

ELLIOT LAKE COMMISSION OF INQUIRY

DAY 106

September 20, 2013



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COURT REPORTING AND CAPTIONING INC.

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1.888.525.6666 | Fax: 416.413.0230

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ELLIOT LAKE COMMISSION OF INQUIRY

--- This is Day 106 in the Inquiry proceedings held before
the Honourable Justice P.R. Bélanger, Commissioner, taken
at the White Mountain Academy of the Arts, 99 Spine Road,
Elliot Lake, Ontario, on the 20th day of September, 2013,
commencing at 9:19 a.m.

REPORTED BY: Lisa M. Barrett

CRR, RPR, CSR

1 A P P E A R A N C E S:

2

3 Peter Doody, Esq., Commission Counsel

4 Duncan Ault, Esq.

5

6 Carolyn McKenna, Esq., Ontario Fire Chiefs
7 Association

8

9 Darryl Kloeze, Esq., Government of Ontario

10

11 Richard Oliver, Esq For the City of
12 Toronto/HUSAR

13

14 Ken Hogg, Esq., OPP

15

16 Paul Cassan, Esq., City of Elliot Lake

17

18 Carolyn Filgiano, Esq., ELMAC

19 & Alexandra Carr, Esq.,

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I N D E X

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WITNESS: DR. MARTIN QUEEN

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1 --- Upon commencing at 9:19

2

3 THE COMMISSIONER: Good morning,
4 everybody.

5 MR. DOODY: Good morning, Mr.
6 Commissioner, and I apologize for the late start
7 this morning.

8 THE COMMISSIONER: No problem. I'll
9 just reiterate before we begin, Mr. Doody, what Mr.
10 Wallace told us yesterday afternoon, that we'll be
11 hearing, this morning, the evidence of Dr. Queen,
12 and that there may be oral or pictorial evidence
13 that some people may find upsetting, and so I'm
14 giving you forewarning at this time that this may
15 happen. In addition, when Mr. Doody advises me that
16 those pictures are to be shown in the hearing room,
17 I'm ordering that they not be published or broadcast
18 through any media unless I make an order to the
19 contrary.

20 In addition, we'll need a few
21 minutes, I gather, for Paul, our technician, to
22 close the television set in the public hearing room
23 downstairs. Those people outside of the hearing
24 room who wish to see those photographs will have to
25 come into the hearing room. That pictorial evidence

1 will not be broadcast or telecast on the
2 Commission's website.

3 MR. DOODY: Thank you,
4 Mr. Commissioner. If I could call Dr. Martin Queen
5 to the stand.

6 THE COMMISSIONER: Good morning,
7 Doctor.

8 DR. MARTIN QUEEN: SWORN

9 EXAMINATION-IN-CHIEF BY MR. DOODY:

10 Q. Good morning, Dr. Queen.

11 A. Good morning.

12 Q. Sir, I understand you received
13 your medical degree from the University of Toronto
14 in 1981?

15 A. Yes.

16 Q. And you practised as a family
17 physician in Toronto and Nova Scotia for a number of
18 years?

19 A. Yes.

20 Q. You then returned to Toronto in
21 1988, where you commenced your training to become
22 a pathologist?

23 A. Yes.

24 Q. And you studied as a resident in
25 various hospitals in Toronto, including St.

1 Michael's, the Toronto hospital, Sick Kids, and
2 Sunnybrook.

3 A. I did.

4 Q. And in 1992 you received
5 a fellowship in the Royal College of Physicians and
6 Surgeons in anatomical pathology and also became
7 a diplomate of the America Board of Pathology in
8 anatomical pathology; is that correct?

9 A. Correct.

10 Q. And can you tell us what the
11 difference is? Why you received both professional
12 recognitions?

13 A. It was a choice. To practise
14 a specialty in Canada, you generally need your Royal
15 College certification. You don't necessarily need
16 your American Boards, but many of us do it and did
17 it because it can open some other doors, and it
18 actually became necessary when I moved into
19 forensics.

20 Q. And which leads me to my next
21 question. In 1992, you received your fellowship in
22 anatomical pathology. Can you explain to us the
23 difference between anatomical pathology and forensic
24 pathology?

