 80mg. So 1oz of espresso is equal to about 3oz. or 4oz. of drip coffee. The espresso is 4-times as concentrated, but a smaller dosage, which is sort of confusing.
2/ It today's modern world, it is surprisingly hard to get a precise dose of caffeine. The beverages tend to have variable caffeine content. And the pills are too highly dosed. After all, even if we break 200mg caffeine pills into quarters, it is still ~50mg.
3/ The caffeine pills should be sold in 10mg and 40mg tablets instead of only 200mg, with 40mg tablets intuitively equaling one espresso, or half a "normal" 4oz. drip coffee. This is because it really doesn't matter if people have to take five 1-cent pills to get 200mg.
4/ To help caffeine addicts dial their dosage down we will also have 10 mg pills. And both the 40 mg and the 10mg pills have grooves to make them easy to break into quarters. This is so caffeine pills can be used to dial-down one's caffeine intake.
5/ We should probably regulate caffeine content in our bottled beverages so this is more of a precise and stated amount in milligrams.
6/ All beverages and foods with caffeine or other stimulants should state their caffeine content in big letters on their front label. How many hundreds of millions of people have learned the hard way that Mountain Dupe or some other beverage has quite a bit of caffeine in it? By what right do these companies hide their caffeine content and harm people with stimulant drugs in this way?

Beverage	**Caffein content**
Coke	34mg
Diet Coke	46mg
Pepsi	35-38
Pepsi Zero	69mg
Dr. Pepper	41mg
Mountain Dew	54mg
Folgers Classic Decaf	2-8mg
Lipton black tea bag	55mg
Lipton lemon iced tea	21mg
Hershey's milk chocolate bar	9mg
Swiss Miss hot cocoa	3mg

(source: cspinet.org)

Understanding Caffeine
Essentially, caffeine blocks the chemical receptors for the system that calms the body. Caffeine binds to the adenosine receptors and fills them up. Thus adenosine (which is an inhibitory or relation neurotransmitter) can't bind and doesn't work. Thus the nervous system operates without its chemical "brakes" or slowing mechanism.

This explains how caffeine can be eliminated from the blood stream but the effects can last over a day. The caffeine apparently can stay bound to these receptors for much longer than it remains in the bloodstream . What is the mechanism the body uses to clear the caffeine from the receptors? Does caffeine age or damage the receptor cells?

Caffeine dosage is very front-loaded
If you have not had any caffeine for a month, the first few milligrams can produce a noticeable effect that can last for more many hours and prevent you from sleeping well later that night.

We grow less sensitive to caffeine
It should be studied in greater, but the first 5 to 10 milligrams of caffeine in new users seems to have quite an effect, while 95 milligrams in desensitized user might have no effect.

The small amount of caffeine in kids food
What about the small amount of caffeine in sodas, chocolate, and tea? What does 3mg of caffeine do to small kids and unborn babies? It really should be more common knowledge that kids are much more sensitive to caffeine, and that even cola and chocolate levels of caffeine are getting small children buzzed on speed.

A can of Coke has 34mg of caffeine
1/ People who would never give their kids an espresso are frequently giving them colas that have just as much caffeine.
2/ We should list the caffeine content on all caffeine containing ingestibles.
3/ With colas, we combine high-fructose corn syrup that wears out our livers and causes diabetes with gut stretching and hunger-inducing carbonation.

Is caffeine harmless?
What conditions correlate to higher caffein use. And if it isn't harmless, why do we let people spike sweet kid's drinks with it? Why do we allow minors to have it and start early on their lifelong speed habit.

Getting your kids to bed
If you are having trouble with this, you might want to eliminate all caffeine from their diet. Even the 3-milligrams from the hot cocoa in the morning may create problems that night, and perhaps even the next day. No chocolate, no tea, no colas.

Caffeine experiments
1/ What dose of caffeine produce an observable increase in activity for 2 and 3 year olds? I bet it is less than 3mg — 10% of the caffeine in a can of coke (34mg) and on par with hot cocoa levels of caffeine.
2/ What dose of maternal caffeine consumption produces a measurable increase in fetal activity under ultrasound. start with 1mg on an empty stomach.
3/ Take an isolated sleep-away school with no outside food and give half the kids a cookie with 3mg of caffeine daily and the other half get an identical cookie with no caffeine. The overall diet has no caffeine. How much less do the caffeine kids sleep? Does the caffeine affect their academic performance?

