Long-Term Care COVID-19 Commission Meeting

Dr. Diana Anderson and Ansar S. Ahmed
on Wednesday, February 10, 2021

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MEETING OF THE LONG-TERM CARE COVID-19 COMMISSION

--- Held via Zoom Videoconferencing, with all participants attending remotely, on the 10th day of February, 2021, 9:00 a.m. to 10:00 a.m.

BEFORE:
The Honourable Frank N. Marrocco, Lead Commissioner
Angela Coke, Commissioner
Dr. Jack Kitts, Commissioner

PRESENTERS:
Dr. Diana Anderson, MD, ACHA, Founder, Dochitect Principal, Jacobs Geriatric Neurology Fellow, VA Boston Healthcare System & Harvard Medical School
Ansar S. Ahmed, P.Eng. Vice President, Business Development Jacobs

PARTICIPANTS:
Alison Drummond, Assistant Deputy Minister, Long-Term Care Commission Secretariat
Ida Bianchi, Senior Legal Counsel, Long-Term Care Commission Secretariat
Derek Lett, Policy Director, Long-Term Care Commission Secretariat
Jessica Franklin, Policy Director, Long-Term Care Commission Secretariat

PARTICIPANTS: (continued)

Adriana Diaz Choconta Senior Policy Analyst Long-Term Care Commission

Rose Bianchini, Senior Policy Analyst, Long-Term Care Commission Secretariat

Angela Walwyn, Senior Policy Analyst, Long-Term Care Commission Secretariat

Lynn Mahoney, Counsel, Gowling WLG

ALSO PRESENT:

Helen Martineau, Stenographer/Transcriptionist

--- Upon commencing at 9:00 a.m.

IDA BIANCHI: Good morning, Commissioners. This morning you will be hearing from Dr. Diana Anderson and Mr. Ansar Ahmed.

Dr. Anderson is a health care architect. She often refers to herself as the Dochitect, and has a website of that name. She is an internist and a geriatrician.

Diana combines educational professional experience in both medicine and architecture.

She's a co-founder of the Clinicians for Design Group, an international network of leaders that seek to inspire and accelerate the design environments and systems.

She is also a principal at Jacobs, a firm of engineers, architects and scientists, and provides thought leadership at the intersection of design and health.

Currently she's a Fellow in geriatric neurology at the VA Boston Health Care System where she studies the impact of the built environment on cognitive impairment.

Mr. Ahmed is an engineer and the vice-president at Jacobs, and Market Lead for

the health care sector in Canada. He's an engineering professional with over thirty years of public and private sector experience delivering infrastructure projects across Canada.

He worked for twenty years in the Ontario Public Service, including as a Senior Manager in charge of intergovernmental affairs, strategic policy issues and media.

Right. So they both have presentations for you and I understand that Dr. Anderson is going first. So without further delay, Dr. Anderson, would you like to start your PowerPoint presentation?

DR. DIANA ANDERSON: Please, first name Diana. I just spent time in California and it's all flip flops and first names.

Ansar, would you like to go first?

LEAD COMMISSIONER FRANK MARROCCO: We would like to spend some time in California but it might be controversial for us to do so.

ANSAR AHMED: Thank you very much for that, Ida, for that introduction. Hopefully you can see my screen.

LEAD COMMISSIONER FRANK MARROCCO:

We can.

ANSAR AHMED: After those introductions you'll know that I'm going to keep my comments rather short because I think it's actually Dr. Anderson's area of expertise that is going to be the most relevant to the Commission.

I'll just start off by thanking the Commission for this opportunity to come and speak to you, for Dr. Anderson and I to make this presentation. And on behalf of the leadership team at Jacobs I just want to convey our gratitude for the work that the Commission and Commission staff are doing on behalf of the province and on behalf of all Ontarians.

So hopefully what Dr. Anderson and I have to say here today will help to inform your work and lead to some successful outcomes.

I'm going to be looking over because for some reason I have three monitors and not a single one lines up with my camera.

I think the key message that's going to come across today is that we're at a very unique point and time right now, given the situation that the Province finds itself in, and

particularly in the long-term care sector, there is a unique opportunity. Because there's an alignment of purpose and an alignment of certain intentions on behalf of everyone. I don't think anyone is disputing what has occurred in the long-term care sector, it's just a question of -- from our part, what we go about -- what we do about it.

And I think one of the challenges that we have, frankly, is that a lot of the public discourse has been, as I mentioned to Ida before, is -- has been in looking in the rear view mirror. And unfortunately when passions run high there's always this move to try to assign blame.

And that's really not where we're coming from, we're coming from the perspective of looking at where opportunities exist to make things better, and in particular when you consider the level of investments that are planned by the provincial government. I mean, it's no small undertaking to say that you're going to spend in the billions to try and improve a situation in long-term care; and we want to make sure that that leads to making the

right decisions and the right investment choices, and that they're being targeted into the right areas.

And with that in mind we actually, within Jacobs, held a round table back, I guess it's about two and a half weeks now on the 21st, where we brought together some of the thought leadership, colleagues of Dr. Anderson, and we held a round table and we ostensibly referred to it as "Reimagining Elder Care in a Post-COVID Ontario". And the session went very well.

We've mentioned it to Ida and her team and we're looking forward to some of the initial outcomes being properly framed hopefully by the end of this week. And we'll be in a position to share that, those initial findings with the Commission formally hopefully next week.

But in the meantime, some of the things that did come up to the 21st --

LEAD COMMISSIONER FRANK MARROCCO:

That would be very helpful from where we're coming from, Mr. Ahmed, so thank you for that.

ANSAR AHMED: I appreciate that. That's great.

And at this point I'm going to apologize because this I can't do off memory so I'm going to actually go to the slide here.

So a couple of key takeaways for us really was the fact that there was a need for balanced investments. One of the key things we keep hearing about is certainly investments within the sort of brick-and-mortar solutions of the long-term care homes.

And one of the key points for us was the need to make sure we balance, or at least keep in mind what solutions can be had from the home-care models.

And also there's a whole suite, which frankly I wasn't aware of, but there's a whole suite of inter-regionary solutions, particularly Dr. Anderson is aware of them and brought them to light from her experience in the States. Things like the all-inclusive care models, the PACE models and the adult-day-health and care-services model. So those are things that we think should certainly be looked at.