25 A. Anatomical pathologists are the

1 kind of pathologists who generally work in
2 hospitals. They generally work analyzing specimens
3 and tissues and cells and so on from live patients,
4 so they're generally dealing with natural disease.
5 So, for example, they're the ones that would
6 examine, say, a breast lump that's been removed from
7 a woman to determine whether it's benign or
8 malignant. Many anatomical pathologists do little
9 or no autopsy work.

10 Some of them do part-time coroner's
11 work.

12 A forensic pathologist, on the other
13 hand, is a subspecialty area of medicine pathology.

14 It primarily deals with death
15 investigation, so it's one of those areas where the
16 law and medicine tend to intersect sometimes. And
17 so my primary activity is to perform autopsies or
18 postmortem examinations to determine the cause of
19 death and, if possible, to help clarify some of the
20 circumstances around the death.

21 Most of my work is done through
22 warrants from coroners.

23 Q. And you worked as an anatomical
24 pathologist in Toronto until 1995, when you were
25 awarded a fellowship in forensic pathology at the

1 Office of the Chief Medical Examiner in Baltimore,
2 Maryland; correct?

3 A. Yes.

4 Q. And in September of 1996,
5 following that, you became a diplomate of the
6 America Board of Pathology, in forensic pathology;
7 correct?

8 A. Correct.

9 Q. And from August 1996 to May
10 1999, you worked as a forensic pathologist at the
11 Office of the Chief Coroner for Ontario?

12 A. Yes.

13 Q. And what did that work consist
14 of?

15 A. I was a full-time forensic
16 pathologist at the head unit in Toronto. So I was
17 part of the rotation to perform the autopsies that
18 were directed to be done by the coroners.

19 Q. And in May 1999 to the present,
20 you've been a forensic pathologist at the Sudbury
21 Regional Hospital.

22 A. Yes, which is now called Health
23 Sciences North.

24 Q. Sorry. Thank you. And from
25 December 2010 to the present, you've been the

1 director of the Northeastern Regional Forensic
2 Pathology Unit in Sudbury; correct?

3 A. Yes.

4 Q. And what does that position
5 entail?

6 A. Well, just to go back a step,
7 when I arrived in Sudbury in 1999, I was the first
8 Board certified forensic pathologist in the history
9 of Northern Ontario, and I remain the only full-time
10 Board certified forensic pathologist in
11 Northern Ontario. And so when once I established
12 myself in Sudbury, there was a natural development
13 of referrals of cases to me, so the business, let's
14 say, built very quickly and became too much for one
15 person.

16 So the idea was to develop a regional
17 forensic unit, of which there are several around the
18 province, and this entails additional funding. It
19 gives me more opportunity to recruit help. And
20 since I'm the only full-time person there, I was
21 appointed the director.

22 Q. And you're also an adjunct
23 professor in the Department of Forensic Science at
24 Laurentian University in Sudbury; correct?

25 A. I am.

1 Q. Now, sir, in your position as
2 the forensic pathologist at the hospital in Sudbury,
3 are you a public servant? Are you an employee of
4 the provincial government?

5 A. No, I'm self-employed.

6 Q. And is that the norm for
7 forensic pathologists who work other than in the
8 Chief Coroner's Office in Ontario?

9 A. No. I'm probably the only one
10 in the province.

11 Q. Now, if I could take you to the
12 commencement of your work in this case, at tab 8 of
13 the book in front of you, Exhibit No. 9237.

14 A. Sorry, tab 8? I'm sorry. Tab
15 8?

16 Q. Tab 8. Yes. Eight.

17 A. Yes.

18 Q. And it's also on the screen in
19 front of you. You told us that your work starts
20 with a coroner's warrant. I understand this is
21 a coroner's warrant?

22 A. Yes, it is.

23 Q. And this is a coroner's warrant
24 for an individual who was identified as "unknown,"
25 and under circumstances of death, it's written:

1 "Found in collapsed rubble of
2 Algo Mall, which collapsed June
3 23rd, and found pushed against
4 wall. Left side feet higher
5 than head."

6 And I understand this is the
7 coroner's warrant for Mrs. Perizzolo; is that
8 correct?

9 A. Yes. She was originally
10 registered at our unit as Jane Doe No. 1.

11 Q. Right. And under the processes
12 in place, is this the document that starts the
13 autopsy, in effect, or gives you authority to
14 conduct the autopsy?