Advice for young caffeine addicts
Start with a few milligrams, a tenth or a fifth of an espresso and gradually increase your dosage. Try not to have more than one espresso until you are over 30 years old, and two espressos until you are over 40 years old. Save it.

Caffeine vs. Methamphetamine
There is probably more on the overlap than on the ends. So a few milligrams of caffeine now and then might produce 10% or 20% of the meth effect. Do we want our kids leaning even 10% towards the meth effect.

Sugar taxation
Maybe we should tax sugars so that sugar is no longer the cheapest part of the food. If we did that, then commercial food production will stop being about adding as much sugar as tolerable, and instead it will be about subtracting as much sugar as tolerable.

No trademark protection for tobacco
Why do we give trademark protection to tobacco products if they kill 480,000 Americans a year? Why do we spend taxpayer money to reduce the counterfeiting of tobacco products? Why not do nothing to help and slope the economy against tobacco.

Cancer-leaf
People are changing all sorts of words and pronouns for little reason today. So let's do this: Let's officially change the name of tobacco and start calling it "Cancer Leaf". Let's make this the official name of tobacco from now on. So the stores that sell tobacco must call themselves "Cancer Leaf shops". And the Packages must say "Cancer Leaf" instead of tobacco.

Free diabetes testing
The public would be financially wise to offer nearly free urine testing for changes in serum amylase (or lipase/proenzyme) levels. Then we can tell people that they need to cut back on sugar or there is a 50/50 chance they will develop diabetes. Then we can save billions on the fraction of people who change their lifestyle in advance.

The insulin cartel
1/ Insulin prices are up 10-fold in the past 25-years.
2/ Synthetic insulin is almost 40-years old and for this reason, no longer deserves intellectual property protection.
3/ The "big-3" insulin makers have grown fantastically rich exploiting their aged and now baseless cartel, and no longer deserve intellectual property protection.

Preventable healthcare cost in the US
Cost of tobacco healthcare ~$300 billion
Cost of diabetic healthcare ~$400 billion
Given a US GDP of 21 trillion, the cost of these two preventable healthcare problems is 3-1/3% of US GDP.

On average Americans each pay $909 on tobacco healthcare, and $1,212 on diabetes healthcare.

SISOP = sugar induced symbiot overgrowth pathologies
When our symbiots to get too much sugar, they tend to overgrow and cause problems. Now, because there are lots of people eating just about all the sugar their body can handle—all day long—there seems to be many people suffering from excess sugar simbiot pathologies like:
1/ Chronic acid reflux from sugar distorted esophageal flora.
2/ Chronic bloating and diarrhea from sugar distorted colon flora.
3/ Sinusitis from sugary and bacterially nutritious nasal mucus.
4/ Tinea and fungal infections from skin that has a bit too much nutritious sugar on it.
5/ Vaginosis, prostatitis, and perhaps bronchitis from sugary and nutritious body fluids. Also, excess sugar may lower vaginal PH, which reduces sperm lifespans and fertility with women who eat too much sugar.

Undigested gut sugar Syndrome
The presence of excess sugars in the gut causes bacterial overgrowth, inflammation and gas. In the top of the gut, a bubbling froth of these gas bubbles seems to be what drives acid reflex up. In the bottom half of the gut, the bacterial overgrowth causes gas, bloating intestinal irritation and diarrheal illness.

A sugar and fertility experiment
Since the time of ancient Athens, people have commented on how a rich life reduces fertility. Is there a sugar component to this? Here is an easy, cheap experiment. Locate a few thousand healthy couples that are trying to conceive and both are between say age 20 and 33. Does a totally sugar-free keto-diet in both increase the fertility rate for their age cohort?

Fertility and salt
Let's do the above experiment where the male takes salt. How much salt should a man take if he is trying to impregnate?

Fertility and copper
Do copper pipes reduce fertility? It is very easy to study this among couples trying to conceive. Do the people drinking tap water from copper pipe buildings have a harder time conceiving than those who never drink tap water. What about tobacco and alcohol and marijuana and obesity. How much do various levels of these affect our fertility? And given the insignificant cost of such studies, why doesn't our public health website have detailed information about this sort of stuff?