The importance of maintaining the characteristic of home, and I fall into this trap myself often as well in referring to those

who are in the long-term care homes as "patients".

And some of them -- these are in fact their homes. They have given up their previous life and moved themselves into these homes. And it's so important to ensure that, particularly now, as you see more hospitals coming in and taking over long-term care homes that they don't inadvertently slip into more of a clinical setting as opposed to maintaining that sort of -- those sort of characteristics of home, which are so important.

Acknowledging the fact that a large number of people, and I don't have the data to -- that I can present right now, but certainly anecdotally a lot of people that live in long-term care homes frankly don't want to be there. If things were left to them, if they had a viable choice or an alternative they certainly would prefer to age in place in their own homes that they've known.

We looked at -- now for my part I'm the Vice-Chair as well of the Board of Directors of Southlake Regional Health Centre. And we were -- on behalf of the Province we piloted

Southlake@home, which was a home-based care model.

And I think the Commission actually spoke to Shirlee Sharkey from St. Elizabeth Health, SE Health.

LEAD COMMISSIONER FRANK MARROCCO: We did.

ANSAR AHMED: And she was pivotal in terms of working with our CEO in driving that model. And we piloted it and it was extremely successful.

So we're talking about scaling up those sort of models to see what can be done in terms of age-in-place options for the elder community.

The emphatic care model, and really this sort of dovetails in a number of different areas. For me, from an engineering perspective and from an infrastructure delivery perspective, it really comes down to what do you reward as you try to push these investments out the door?

So we certainly understand that underpinning, you know, $1.75 billion investment is going to be a whole bunch of procurements to try to get this money in these investments out

the door. Well, what do you reward? Are you rewarding solutions and approaches from design builders that basically continue to perpetuate that overdensification of these care homes? Or do you reward the empathic care models that actually head you in the opposite direction and put primacy to the individuals and to their care?

IDA BIANCHI: Ansar, can I interrupt you for a minute and ask a question?

ANSAR AHMED: Absolutely.

IDA BIANCHI: Can you clarify what you mean by "empathic design concepts". I'll tell you that the Commission's heard about models like the butterfly model. We've heard about them as culture-change-movement models, that's how they've been described to us by other folks that have come before the Commission. Is that what you're talking about?

ANSAR AHMED: So I'll let Diana speak to this. Actually I won't say anything I'll let Diana speak to it.

IDA BIANCHI: Okay.

DR. DIANA ANDERSON: Ida, I think that that's appropriate. And I think empathic design

encompasses essentially designing with the users in mind.

And Steven Verderber, from the University of Toronto, mentioned this and is quite a big supporter. Here at MIT at the age lab they have an aging suit and an architect or an administrator can put that on and really experience what it's like to age, see poorly due to cataracts, have aching joints, things like that. And I think that really gets to the crux of empathic design, really understanding the users that are going to be using the space.

IDA BIANCHI: So it's something bigger than the models we've heard about.

DR. DIANA ANDERSON: I think empathic design is encompassed in something like the butterfly model that really exemplifies feeling over thinking, which may be something that gets lost with aging and cognitive impairment. The feeling is still there, and empathic design would appreciate that and highlight that.

IDA BIANCHI: Thank you.

ANSAR AHMED: I think the best sort of correlation I can give is to the AODA, the Accessibility for Ontarians with Disabilities

Act. And one of the things that as engineers, as practitioners we find is that many people are excellent at looking at the Act and following the Act, the stipulations within the Act.

They don't truly understand. They don't truly feel what it feels like to actually sit in a wheelchair and try to navigate downtown Toronto and the new builds. And that's what I think empathic is trying to say, until you are able to put yourself in the perspective of the end users you really haven't grasped what the outcome of your design decisions are going to be on their life going forward.

COMMISSIONER JACK KITTS: Let me just ask a question about that.

ANSAR AHMED: Absolutely.

COMMISSIONER JACK KITTS: It's probably more designs and models as opposed to design or model. Because the patient, or the resident, or the person in long-term care requires anywhere from just assistance with activities of daily living to fairly complex healthcare, and everything in between.

And so we're struggling with the resident versus patient; the facility for

healthcare versus the home, the comfortable home. And we actually discussed the other day that the model of care must be multiple models to meet the needs of these multiple patients.

And we're wondering if it's time and we're at a crossroads where the patient, and this is what we've heard and I'd like your views on it, Diana, that 85 percent of patients in long-term care today, I don't know whether it's Ontario or Canada, have a cognitive dysfunction, some degree of cognitive dysfunction and more than 70 percent have dementia.

Is it out of line to think that if you design these homes and staff the staff with skill sets to manage the patient with cognitive dysfunction you would at least have a model that was consistent for 85 percent of the residents?

DR. DIANA ANDERSON: Yes, and I heard that in Quebec it's about 80 percent so that sounds about right for Canada as a whole.

I would agree with that, with the caveat that as we move forward with our design concepts we need to align them in tandem with the clinical advances.

Here in the United States we are on a

quest for the disease modifying therapy for Alzheimer disease in particular. So while I think, yes, that would address a majority of people in these environments I think we also have to be cognizant of the fact that I hope one day soon we'll be able to potentially treat cognitive impairments, and how will the built environment adapt to that advancement?

But I'll show some examples of dementia villages and methods we've used in long-term care to help with cognitive impairment so that my be helpful.

COMMISSIONER JACK KITTS: Thank you.

ANSAR AHMED: And then the last point really is to say that with these investments that the government is taking on that we think there's an overarching need to take a programmatic approach.

I think the task at hand is, frankly, too big and the outcomes too sensitive to be taking a one-of, iterative type of approach. And rather I think it's time to step back and say, okay, at a program level, much as you'd do with other infrastructure assets such as schools or hospitals in general, or frankly even bridges

and roads, step back, take a programmatic approach and ensure that high level consistency.

In terms of investment decisions, I think the key thing here was that there was an urgent need to pivot. Again, there's a lot of investment dollars that the province wants to push out the door. And so far what we've seen from the procurements that have come out already, they seem to be taking sort of a -- and I apologize if this comes out negatively, it's not intended that way, but a bit of a scattergram approach. And that might work in certain circumstances but not when you're talking about a sector that's so outcome driven as long-term care, where there's a need to get into each one of these areas.

And again, I don't want to take away from -- time away from Dr. Anderson's presentation so I'm going to just leave this up for a moment, and this will be available to the Commission afterwards.