15 A. Yes, it's required.

16 Q. Right. And then if you turn
17 over to the third page, the page that ends -003 in
18 the lower right-hand corner.

19 A. Yes.

20 Q. This is another warrant for
21 postmortem examination for Female No. 2, and under
22 the additional information, it indicates:

23 "Found under huge slab of
24 concrete on left side, June 23."

25 And I understand that this is the

1 warrant that authorized you to conduct the
2 postmortem examination on Ms. Lucie Aylwin; is that
3 correct?

4 A. Yes. Again, Ms. Aylwin was
5 originally registered as Jane Doe No. 2.

6 Q. Now, if we could deal with
7 Mrs. Perizzolo first, if you could turn to tab 33,
8 which is Exhibit No. 9259.

9 A. Yes.

10 Q. This is your final autopsy
11 report?

12 A. It is.

13 Q. Can you tell from the report
14 when the report was produced?

15 A. The final autopsy report was
16 produced on December the 4th, 2012.

17 Q. Now, that's a number of months
18 after Mrs. Perizzolo's death. Can you tell me, is
19 this length of time, is this abnormally long, short,
20 or normal?

21 A. For me, this is quite efficient.

22 Q. Okay. Now, what did you review
23 before the autopsy began?

24 A. Well, there was the coroner's
25 warrant, which you've already indicated. There was

1 information from the police who attended the
2 postmortem examination, and there was also some
3 media sources that I looked at. I, of course,
4 wouldn't take those necessarily at face value, but
5 it's something that I look at.

6 Q. And you say on the page that
7 ends -25, the second page of the report, under the
8 heading "Scene," Item No. 2:

9 "I reviewed digital images of
10 the scene via a USB key supplied
11 by the police prior to the
12 autopsy."

13 Can you tell us, if you recall, what
14 those images showed?

15 A. Yes. At that point, there were
16 images available already that showed, basically, the
17 area where the bodies were recovered from, so,
18 I mean, it showed all the debris in the area of
19 collapse, and it showed sequential pictures of the
20 bodies being recovered.

21 At that point, I had not seen any
22 video.

23 Q. And you say, in Item No. 3,
24 after the autopsy and prior to the completion of the
25 final report:

1 "I reviewed video footage of
2 the mall taken just prior to and
3 including the collapse and
4 additional digital still images
5 of the scene after the collapse
6 via a USB key supplied by the
7 police."

8 A. Correct.

9 Q. Those videos, were they
10 interior, exterior, or both of the collapse?

11 A. Both.

12 Q. Both?

13 A. Yes.

14 Q. So you saw the video that we've
15 seen here in this inquiry of the area around the
16 ticket kiosk at the time of the collapse?

17 A. I assume it's the same one.

18 Q. Right. Now, if we could go over
19 to the next page, the page that ends -26, you go
20 through various things which you observed, and under
21 the heading "Face and head" at the bottom of the
22 page, Item No. 3, you say:

23 "The conjunctivi show no
24 petechiae. See description of
25 the injuries."

1 Can you explain, first of all, what
2 is the conjunctivi?

3 A. The conjunctivi is the thin
4 layer on the surface of the eyeball and then which
5 reflects under the eyelids.

6 Q. And what are petechiae?

7 A. Petechiae are a nonspecific
8 finding that we can see at autopsy. It's basically
9 tiny little red spots. It's caused by the bursting
10 of tiny blood vessels. It can be seen in many
11 different situations, thus, nonspecific, but it is
12 one of the indicators of asphyxia, which, in these
13 cases, is something that, you know, needed to be
14 considered because of the circumstances.

15 Q. And what did you conclude from
16 the absence of petechiae in Mrs. Perizzolo's case?

17 A. Well, the absence doesn't allow
18 you to make any definitive conclusion. Someone can
19 die of asphyxia and not have petechiae, so the
20 absence is not particularly helpful. The presence
21 is more helpful.

22 Q. And if you turn to the page that
23 ends -28, so it's page 5 of your report, at the top
24 of the page, you write:

25 "All injuries show a vital

1 reaction and are recent unless
2 stated otherwise."

3 What does "vital reaction" mean?

4 A. Well, it implies that the person
5 was alive when they received the injuries, and,
6 generally, when grossly, it's indicated by blood in
7 the site of the injuries.