Things you might avoid doing
Maybe the public health departments should make lists of things that should be avoided and how dangerous they are, and why.
Skene's gland and fertility
This is the gland inside the G-spot. It is the equivalent of the male prostate gland which emits basic-PH prostate fluid to counteract the natural acidity of vaginas. Lots of prostate fluid makes the vagina more basic and improves sperm lifespans. What does the fluid in the Skene's gland do to vaginal PH and sperm lifespan? Does a swollen Skene's gland increase sperm lifespan and fertility? How does Skene's fluid get to the adjacent vagina? How long does it take? Can we make a synthetic fluid, a drug to simulate "Skene's fluid"?

Sugar & infections
1/ Feeding the pathogens we are trying to eliminate isn't really important when the treatment works immediately. It becomes more of an issue when the treatments take a long time to work. Here with these long-term treatments that only barely work, the relationship between the pathogen's reproduction rate and host's elimination rate is a critical factor. So even if not eating sugar only slows the pathogen's growth rate by 3%, this is still important for long-term infection treatments.
2/ It should be common knowledge that "Sugar Fasting" is good to do when you notice an infection. This can help the body eliminate many infections. Not eating any sugar for a few days should be in everyone's home remedy toolbox.
3/ Our bodies are full of genuinely helpful symbiots, quasi-symbiots and pathogens hiding in stealth mode. Sugar fasting often helps our bodies to regain control of many sorts of "symbiot uprising".

Sugar, symbiots, and aging
When the natural symbiots in our bodies overgrow, they start acting more like pathogens, and less like symbiots. In other words, they tend to harm our cells more. Thus they cause more inflammation and cellular aging.

So consuming too much sugar causes symbiot overgrowth, which leads to inflammation and faster aging of cells. And regeneration is limited for every living creature. Bio-mechanisms can only heal so many times before the recovered tissue starts to become aged and distorted… like a photocopy of a photocopy of a photocopy. This is why sugar is harmful.

Celiac disease
As the small intestine ages or perhaps ages faster due to inflammation, its crenelations shrink and so does its surface area, and its ability to absorb nutrients. Let's have a name that not only is easily recognizable here, but one that also conveys something about the condition to everyone who hears it. Let's rename this as aged gut syndrome, or AGS. Then people will focus on keeping their digestive system young by eating less fructose, and other harmful things.

Excess fluid implies inflammation
Excess fluid in an organ tends to indicate inflammation and cells being aged faster than normal. This seems to be so for one's nasal passages, lungs, gut, eyes, and even perhaps even one's salivary glands, and reproductive organs.

Emphysema
This is excessive aging of the lungs. Why don't we call it "Aged Lung Syndrome". What are the main source of aged lung syndrome aside from tobacco?

Aged liver syndrome
This is so much more accurate that "fatty liver". What are we doing? Are we trying to hide medical wisdom from the people? Let's call it Aged Liver Syndrome and then we can list all the things that people do to get aged liver syndrome and how bad medical science thinks each dose is. How bad is it to have 2-drinks, 4-drinks, 6-drinks, 8-drinks, 10-drinks, 200mg of acetominophin, 400mg, 600mg, 800mg, 50g of fructose in a sitting, 100g, etc. Lets get some estimated numbers so the people can know what is killing them.

Aged skin syndrome
This comes from excess abuse of the skin from either UV light or soaps or chemicals.

The Mexican flavor
What is the name of the micro-organism that gives Mexican corn its distinctive taste? Are we sure this organism is entirely benign? It sort of seems like this organism causes intestinal wear in some people. distinctive flavor and after-effects were covered up with some of the world's spiciest food.

Blistering diseases
Consider the many causes of people getting lots of blisters that rupture over time and produce a high viral load:
1/ The blisters rupturing over time is exactly what a Bath pathogen needs.
2/ Do the blisters contain a high level of pathogens? Which pathogens do this?
3/ We should all be aware of which diseases do this, so we can reduce further infections.

The modus operandi of Shingles
Diseases that infect the head, shoulders and upper back seem to be a thing that helped pathogens spread in a bat cave. Which "non-contageous" skin diseases are most common here and on the feet?

Psoriasis might be caused by a pathogen
Covid only kills a tiny sliver of the people it infects. What if the disease lost all virulence except for the 1-in-2,000 it kills? What if Covid evolved to produce no noticeable effects except for giving 1-in-2,000 people a terrible rash? Would we then regard the pathogen as contagious then?