And lastly, just for your consideration, is some of the thoughts that came out from the round table participants talking about some of the areas that need some urgent

attention. Again Dr. Verderber's concept around the importance of architecture and design to healthcare outcomes. I think it's just so important, and that frankly underpins a lot of what Dr. Anderson is going to be speaking about.

So with that, Diana, why don't I stop sharing my screen and I let you take over.

DR. DIANA ANDERSON: Everything good with the slides?

LEAD COMMISSIONER FRANK MARROCCO: We can see it.

DR. DIANA ANDERSON:

So thank you, Ansar. I think that was a great introduction. I'm very excited to be here and talk about my career's work of blending these two, especially in the area of long-term care and geriatrics, which is my specialty in terms of both realms.

And I'm very pleased that the Commissioners think that architecture and the built environment is important. And I'd like to convince you in the next few minutes that architectural design is a determinant of health and a very important one.

At the University of Toronto Medical

School we have a course called "Determinants of Community Health" and not once did we touch on the built environment. It's really been underlooked in terms of its importance, I believe.

So I have a number of images and some empirical data to show you. Please feel free to interrupt as we go. So I ask myself a lot through my lectures and my writings either how we can bridge the gap between these two fields of both medicine and architecture? I do think architecture and design are key components of health, as I've just said.

But how do we bridge the gap between the perspectives of those who design them, the architects, the politicians, the people who fund these buildings, and the people who inhabit them? And I think that's a real challenge. And this hybrid model, I think, can help trying to blend career models to understand both fields.

I also think about the moral imperative we have to make sure that these buildings do no harm. I've very cognizant of doing no harm as a physician, but as an architect I think inadvertently our buildings

can cause harm.

And I did a bioethics fellowship here at Harvard a few years ago, not as a third career but really as a glue to sort of solidify architecture and medicine together as a model. The bioethics of built space has largely been understudied and really overlooked, I would say, and COVID has brought to light the impact of buildings on people's health.

And so I thought we should go back in history just for a couple of slides. Because it's interesting to think that medicine and architecture have actually converged at various points in time. And I think probably the earliest example is the 1800's model of the asylum here in the United States, this was in Massachusetts, no longer exists.

But the model was developed actually by a physician, Dr. Thomas Story Kirkbride. And he thought we needed to reinvent how we care for the mentally ill. And his idea was to remove them from their home, yes, to remove their autonomy, but really with the idea of beneficence, of doing good. And he thought the only way we could treat them was in a place that

had natural light, ventilation, sunlight and land.

But interestingly, first of all, a physician came up with this idea and worked with the architects, which I think is very much needed going forward in long-term care. But if you look at the floor plan, and I'll use my cursor, you can see it's a sort of narrow, double-loaded corridor with operable windows, also very good for infection control and also very good at bringing staff and patients natural light and fresh air.

And then in the early 20th century we see the tuberculosis sanitorium model. And this was a paper I wrote for the CMAJ, the Canadian Medical Association Journal, on my experience visiting one of these sites that essentially changed my career, that flipped me from architecture to medicine, but that's a story for another day.

This is interesting because this was the building being used as a form of treatment. We have no treatments for the contagion of TB but we knew that the building could help. And the architect designed every feature of the

building with infection control in mind, down to the door handles, the chairs, the sinks, the furniture.

And you know, Ida asked me about successful long-term care models. This is one of the Maggie's Centres. It's essentially an example of an innovative model of psychosocial oncology care, so cancer care. Not quite the same but I think it's worth spending a moment on this model. These are seen throughout the U.K. and now in Hong Kong. You may have read about them. They've been in the media. They're very emotionally charged buildings that essentially shape the way that care is delivered and practiced and also experienced.

And the idea is each centre is custom designed. This is the Frank Gehry Centre in the U.K. and follows the principle of a domestic scale. More typical, you know, typically more domestic than a clinical setting to try to ease some of the anxiety that comes with oncology care.

And Charles Jencks, Maggie's husband who commissioned the buildings, he was a strong believer that design can impact practices of

care. And he said once in a speech, and I think it's very powerful, he said that architecture can even help prolong our life. He felt it was that important.

The Maggie's Centres create something called the "architectural atmosphere". It's beyond just the bricks and mortar. We're creating that negative (sic) space, that atmosphere. And if you ask visitors to these centres, who love them, what it is, they actually say that the building acts as a silent carer. So I think taking that idea and applying that to the aged care environment is so critical.

I'm a big supporter of evidence-based design. And I'm not aware if you've had discussions about this with some of the other interviews that you've done, but evidence-based design was modelled after evidence-based medicine. As a clinician I would not provide a preventative therapy or a treatment without turning to the literature and our empirical evidence. Well, we do the same thing now in healthcare architecture.

This started in the 1980s with a study

that came out in the Journal of Science by Dr. Roger Ulrich. And Dr. Ulrich did a simple study. He took two groups of patients, this was in the hospital so acute care, but I think we can extrapolate some of this and apply it to the congregate setting of long-term care.

He wondered how they would do based on the view from their window. So these were younger patients who had their gal bladders remove. And if you were in the first group you were in a hospital room that had a window with this view, a brick wall; but in the second group you were in a similar room with a window but you looked at a park and a green space. And he found that people who looked at the nature view went home sooner, so shorter length of stay, i.e. cost implications; took fewer doses of pain medication during their stay; and nurses were overall more satisfied with the care that was delivered. The sort of big healthcare outcomes based on the window view.

So now we're over 30 years out from the study and we have thousands of these studies in actual fact. So whether you might become delirious in the hospital or even in a nursing

home, whether you fall in that environment, catch an infection or sustain a medication error, all have a relation back to the built environment and we have data to prove it. So the acoustics, the lighting, even the sink placements matter.

As an example, what is the evidence around falls and room design? This is a quick sketch of a hospital room but you can see that it can also apply to a long-term care setting. In medicine we always grade evidence; not everything is randomized control trial, especially not in evidence-based design. But observational studies and even anecdotal evidence, I believe, have their place. So we know with very good evidence, for example, bed rails don't reduce falls. In fact, falls are worse, injuries are worse, people get tangled up in those.

We have pretty good emerging evidence in architecture that single rooms designed to support family presence prevent falls more than a shared room. Your neighbours generally pull the curtain and don't notify anyone if they observe a fall; and good visibility. You can

see that in this sketch we've angled the door to provide better visibility into the room for fall prevention.

And then best practice evidence for fall and design, putting the toilet room on the same side of the bed, providing a hand rail from the bed to the toilet room door. These are all considered effective but in actual fact we don't know. And I say this because I think we need more research.

And I think in your cause in the Commission I would suggest to you the idea of studying models that you may have in Ontario that are potentially successful and figuring out what components of the built environment of those models are successful. These studies are definitely possible. Many people say you can't study the effect of the built environment. I don't necessarily agree. I think that you can.

And so talking about anecdotes, this was an anecdote I learned early on as an intern in New York City. A patient in an intensive care room, again in the hospital, but she had no window in her room. She was doing very poorly. She was delirious. We actually moved her based

on that Roger Ulrich study, and based on the evidence we found in a MEDLINE PubMed search. So the clinical team actually considered the environment in their care plan and when we moved her to a window bed she got better.

Not to say that this a randomized control trial, certainly not, it was n-of-1. But I think the key lesson, and we wrote about this for a medical journal and it was published, was to say that the care team considers the architecture in their care planning based on the evidence they have available.

And people say, well, windows aren't always possible. Well, we also have technology now and so I think even though some of our buildings might be deeper and not as narrow as that original asylum floor plan, there are ways we can integrate technology into our design planning to make sure we maintain these circadian rhythms that are so important.

So in the next few slides I've sort of presented some anecdotal evidence. I would like to give you some cause to believe that the built environment should be considered alongside other parameters of care, and is as important as a

medical intervention, as important as giving someone a medication or treatment, a vaccine, a preventative therapy. The built environment matters.

And this is an example, again, a critical care environment. I am presenting some acute care data only because we haven't had as many studies in long-term care.

This was a medical resident in New York City, where I did my residency, who noticed that while he was working in this critical care unit, and working at the central nursing station, he sort of thought that some of his patients in the corner rooms weren't doing as well and he wondered if the room made a difference. So he did a study of over 600 people.

You can see that the visibility into the lower, left-corner room is only 4 percent, very different from the middle rooms with 60, 70 percent visibility. He actually found that for sicker patients put into corner rooms their chance of having a higher rate of morbidity and mortality was present.

So if you are sicker and going into a

room you expect the care to be the same no matter which room you're in, right? I would imagine yes. But that may not actually be the case and we might be subconsciously building inequities into our healthcare spaces.

And I guess the question ethically becomes, do patients have a right to know that their care might not be as good? Mr. Smith, you're going to be put into this room but, by the way, we can't see you as well and you might not do as well.

Sink placement, intuitively we know is important, but a group from McGill University actually quantified this. They did is a study and found that for every additional metre a health care provider had to walk to a sink their chance of washing their hands went down by about 10 percent. I think numbers and empirical data are important when I talk about this to try to convince people, especially those outside the architectural realm.

And I put the citations of the studies on the slides. I'm happy to send them to you.

Long-term care and COVID. I presented with some colleagues to the American Society for

Bioethics and Humanity several months ago, and we essentially made this case that the building is a parameter of care.

And I think COVID has really brought to light in long-term care the disparities related to the built environment and outcomes.

And this was the CBC data in about I'd say June of the pandemic. Not causative probably, this is just a correlation but I think important. If you're in an older nursing home, potentially of the 1970s standard, if you just look at the raw numbers it appears that your chance of dying from COVID is nearly double versus newer buildings.

The next few images I've collected over my experience is in different healthcare settings. But design decisions matter a great deal. This is a geriatric unit in San Francisco. And you'll notice that the floor is quite reflective and also striped, there's a colour differentiation.

The geriatricians on this unit will tell you that patients do not want to come out of their rooms, right? You don't see anyone, and walk. It's known that in cognitive

impairment, and as we were saying many people have cognitive impairment in long-term care, this type of flooring is interpreted, number one, as wet because of the reflectiveness and, number 2, as three dimensional because of the stripes. And so patients don't want to walk. And what happens when you limit mobility by design you essentially get this cascade towards dependency.

We know that many people in long-term care are there because of a prior hospital stay. And this is a wonderful paper by Dr. Morton Creditor, from the Annals of Internal Medicine, in the early '90s showing that people who go into hospital who are older and get put into bed, even for a day or two, end up becoming disabled and going to a home not because of what they came in with. We can treat a pneumonia, a urinary tract infection, but it's because of the bed rest.

And you can see this is the physiologic cascade that happens to our bodies with just a few hours in bed, especially at an older age.

In the 1970s there were social

isolation studies done where they took healthy, young volunteers in their 20s and strapped them to a bed, and also denied them any sensory stimuli like radio, or people talking to them or television. And they found that in just under two hours people started to have perceptual and sensory changes, almost like a delirium. And these were younger patients.

Dr. Creditor in his paper says, there is no therapeutic value to strict bed rest. So I question why we even call these long-term care "beds". In a way we shouldn't focus on the bed and the bed rest.

And as architects I think we also use the bed as our focal point in our room design. It's really the centre piece of the room floor plan. I'm not sure that it should be, both in the hospital and in the nursing home setting.

This is an interesting study that I came across this year in my neurology fellowship. This is done in the context of advanced Alzheimer's disease, dementia. But a simple design intervention, changing the white tableware and swapping it out for high contrast red tableware. People with end-stage dementia

eat and drink much less, but if you swap out the tableware people eat and drink more. And so such a simple change has a huge impact. This has to do with visual and contrast changes that occur in the brain in the case of demented people. And if you think about nursing home place settings and food a lot of it is very monochromatic; mashed potatoes, fish, white plates, not very high contrast; but it affects how much people eat, which inadvertently affects their health.

I am very interested in designing for dementia. This is a typical memory care unit you'll see. And I sort of ask how we're designing for dementia through design. And are we designing these long-term care sites more as prisons than as health settings?

I think to come away from that closed-door model what we're seeing now is this idea of illusion. And as architects we have a long history of deploying deception in buildings to achieve a practical or aesthetic end. And you've probably seen this in classical architecture in Europe where architects have encased columns to make them appear more

substantial, or using blank windows on the façade of a building to appear symmetrical.

But in this case we're trying to use the building as a restraint and limit people from wandering and existing. So our goal is not to do harm, to be beneficial. But I worry that we haven't fully investigated whether this is the best approach we have. Certainly I would say it's better than physical restraints or using medication.