When fruit or alcohol
has a laxative or gas effect
This means that your body is overloaded and unable to metabolize all the fructose or alcohol in your gut. So this nutrition continues down to where it does not belong and the excess nutrition causes lower intestinal bacteria to overgrown, which causes inflammation and fluid and loosening of the stool. The laxative effect is a symptom that you are consuming too much sugar or alcohol and are overloading your body.

Chimp livers and fructose metabolism
The differences should help us understand diabetes.

That which ages us
1/ Poisons like those in tobacco, heavy metals, and alcohol.
2/ Radiation like that in sunlight which kills our cells and causes them to regenerate.
3/ Pathogens that remain living in our cells, feeding off our cells. Pathogens like the ones that eventually cause dementia, high blood pressure, aneurism, and many other late life diseases.
4/ Excess activity or fuel consumption. The machine that is your body ages like a car. Many parts like the tires will fail due to age after a few decades, even if you seldom drive the car. They will also fail if you don't use your car enough.
5/ Sugars that tends to make symbiots overgrow.
6/ Fructose that wears out our livers.

Athletes
What health problems does each sport suffer from? We should make a matrix with the percent that go on to suffer each of many conditions. For example, among those who played high school football, what percentage over normal suffer back pain, or knee pain at age 60?

The Iron-men and ultra-athletes will be very interesting to study — particularly in the metabolic areas where they are worn-out after some decades. These guys will help us determine an upper range for what constitutes a healthy activity level.

Fatty liver + low hormones?
The liver makes all the Cholesterol one needs … but this is of course, only when it's healthy. Unhealthy "fatty" livers sometimes do not make enough cholesterol. Then the body can't produce enough hormones. This because Cholesterol is an essential ingredient in the production of dozens of hormones including Serotonin, Dopamine, Estrogens, Progesterones, "Testosterones", and Insulin.

So, if a hormone replacement patient has a damaged liver, and the patient has low overall Cholesterol levels, and the condition is not urgent, perhaps it is wise to first try increasing dietary cholesterol to see if the low hormone levels are actually a Cholesterol nutrient issue.

These people all might want try eating a 2 or 3 eggs a day to see if their hormone deficiency is from Cholesterol malnutrition. Maybe their problem will go away with with something as simple as having eggs with breakfast.

Damaged livers drive towards diabetes in two ways
On one hand, our damaged livers harm our insulin producing cells by trickling-out glucose all day — that is to say, glucose metabolized from the fructose we eat.
On the other hand, our damaged livers don't produce enough cholesterol, and this starves our insulin producing cells of something they need to function.

Cholesterol is a nutrient like vitamin D
Fructose is a toxin, like alcohol.

Eggs for breakfast, then 1 or 2 meals
One egg has 190 mg of cholesterol . What happens when pre-diabetics eat 2-eggs a day, in the morning, maybe 3-to-5-hours before the insulin is needed for their big lunch meal? Does having a big supply of cholesterol improve insulin levels? Does this slow the onset of diabetes? Does it help if the insulin cells are well nourished with cholesterol when they must come on? How much lead time is optimal? It would be such an easy thing to study.

Eggs for your first meal
Perhaps in some people, morning cholesterol is needed to help the body to make hormones that help metabolize the other food and also to get through the day.

Diseases associated with low cholesterol
Which health conditions are associated with low cholesterol? What percent of these conditions are helped by increasing dietary cholesterol?

All day sugar / all-day cholesterol?
If all-day sugar causes to produce insulin all-day — does all-day insulin tend to be a cause of all-day high cholesterol?

Cholesterol and calcium
These are the two main ingredients in arterial plaque. Are we absolutely sure that cholesterol alone is the main cause? Maybe both are needed. Or maybe both are layered up by a third thing, namely a bat-borne blood pathogen that evolved to build shields against the immune system for itself here and there. Also, this way, more of the blood vessels of the animal will carry the disease to the predators eating the animal's carcass. Also, perhaps arterial sclerosis is not so much a thing of a meat-rich diet, but more a thing of a rare and undercooked meat diet.

Eggs are eaten early in the day
in most parts of the world
In most parts of the world, people seem to benefit from this. It was either chosen by preference, or it evolved through natural selection. Either way we should take a good look at the ideal dosage and timing of our supplemental cholesterol. It would seem that some liver damaged people could benefit from a small amount of dietary cholesterol in their diet. Medical science should know how much is ideal.