To go one step further, this is the original dementia village. And I know Ida asked me about this, this is De Hogeweyk in the Netherlands. You may be familiar with the dementia village concept. We have one now in British Columbia and there are a number in the United States being planned.

So this really, I think, capitalizes on evidence-based design. We found through neuroscience and architecture that the areas of the brain affected in early stage Alzheimer's are the same areas of the brain we need for spatial navigation. So by developing a village design we can try and combat the confusion and spatial disorientation that these residents can

feel.

So you have your apartment in the dementia village but you're definitely free to wander and come out to the Main Street, go to a grocery store, get your hair done, have a beer at the pub. Interestingly from a bioethics standpoint you can buy a real apple and take a bite but it's actually artificial money, so there's some interesting concepts.

I'm writing an article right now about this, but it's a little bit -- people compare it to The Truman Show, it's essentially still a gated community. And I guess the question becomes, should people consent to this? Should people say, my future self, if I lose my cognitive abilities I will be okay with this environment? That's maybe a discussion for another day.

But this model is very successful in the sense that anecdotal reports state that there's very little psychotropic medication used to try to calm people down, much less agitation but, again, no empirical studies.

So this idea of freedom of movement and meaningful activity through design are

definitely preferred in the village setting for dementia care, but these are not yet minimum design standards in our guidelines. So I like this image because I think it talks to the need for design solutions to blur this home-hospital design continuum.

And I worry that with COVID we're being quite reactive in how we want to change the design of long-term care and make it more towards a hospital setting, and I would caution us not to do that. I've heard various anecdotes about wanting full negative pressure rooms, isolation areas. I think we have to also be aware that these are homes, first and foremost.

And so you might have seen this paper that I published with several colleagues earlier on in the pandemic when we became worried about this reactive approach. And this paper in the Journal of the American Medical Directors' Association, which is really the premier post-acute, long-term care journal in the U.S., was really to say, we need to be pro-active not reactive. Instead of designing for infection control, and I know the Commission's mandate is to think about infection control specifically,

but we tried to make a case for designing for resilience. And through building resiliency we will obtain infection control and more. Pandemic preparedness, emergency preparedness, preparedness with more cognitive impairment, less cognitive impairment, the building can really work with us if it's resilient.

And we also made the case in the article, and I'm certainly happy to provide you a copy, to consider spatial scales and not just to look at the building in isolation; and how the building interacts with both the neighbourhood and the wider context of the urban space.

In the paper we talk about the household, or more specifically the greenhouse model. And we mocked up a typical plan, so this is just our interpretation of what this could look like. And I'd like to spend a minute on the household design model because there's been quite a lot coming out in the research community on this since COVID.

So this is typically 10 to 12 single patient rooms with private bathrooms and dedicated staff. It's interesting that there

are multiple entries and exit points. You have a main entry but usually natural outdoor space is also part of this design concept. And then smaller, decentralized social and dining spaces.

I put this slide in to remind myself because this is important, and I talk a lot about staff, being a staff person in the hospital. The greenhouse model is quite good in thinking about designing for staff. And when I looked back at a lot of our floor plans in Ontario of the 1970s' nursing homes, one thing that really jumps out is the lack of staff space. There's generally -- I notice in the basements a lockeroom, changeroom for staff and not much else. So it becomes very difficult to segregate staff in the event of outbreaks. And also difficult to think about staff mental health and wellness, staff retention, staff burnout, staff well-being, are all impacted by the architecture and design.

And then I think the greenhouse or the smaller household model, I don't know that I'd specifically call it the greenhouse model here, but a small household model also I think capitalizes on design for caregivers. I know

one of the questions I was asked to prepare for the Commission was to think about visitation and how we could potentially design visitation pods.

And I guess one could imagine a sort of shipping container. We have designed those to be ICU pop-ups or vaccination clinics that can just pop on to an existing building. I suppose you could design a visitation pod complete with electrical hook up and maybe proper acoustic controls so that people could speak to each other through vision glass. But you could pop it over here on to an exterior exit or entry of the household model.

But I think if you design a resilient building the building itself can do that without the need for extra pods being attached at times of need. You can have space that can flex. And certainly if you have outdoor space that can be a nice buffer in order to bring people from the outside in, people from the inside out and have them meet in a safe space.

There's good data out there to show that the greenhouse model specifically has very good outcomes with infection control. And again, there's three papers here and I've just

summarized the bottom line from all of them but feel free to take a look at them.

But the greenhouse homes of 10 to 12 residents not only help with infection control but there's improved quality of life, fewer hospital admissions, better quality indicators, cost less and less staff turnover, all of which are positive.

And then a recent preprint paper that came out in Janda [ph] last week actually looked at the greenhouse model homes, and quite a few hundred of them, across the United States comparing them to traditional nursing homes of less than 50 beds and nursing homes of 50 or more beds. The greenhouse models had no COVID infections, no hospital admissions due to COVID, and no deaths due to COVID, zero, zero, zero. The other models had those so that's a very striking outcome. And that's been talked about in the popular press as well.

Now you might say to me, but it's going to cost more. And if you read the popular press, and there was a Nature of Aging article that said the outcomes are great but it costs more. There is an actual cost analysis paper

and if you look at the cost breakdown of the greenhouse model some of the fixed costs may be higher, but the operational costs, surprisingly, are comparable to the traditional nursing homes and you get more direct hours of care per resident. And there are many potentials for revenue enhancements because of all these beneficial outcomes.

So I wouldn't just stop and say it costs more, I would actually do a deeper dive into the literature to ensure that's the case. And I don't believe that's the case. There are many successful Greenhouse Models out there.

COMMISSIONER JACK KITTS: Have you looked at -- we've heard that you can take a large facility with a lot of beds and create ten to 12 patient -- or resident pods. Is that an option as well or is that even more expensive?

DR. DIANA ANDERSON: I don't believe that would be more expensive. I think I would have to give that some thought regarding cost from a design perspective. I think the pod concept of breaking down a larger space can work. I think you still run into design challenges of single entry and exit points

whereby the smaller, more separate household models would have separate entries and exits so you wouldn't get throughput of staff.

I'm thinking about an example in Montreal. The Montreal General Hospital, an older building, double-loaded corridor. They actually converted their ICU a number of years ago and made it into a pod. It's a very long floor plan with little pods. It works well but the staff have to walk through all that to get to the end pod.

COMMISSIONER JACK KITTS: And the other thing I noticed is that your examples of this are all single-bed, single bedrooms with personal bathrooms. Is that the future?

DR. DIANA ANDERSON: That's a great question. People focus a lot on the bedroom. I will say that I think we're moving in that direction just like we did for hospitals.

It wasn't so long ago that we were lobbying, as part of the Building Code and guidelines, to have the minimum standard as a single patient room in a hospital, which we now have if we're going to build new or renovate. I believe we're on the same track for long-term

care. I do believe they're beneficial for fall control, for infection control, for a number of other reasons, privacy.

I do caution us though to think about the isolation, which is not a small point. And I think through design, and it's great that we're on this slide, there are ways to give people a private room with a bed and toilet room that maybe isn't so large, but then use some of that extra space in the corridor and in some of the decentralized social spaces.

So this is a wonderful on-line paper by Willa Granger based out of Australia, and this is recent. And she writes about the history of the nursing home building. And if you look at the older examples they all have a front porch. When you really drill down into older adults, with or without cognitive impairment, what they are doing all day, the idea of watching, viewing and observing is critical to their quality of life. They want to interact with the community around them.

A hospice building in San Diego had two sites and they asked the hospice patients, would you rather be on the site overlooking the

ocean and the beach or would you rather have the site on the canyon overlooking the highway? You and I would probably say, Oh, I'll pick the beach. Patients near the end of the life didn't want that, they didn't want to feel so isolated. They wanted to watch the cars, they wanted to see human life around them.

COMMISSIONER JACK KITTS: That's good to know. So smaller rooms where they want to spend the least amount makes more space for what they want to do, which is socialize.

DR. DIANA ANDERSON: Correct. Nobody really wants to spend all day in their bedroom. I think coming out into -- the corridor is a really underused space both in long-term care and in the hospital.

Do you know how much happens in the corridor? We do physical therapy, we have family meetings and conversations. In an ICU in New York a patient said to the doctor, I don't know how far I've walked every day in this corridor. And the doctor went out to Home Depot, bought sticky numbers and put 1, 2, 3, 4. That was enough incentive to get this patient up and out of bed. They want to be up and moving.

So this idea of companionship facilitated by this material context, the places and porches. The concept of the porch is something that I think we've lost over the years. Allowing the elderly to touch the world beyond. I think that's a powerful concept.

And I also put this in to remind me that I'm nearing the end and maybe you can touch on questions. But I put this in to remind myself of models of care, and I think we've touched on care models with this talk but we have to marry the two. We can't have a new method of design and not change the way we deliver care.

This is a concept I did for the Canadian Healthcare Network on clinic design for older adults for geriatric care. We've come a long way in medicine. We don't provide the hierarchical care where somebody is behind a desk with a computer screen between telling a patient what to do. It's really about shared decision making.

And as clinicians we sit with the family and the patient and together present evidence, and data, and options, and the patient

and their family make the decision. And so the idea of a round table to sort of have design equity here. Making sure everyone is on the same level and we can all talk together, I think the built environment really needs to model what medicine is doing in our care practice.

Those are some examples, and that's really all I have to say officially. But I'm happy to go back to any of the images or studies or take questions.

I do think we're at a pivotal point in time, as Ansar said, and buildings can play an enormous role going forward.

COMMISSIONER JACK KITTS: On the buildings, can I ask a question on the staff? You work in various place. Do you know the level of the training of staff to deal with long-term care patients? Like, do they have any geriatric training or dementia training? Can you comment on any of that?

DR. DIANA ANDERSON: I can comment generally in terms of what I see, and I don't know that I can comment specifically in Ontario.

I would hazard a guess to say that probably there isn't so much direct training in

dealing with cognitive impairment and mild/moderate to severe dementia as there is with just standard care practices.

Certainly in some of the care models, like the butterfly model, or the eden alternative, that's pivotal. Staff are really trained for that, for cognitive impairment. I don't believe that's the case in general long-term care homes.

COMMISSIONER JACK KITTS: Thank you.

DR. DIANA ANDERSON: Even geriatric medicine I think has come under some question. It seems like the field is not as popular any more, and there are a number of my colleagues making the case that we need this. We need this kind of model.

COMMISSIONER JACK KITTS: I agree.

COMMISSIONER ANGELA COKE: I was just wondering if either of you are aware of the design standards that are in place here in Ontario for new builds and if you had any thoughts about those standards?

DR. DIANA ANDERSON: So the 2015 standards? Is that what you're referring to?

COMMISSIONER ANGELA COKE: Yes, the

current that they have to comply with.

DR. DIANA ANDERSON: Yeah. So I am familiar generally with them. I probably couldn't speak to specific details. You know, comparing them to the older standards of the 1970s, certainly we've come into lower density of rooms, so no longer the four-bedded room. But I believe the 2015 care standards have shared rooms and shared toilet rooms. And I think the 2015 standards have come a long way in decentralizing some of the social spaces and dining spaces.

But I think given what we know about aging, physiology, cognitive impairment, neurodegenerative conditions, I think we can probably push those standards further so that the building accommodates older adults in more ways.

ANSAR AHMED: If I can just add one point regarding the standards? I think it's important to understand that the signs that underpin the development of these standards is evolving so quickly.

And it's a very interesting comment that came up in our round table, one of the

participants said that we were speaking sort of negatively about the 1972 standards. And he made the point that we shouldn't think -- it would be wrong to think that those who developed the 1972 standards somehow didn't care about the elderly. They did care about the elderly but they cared in the context of their knowledge in 1972.

And that knowledge has evolved so greatly over the past number of decades with the informed work of people like Dr. Anderson, that I think it sort of behoves us as a province to say, okay, are the 2015 standards the best that we can do today in 2021, or should we be continually dynamically evolving those standards? Sort of a version 2.0, version 3.0 as we look to figure out what standards to follow.

COMMISSIONER ANGELA COKE: Or maybe incent people to go beyond the standard.

ANSAR AHMED: Absolutely. And that's the thing that I get back to, which is on the build sides, on the procurement side. When you set out that the 2015 standards -- that your target is to meet the 2015 standards that's what

you're going to get, because at the end of the day it's about cost benefit.

And you have to incentivize those that are going after this work, that want to do this work to go above and beyond. As you mentioned, Commissioner Coke, go above and beyond those standards and see what else can be done.