Cholesterol: another harmful nutrient
It is quite easy to overdose on most vitamins and nutrients. Surely the human body can only metabolize so many milligrams of supplemental dietary cholesterol per hour. How much dietary cholesterol doesn't raise blood cholesterol in a bad way? How much dietary cholesterol can the body metabolize before the nutrient starts causing trouble, like say building up in the arteries? Medical science really should study supplemental cholesterol dosage in healthy and liver damaged people.

One egg has 190 mg of cholesterol
Chicken broth has 7mg of cholesterol
In some places, lard and eggs are a folk remedy for keeping people a bit warmer when it is very cold. But cholesterol also seems to help people with fevers to maintain body temperature a bit better and deal a bit better with the stresses of infectious disease.

Breeding the fructose down
Nearly all fruiting plants offer a mix of fructose and glucose. Some have more glucose and others have more fructose. We should be able to breed the harmful fructose out of our fruits and crops entirely. Basically the plant evolves towards more glucose when the plant must be entirely beneficial to it's symbiot animals. The plant evolves towards more fructose when the plant benefits from slowly poisoning the animals that eat too much its fruit.

The fructose makes the greediest fruit-eaters fat, slow, and torpid, like we see with so many humans. Then they get eaten and then their fat carcass often becomes valuable fertilizer for the plant. This is similar to how many fruiting plants evolved to support fruit that naturally ferments. This leads to drunken, and later severely hung-over prey animals… impaired to the point they often become prey and fertilizer.

Don't eat too much of one thing
Evolution always greatly rewarded plants that got animals to eat only a little bit of their fruit and seeds. But evolution also tended to punish plants that let themselves be taken advantage of by their symbiots. So many fruits are fine in small amounts, but if you live off of them it will be bad for your health over the long term.

Vitamin A and light sensitivity
Is light sensitivity sometimes the flip-side of some forms of night blindness? Is the same vitamin deficiency causing our pupil to become inflexible, or non-responsive in both directions? Is light sensitivity a clearer indication of vitamin A deficiency? Maybe we should say both things are indications of a vitamin A deficiency.

Dry eyes and sunlight
Why do my dry eyes at night get all better when I am out in sunlight during the previous few days? Here we recall how most pathogens find even ambient sunlight deadly. Which eye conditions are improved by regular exposure to sunlight?

Tobacco, alcohol, fructose, & sunlight
These are the four big toxins in our lives today, perhaps in order of how much harm they do to us.

All the ways you don't feel it
when you are hurting your body
We should make a list and repeat this list over and over in our schools. We should teach kids about repetitive brain injuries instead of having brain injury sports as national pass-times. And we should teach kids about binges, and stop all media glorification of binges and intoxicated celebration parties.

Fatty liver is a bad term
1/ Fatty liver is an anesthetic term that hides what a bad thing it is to have a damaged liver. Better to say "liver damage" or "damaged liver".
2/ The fact that so many people have a fatty liver in the modern world also is an anesthetic. This should not be considered normal, but a huge submerged problem.
3/ Kids should be taught the many health problems that follow from a worn liver.

Informing people of liver damage
As a matter of public health in helping people to take care of themselves, a fatty liver diagnoses from the ultrasound techs should come with some numbers:
1/ The percentage of liver damage estimated.
2/ The life expectancy is estimated based on the percent of liver damage, assuming clean living in the future.
3/ The life expectancy is estimated based on the percent of liver damage, assuming more of the same lifestyle with regard to alcohol, fructose, and drug consumption.
4/ All this is automated and all the tech does is enter a two digit number estimating liver damage to areas in percent.

Medical ratings
There should be an objective scale 1-100 for communicating how urgent it is that treatment be undertaken. There should also be ratings for contagiousness, and prognosis for the very ill.

Pain meds and alcohol
There should to be more public awareness of the liver damage caused by taking over the counter pain meds with alcohol.

The active high-sugar lifestyle
Maybe in addition to our excessive sugar intake, our activity levels are also excessive. What if the way to a long life is to avoid sugar in addition to alcohol, and getting only moderate exercise. What if it wastes precious life energy to develop too much endurance. What if excessive exercise or work in youth shortens our lives? What about developing large muscles. Does that wear a person out too?

How much is ideal
How much exercise is ideal for which age ranges? Let's use our phone pedometers and a computer and then starting in 20 years, we can see how long people life according to daily activity level and age. People should know this. The public should make this available. Also, if we are going to be tracking everyone's drug and alcohol and cigarette use, let's do a similar thing for these.

Your "acid valve" needs time to heal
If you burn the valve between your esophagus and your stomach (you LESV "lower esophageal sphincter valve")… if you burn this with stomach acid, it may take 3 to 10 days to heal and grow leakproof again. That is if things have not degenerated too far already. Whenever people get acid reflux, they need to stop the burn right away to stop the damage—which will only cause more scarring and more leaking and more burning. So:
1/ Take some sort of fast acting antacid to neutralize the acid and stop the burning.
2/ Avoid whatever it is that you ate that is giving you acid reflux.
3/ Reduce your sugar, carb and alcohol intake.
4/ Stop drinking fizzy drinks including beer.
5/ Don't lie down on a full stomach.
6/ Try to start sleeping on you left side if you can. Your gut is not symmetric and sleeping on your left side will keep your LESV more at the top of your gut.

Acid reflux is degenerative
Another thing that needs more public awareness is how acid reflux is degenerative. People should know that every time they burn their LESV, it grows back a bit more scarred, distorted and leaky. Then in a great many people their "acid valve" gets so scarred that it eventually stops working and acid leaks when they lie down. Currently there are 15-million Americans that suffer from daily acid reflux. That is about 4.5% of the population.

Don't start acid reflux with baby feeding
Babies should be fed left breast, right breast. This is so the baby's acid valve (the lower esophageal sphincter valve) is at the top of its stomach when its belly is full. Babies should finish feeding on the right breast, and on the baby's left side, and at a slope so the milk can exit their esophagus. Just remember the army chant: "Left-right, left-right, left-right".

Is some acid reflux from a calcium deficiency?
Eating calcium sure stops acid reflux. Maybe some part of acid reflux is from a calcium deficiency. Maybe in some people it is the body saying "eat more bones". Also does magnesium increase the effectiveness of calcium for stopping acid reflux?

Magnesium malnutrition in kids
Magnesium is needed (along with Vitamin D) to use dietary calcium. Maybe in some children, their brain burns too much magnesium and there is not enough for proper calcium absorption. We should probably consider testing kids for both calcium and magnesium levels. It is an easy test.

Calcium, Vitamin D, and magnesium for kids
1/ Calcium, Vitamin D, and magnesium supplements cost nothing and are easy to take. We will recover our money and efforts right away from fewer broken bones and other health issues in childhood.
2/ The Calcium is calming, and the magnesium will probably improve brain function and learning, So we should probably give These to kids when they arrive at school, along with some egg bread lightly sweetened with glucose.
3/ We should load people's bones up with calcium, starting in youth, so they have lots of calcium in old age. This will save the healthcare system much money in broken bone repair costs.

4/ Calcium, Vitamin D, and magnesium should probably be drummed into young people several times in youth so it gets through and is better remembered. We can tell all kids how it will make them a bit taller and straighter and give them stronger bones and muscles. We can also tell the girls how it will make their babies will be stronger when they are older and have babies.

Things to avoid too much of
Most people know to avoid too much alcohol, fat, salt, sugar and sun. But what about acid food? How does too much vinegar and sour bread and lime juice age the body? How much is too much? How much is not enough?

Osteoporosis exercises from youth
The three main areas of osteoporosis weakness are the hips, back and wrists. The bones in all these areas are easily strengthened by the various types of exercise coupled with proper intake of calcium, magnesium and vitamin D. This knowledge is far more important than teaching kids to play head-ball in school.This should be drummed into kids, not head-ball. We might also add exercises to strengthen the various problematic tendons of the body.

Spoofing pathogens into remission
It isn't hard to imagine that some pathogens respond to low vitamin D levels (or serotonin levels, or dopamine levels). We really should figure out how pathogens know to re-activate when their hosts are stressed and de-activate when their hosts have recovered. Then perhaps we can spoof the pathogens into remission. Maybe this is what a single cortisone dose produces sometimes.

Calcium constipates and magnesium is a laxative
These two minerals go very well together.