DR. DIANA ANDERSON: That's a great point about the 2015 standards. And I would also hazard a guess to say there is emerging evidence that potentially could be incorporated into our guidelines.

In medicine we're constantly revisiting our clinical guidelines and incorporating new studies, new evidence. Some of the studies that I presented to you they're in the clinical literature, they haven't made it over to the design guidelines.

So I think before we make big decisions reviewing the literature is extremely important. Looking at cases out there, even beyond Canada in other countries and looking at what's successful or not.

ANSAR AHMED: And Commissioner, sorry, before you asked your question you had asked a

question, you were talking earlier about moving to a model of a single bed, single bedroom for all patients.

And I think one of the things that came up, and it was actually at Southlake when we did the new mental -- the acute adult mental healthcare unit; and we moved away from the sort of pods over to individualized beds. And one of the important criteria was the notion of self-value, self-worth, people's sort of sense of privacy. And it becomes so important to their overall healthcare that it was something that the designers took into consideration.

COMMISSIONER JACK KITTS: It's really important in every sense of care, from pediatrics right through to hospital care, but when it comes to long-term care it seems, well, maybe something less is good enough.

And I think if you have to be alone in -- like, single rooms in hospitals the argument would be, well, at what age do you not need to have a single room? And that's why we're struggling with, if it's long-term care it's okay if it's hospital it's not.

ANSAR AHMED: Yes, that sort of

feeling of self-dignity. What do we need? Particularly when you talk about the washroom facility.

COMMISSIONER JACK KITTS: To me I think it's probably even more important at that point in time where dignity and respect is what you really need. So the conversation shifts, it seems to shift depending on what age group you're talking about.

And I liked your diagrams, Diana, single bedrooms and single washrooms.

The question I was going to ask you though is, you mentioned -- I think you said we don't need negative pressure rooms in all long-term care rooms. But do you have any comments on the status of HVAC and the importance that they would put on that in terms of the new homes and design?

DR. DIANA ANDERSON: Yeah. I think my comment about negative pressure was just as a caution not to spend the money on making every room negative pressure capable in these types of buildings. I'm not sure we should go in that direction.

I think HVAC is an important topic. I

don't know that I can comment specifically on Ontario's standards as I'm not practicing there currently. There are probably better experts out there than me, but I think it's an important component to consider going forward.

But I think a lot of the built environment configurations can handle infection control in the segregation and decentralization of space; flows through the space, making sure that staff can be segregated. Staff flow is different from patient flow is different from caregiver flow. Those are all design problems that we can sort out.

IDA BIANCHI: And Diana, can that be done when you're retrofitting a building as opposed to building from scratch?

DR. DIANA ANDERSON: Good question. I did take a look at a number of older flow plans in Ontario with some architects early on in the pandemic and we made suggestions for possible retrofit. It's challenging, as you can imagine. You probably couldn't get flow segregation but you could probably decentralize space a little bit more; potentially dedensify rooms from shared to private rooms potentially.

But I think at a certain point do we look at these buildings and say, there's only so many improvements. I think a participant at our round table sort of said, at a certain point the iPhone can be upgraded, upgraded but then you just have to get a new one because you can only do so much with it. And I think we're probably at that juncture to ask that question with some of these buildings.

We run into the hospital challenges with retrofit, trying to fit ceiling-mounted booms into ICUs. If the billing is just too old it's almost impossible to do and it really does impact how care is delivered. So then we have to think about a new location.

ANSAR AHMED: I think, Ida, if I could just add? When you think notionally about innovation being the mother of necessity, I think we're at a point in time where those that are -- those that have lived within the HVAC community for their entire lives will tell you that now that we understand what you're desiring in terms of outcome, in terms of infection control and all those things, of course we have the technology to do that. Just give us the

direction, give us the authority and we will come up with this system.

When you think about ozone filters and ozone filtration, and all of these other technologies that notionally nobody would have ever thought to put into a long-term care centre, well, all of a sudden now we are thinking.

And I think the technology certainly is there and it's just a question of marshalling the necessary capital, resources, thought leadership and get this moving ahead.

IDA BIANCHI: And that's in the existing buildings or in new builds?

ANSAR AHMED: I don't see why in terms of when you look at some of these packaged solutions -- I mean a lot of these buildings that were built decades ago, yeah, their current HVAC system is so archaic that when you go into the marketplace now you'll see that you have innumerable opportunities to have more condensed HVAC systems, and more sort of specificity around infection control and flow control. And I think it's just a question of going to the right individuals to see what solutions are

available on the marketplace.

DR. DIANA ANDERSON: There are also biocidal surface material solutions. You know, thinking about technology, there are surface materials, copper alloy that have good data behind them that it kills viruses and bacteria. Doesn't obviate the need for cleaning of surfaces but is one more tool in our toolkit. And so we're seeing that being deployed in various long-term care settings. Technology is something to keep in mind.

And I think there are successful models in Ontario. I would love to see some research studies looking at how these models are successful, comparing them to standard, traditional nursing home models and measuring health outcomes. I think it would be a good idea for us to undertake some of this research in thinking about how we go forward.

At the old Bridgepoint Hospital as a medical student, the old half round building, you all remember that? The palliative care unit, I went in and did a study with those patients and asked them, Do you want to be in this four-bedded room or would you want to be in

a private room? And surprisingly half the patients said, and their families said, We don't want a private room. We want a shared room.

Now, as a caveat nobody had experienced a private room so there is probably some bias in that study. But people describe the experience of the dying process and wanting connection. So I just make the case that the research is important in understanding what the users want. And we're potentially all going to be users one day, so aging is inevitable for most of us.

ANSAR AHMED: My father was actually in that facility.

If I could just add one comment that I would say to the Commissioners to keep in mind? I think you've heard some tremendous information from Dr. Anderson. Two weeks ago I heard the same thing plus, plus, from a range of experts. And I think while there's a lot of information out there that they have I think the fact is that we've never invested and given priority to doing the right research.

So I think while certainly I'm very pleased to hear that the government wants to

invest large sums of money in improving the long-term care homes that we have in the sector, I think at the same time, on a somewhat different path, you need to invest into the research. Let's get that empirical data to underpin the development, as Commissioner Coke mentioned, develop the new standards. How do we evolve those standards?

Because you don't want to evolve standards based on anecdotes you want to do it based on evidence that Dr. Anderson mentioned. And I think investing some time and money into that sort of research I think would be, frankly, time well spent.