How long do pyrethroids last in your blood?
1/ Pyrethrum binds with cloth and stays toxic to mosquitos for 6 weeks. So it seem like Chrysanthemum evolved to bind-with and stay in the body for a long time.
2/ We should study how the pyrethroids bond to the body, if it does that. If we understand this, we might be able to use much lower doses of “blood insecticides”.
3/ It seems like the Chrysanthemum pyrethroids bind with blood cells. Do they do this?
4/ What other cells do Chrysanthemum pyrethroids bind with? Can we use them as a spray-on binding agent for say a wound antibiotic, or an inhaled lung antibiotic. Or perhaps they are good for chemotherapy drugs that can be injected, or painted on tumor margins.
5/ Does taking Chrysanthemum repel insects, or keep people from being bitten?

Insect repellant X-prize
1/ The world could use a more effective, longer-lasting insect repellant that doesn’t stink like deet (diethyltoluamide).
2/ Everyone knows diethyltoluamide by its trademarked name deet. So deet can no longer have a valid trademark as it has become the generic term for diethyltoluamide.

Chrysanthemum evolution
1/ The plant was under pressure to evolve maximum insect protection with minimum harm and dosage.
2/ It was under pressure for its insecticide protection to bind and last as long as possible.

What Chrysanthemum will breed
If people start using it, mosquitos, fleas and ticks will start to avoid our species and any other species that uses it.

Drug education videos
1/ The CDC should make user videos for all prescription and non-prescription drugs and treatments.
2/ Everyone has to watch the appropriate video before they can buy the drug. So the education part of dispensing drugs is automated and much faster and easier. It can also be made as effective as necessary through repetition and testing
3/ Because all patients are well informed, more drugs can be made available over the counter.
4/ This is exactly what is needed for over the counter pain killers. There needs to be more public awareness of the liver damage caused by taking too many over the counter pain meds and particularly taking them with alcohol.
5/ When people want to buy certain medicinal herbs, they should be required to take the drug user’s tutorial and pass the test. Just like with pharmacy drugs.

National prescription database
There should be a national database where everyone’s pharmaceutical records are kept and tracked. This is to flag “overlapping” prescriptions, and prescription drug abusers, as well as adverse reaction trends. At least we should be doing this for older patients and drugs prone to abuse or misuse.

National infectious disease database
Every time someone tests positive for an infectious disease, it should be recorded and matched with their problems in late life. Then we will know which late life problems are associated with which pathogens.

Worldwide drug SKU numbers
All drugs should have a worldwide SKU number 123-456-789 for each chemical compound and dosage. This in addition to the drug’s name. Also under this scheme, over 99.99% of numbers will not be valid.

CDC opt-in email newsletters
This is where a doctor signs you up for CDC updates for whatever conditions you have. Then you get the CDC newsletter which is free of ads and bias (hopefully). This has updates on all the new and in-progress drugs and treatment changes for whatever condition the person has. With this system, we can totally eliminate all costly drug advertising and save piles of healthcare money.

The Elizabeth Holmes machine
Go look at someone using a home insulin tester, and pay attention to the remarkably small amount of blood needed for this. Then tell me that we will not be able to use 8 such tests on a single capillary-action line. Then tell me we will not be able to have up to 8 capillary-action lines for up to 64 tests from a single drop of blood. That doesn’t seem so hard to do. The world needs exactly the machine that Holmes was working on.

This technology looks like a good thing for improving public health. Imagine if people could run inexpensive panels for

themselves. Then people will be able to detect their diseases earlier, and get treated earlier.

Telemedicine
Telemedicine seems like it is becoming mostly a thing of patient empowerment, and patent DIY through things like cheap and easy blood screening. The convenience of self-testing will surely get many people testing themselves more often and sooner.

People should not own their lucky immunity
If someone's body has the magic antibodies, or cells that the whole world needs, these should belong to everyone. The person should get a generous payment, but there should be no zillion dollar payments to them.

Pulse wave velocity
Maybe PWV gets faster with age because the hose gets softer. Do pulses move faster through softer or harder latex hoses filled with water? Also, perhaps the inelastic blood vessels wind up a bit stretched and this speeds up the flow.

Anti-biotic delivery to the prostate
Is this improved by a drip to the inferior vesical artery? It would appear that we can achieve significantly higher doses delivered to the prostate this way. Maybe we can end the chronic bacterial infections this way.

Prostate disease
Does some prostate disease come from the colon? Is some prostate disease actually from intestinal bacteria out of balance? Does prostate disease correlate to certain intestinal bacteria profiles?

Low flow toilets tend to be unsanitary
We've all seen someone else's brownish water. How often is there water that only looks clear? And of course, there is the dreaded "splash-back"… The most important part of the toilet design is it's sanitary-ness. Does any part of the waste of one person contact another? Having a little more water in our sewage system is utterly unimportant in comparison.

Regularized healthcare pricing
This is where government sets standard prices for all procedures, then each facility offers its services as a percentage of this rate across the board. So some providers might be -17%, while others might be +29% — meaning that one is 17% less than standard pricing across the board on all procedures, and the other is 29% over standard pricing across the board. After this, there are no discounts, no negotiations, and fewer surprises. Everyone pays the same amount for the same procedure at the same healthcare facility.

HIV drugs for all — at the same cost
The amount of money that drug companies are making from HIV drugs is quite constant. What if the rich countries of the world got together and assigned a realistic sale value to these drugs and bought the patents for fair value under eminent domain? Then we cancel the patents and let any drug company make these otherwise expensive drugs as inexpensive generics with no intellectual property rights payments.

The result of this is that for the same cost, everyone with HIV gets drugs instead of only the people that can afford the expensive drugs. Also, because we are talking about an infectious disease, and the untreated are constantly causing new infections, the current approach is stupid.

Dental hygienists
Dentistry would work better if people went to see a dental hygienist for their annual/biannual checkup and cleaning, including x-rays. Then if the hygienist recommends a visit to a dentist:
1/ We can be more certain that this is an unbiased recommendation.
2/ We save lots of dentist time.
3/ We slash the cost of dentistry.
4/ We can track dentists objectively for how often they recommend various procedures.

Dermatology Nurses
And once he is a dermatology nurse first like with a dental hygienist. These are allowed to do skin biopsies, To freeze small damaged areas of skin with liquid nitrogen, and perform minor sink surgeries like mole removals up to 2-cm in diameter. They can also prescribe a number of prescription-only skin creams. Perhaps one needs a prescription to see a real dermatologist.

A democracy of doctors
making healthcare decisions
What if we had a sub-democracy of doctors? Each doctor in the nation has a vote, and they vote their opinion about various healthcare policy matters. We need this right?

Healthcare inclusion vs. quality
Today about 60% of American women get regular Pap smears and 40% do not. A large number more would go if we also had inexpensive technicians doing Pap Smears. These might be trained as well as a dental hygienist. And because the training is easy, there are lots of these technicians. So same day appointments are the norm, and it costs as much as a hair cut. Or perhaps the healthcare system pays for Pap smears, sample pathology and cryotherapy by technicians, so that the greatest share of women get tested regularly and many cancers are prevented by the healthcare system.

Medical accuracy can't beat inclusion
Until everyone is being treated, it is hard to justify specialists or even doctors doing procedures. Whatever lives the expertise saves, getting everyone treated often helps many times more patients
Step 1: Everyone gets treated or screened.
Step 2: We squabble about the qualifications of the healthcare people doing the treatment.

Regular self-testing checkups
In addition to doing regular extensive blood testing given how easy this is, we should also be doing full body scans of various sorts, blood pressure, temperature and urine sample, blood oxygenation, everything. People go to a standard testing facility by themselves for the assembly line. Then they ID verify, get a number and a photo. If something is outside of the ranges, then they have to follow the instructions and do intake for that problem code.

Regularly testing and scanning people will surely be the #1 path to early detection. We can build this industry with new people. We can grow this new technician-based industry in mass medical examination — we can grow it up alongside our existing treatment apparatus — which will soon start their patient relationship with giving each patient a second opinion.

We will have lengthy web videos that explain all the common abnormal results and what they mean. We will also have lengthy FAQs that answer all the commonly asked questions. But we will save more lives with this approach. We will also help keep our healthcare system honest. All this new system does is spot problems and send people on their way into the healthcare system. This system preserves health better, and at the same time it costs less.

Disaster anesthesia certificates
Disaster suturing certificates
Disaster aid certificates
Disaster logistics certificates
We might find this sort of training valuable.

Fired due to COVID??
The healthcare people fired over COVID should join together to start new employee-owned hospitals of skeptical healthcare professionals. Talk about cred. These are the people I would trust, not the obedient robots that did what they were told.

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A healthcare allocation system
We will list all common medical procedures and prioritize them in terms of bang-for-the-buck, and how efficiently they use scarce healthcare resources. We also have multipliers for the age and risk factors of the patient. Then we charge luxury tax on inefficient and cosmetic procedures. We then use this money to pay for a level of efficient procedures offered for free.