DR. DIANA ANDERSON: I mean, even investing time in searching the existing research. There's a lot out there that exists but it's about consolidating and asking the right questions and searching the right databases.

I think also there's a value to doing an existing space needs assessment and looking at what is there and how we can use it. Is it usable? Can we re-allocate space?

I'm not saying we need to chuck all

existing buildings and start new, that's obviously not feasible. But I think a space assessment can be of great value too architecturally.

LEAD COMMISSIONER FRANK MARROCCO: Are you aware, doctor, of any attempt to quantify the healthcare savings associated with architectural improvements? You understand the healthcare system obviously that we have. And it seems to me there is a value in linking the architectural improvement to healthcare costs, and I'm just wondering if you're aware whether anybody has attempted to do that?

DR. DIANA ANDERSON: Yes, is the short answer. Maybe not as detailed and in-depth as we would like. But I certainly think when you think about costs there is the sort of tangible cost to think about, how much money do you save if someone stays in the hospital one day less because of design? But also quality of life. And probably there's ways to put dollars on quality of life and that type of metric.

But there is evidence to show that if you employ evidence-based design principles in an acute care hospital setting, and it's called

the "Business Case for Better Hospital Design", it was a famous paper, that your return on investment for doing that, because people will say, Well, it's a higher up-front cost to do all these evidence-based design interventions, but your overall costs it takes one to two years, which is quite impressive. And there are cost savings along the way in terms of shorter length of stay, better outcomes, all of that.

So there is data out there to look at the cost savings related to design interventions. Even just the greenhouse costing paper that I put into one of my slides is quite convincing if you take a look at that. And it's convincing me because it looks not only at the direct costs and the building costs but also the operational costs, which obviously is a big issue in these types of facilities.

LEAD COMMISSIONER FRANK MARROCCO: I was just thinking it helps the sort of pedestrian approach like that. It helps to justify the cost that you might put into the structure or the design if you can perhaps persuade people that there's an outcome, a financially -- I don't know if favourable, but

an improved financial outcome. And that that's what I was trying to -- because the problem is that it's very siloed.

You spend more money on design and the savings doesn't come necessarily out of the same pocket that's spending the money on design. And so even though looking at it from the perspective of a taxpayer you would say, Well, that's a good outcome. When you look at it in a siloed approach one person is paying and another person is reaping the benefit and that can work against the change. That's what was in my mind when I asked the question.

DR. DIANA ANDERSON: No, I hear you for sure. I will say that I don't think good design needs to cost more.

And anecdotally speaking, I sit on a committee through the Society of Critical Care Medicine and every year we judge worldwide submissions for ICUs, either renovations or new builds, and we look at the costs. And we ask the group if they have spent more or less than anticipated. And the winners generally, which are often outside the United States, are under budget. And they are some of the most advanced

ICUs that I've seen complete with electrostatic glass, ceiling-mounted booms, private rooms.

So I worry that there's a quick approach to say good design has to cost more. I don't know that that's the case.

ANSAR AHMED: And Commissioner Marrocco, if I can just add to what Diana just said? I think it's important if you step back and take a look at the life cycle cost. And frankly this has happened in basically every major asset sector.

And where it becomes challenging is right now in terms of budget, in terms of the provincial budget process, you have two different Ministries and that adds an entirely different level of complication because there's two different buckets of monies.

But you need to step back, look at the life cycle cost and look at what your cap-ex and -- balance your cap-ex and op-ex and figure out how those two dovetail to give you the most efficient use of tax dollars.

I mean, anecdotally I had a conversation two weeks ago with a surgeon who's

the Chief of Ophthalmology. And he was concerned over the fact that we have halted cataract surgeries as a result of COVID because of the need for dedicated surgical space. And he was talking about the fact that without that you have reduced visibility. People are -- their eyesights are declining rapidly and that is exposing them to other falls and injuries, which then has a cascading burden on the overall healthcare.

So if any sector needs that life cycle approach to investment planning it's healthcare in my opinion.

LEAD COMMISSIONER FRANK MARROCCO: Well, I don't think we have any further questions. I just want to say thank you very much. We are very much struggling with the future. The waitlist here is significant and the investment is significant. There is a debate here between profit and not-for-profit homes.

Actually you've given us a different perspective and it's very helpful to realize that the design component needs to be looked at. And it's just not a matter of creating more

beds, if you understand me.

So thank you very much for your time, and thank you very much for the presentation, it's very helpful from our perspective.

DR. DIANA ANDERSON: Thank you very much. Thank you for listening to that whole spiel. And if I can provide any additional papers, even some of that cost research, I'm happy to do so. You can contact me.

IDA BIANCHI: We have some of the papers.

LEAD COMMISSIONER FRANK MARROCCO: You can be sure of that. The rates we pay we'll certainly remember that.

DR. DIANA ANDERSON: Can I say also, in architecture we tend to say we need to build a building and then inhabit it and then study it, and that's a big undertaking.

We're looking at ways in healthcare design to instead of doing post-occupancy evaluations three or four years out to pre-experience space. Build mockups, use technology, virtual reality to create the space before we build it. I think healthcare architects have that skill set. I think they're

an important group within architecture that know how to do that. And that may be a way to envision the future without putting the cost forward.

ANSAR AHMED: And lastly, in terms of the round table we held a few weeks ago it is our intention to submit a report, a summary report to Minister Elliott and Minister Fullerton, and we'll make sure that the Commission receives a copy of that as well.

LEAD COMMISSIONER FRANK MARROCCO: I was just about to ask. Thank you very much.

ANSAR AHMED: Absolutely.

LEAD COMMISSIONER FRANK MARROCCO: That will inform us a bit better. Thank you.

DR. DIANA ANDERSON: This is an important undertaking so I'm very glad you're doing this work. Thank you very much.

IDA BIANCHI: Thank you, have a great day.

--- Meeting ended at 10:13 a.m.

REPORTER'S CERTIFICATE

I, HELEN MARTINEAU, CSR, Certified Shorthand Reporter, certify;

That the foregoing meeting was taken before me at the time and date therein set forth;

All discussions had by the participants were recorded stenographically by me and were thereafter transcribed;

That the foregoing is a true and accurate transcript of my shorthand notes so taken. Dated this 10th day of February, 2021.

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PER: HELEN MARTINEAU

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