8 Q. Is there anything else, other
9 than blood at the injury site, that would be
10 included in the term "vital reaction"?

11 A. That would be the item that we
12 would look for grossly. There are microscopic
13 changes that I'm sure we'll be getting to later that
14 are part of that.

15 Q. Right. And then you wrote that
16 the:

17 "Injuries are recent unless
18 stated otherwise."

19 What does "recent" mean?

20 A. Unfortunately, when it comes to
21 timing various things in forensic pathology, we
22 generally can't be exact, and, you know, that
23 includes determining time of death, determining the
24 age of injuries. So we're often not able to
25 quantify these things, certainly not in an exact

1 way. So we're often left using terms that qualify
2 it rather than quantify it.

3 So often with injuries all we can say
4 is that they're recent; they're older; and they're
5 remote, and often that's the best we can do.

6 Q. And among those terms, can you
7 give us some idea of the range that's covered by the
8 term "recent"?

9 A. It varies on the circumstances,
10 but you could be talking, you know, hours to day.

11 Q. Then you list, under
12 "Description of injuries," you list a number of
13 injuries, and if I could, I will take you to what
14 I understand to be the most significant injury,
15 which is No. 13:

16 "Hinge fracture through middle
17 cranial fossa, left to right,
18 with laceration of left carotid
19 artery, decreased intravascular
20 blood volume and absent
21 postmortem lividity."

22 Is that the most significant injury
23 which you found in this case?

24 A. Yes.

25 Q. Can you explain to us what it

1 is, sir?

2 A. Yes. First of all,
3 Mrs. Perizzolo had a large number of what we call
4 blunt force injuries. And I divided them in my
5 report into head and neck and other.

6 I think there is a total of 28 that
7 I documented. So No. 13 that you just read is
8 a very severe and universally fatal blunt force
9 injury to the head. It involves the skull. It
10 involves the base of the skull. So you can divide
11 the skull into sort of the dome part, which kind of
12 surrounds the top and sides of the brain, and then
13 you can talk about the base, which is the part
14 underneath that the brain sits on.

15 And then the base is divided into
16 an anterior, a middle, and a posterior cranial
17 fossa, so the middle one's in the middle between the
18 front and the back one.

19 So what we have here is we have
20 a fracture, which is a blunt force injury, through
21 this middle section of the base of the skull. It's
22 a transverse fracture, so basically it runs kind of
23 from ear to ear along the base of the skull under
24 the brain.

25 It's actually left greater than

1 right, not left to right.

2 Q. Sorry. I see that now.

3 A. One of the reasons why this is
4 so dangerous is that the carotid arteries perforate
5 the base of the skull in that area, so the carotid
6 arteries are the two big arteries that are towards
7 the front of your neck that come up off the heart,
8 and they pump a lot of the blood up into the brain.
9 And to get to the brain, they have to go through the
10 base of the skull, and they go through the base
11 right in that middle cranial fossa area that we've
12 been talking about. So when you get one of these
13 hinge fractures, you can tear or lacerate one or
14 both of the carotid arteries.

15 A little terminology: The reason
16 it's called a hinge fracture is because once you've
17 removed the cap of the skull and you've removed the
18 brain, and then you've got this transverse fracture
19 kind of going from ear to ear, if you grab the front
20 of the skull and the back of the skull, you can
21 actually move it back and forth so that this
22 fracture line actually functions like a hinge.

23 So once this carotid artery is
24 lacerated -- and, you know, it's a major artery --
25 you get, you know, massive instant bleeding, and you

1 exsanguinate or you bleed out very quickly. And so
2 the results are you don't have much blood left in
3 your blood vessels, in your heart, and in your major
4 blood vessels, and the other thing that you can lose
5 is the postmortem lividity. Now, what that refers
6 to is when you die and you've still got blood in
7 you, gravity will cause the blood to, you know,
8 settle downward in the appropriate direction. But
9 if people have bled out, they don't have enough
10 blood left sometimes for that lividity to be visible
11 on the skin, so it just supports the conclusion
12 that this lady had massive bleeding, which killed
13 her quite quickly.

14 Q. And in terms of the information
15 you had before you prepared your final report, if I
16 could direct you to tab 32, which is Exhibit No.
17 9258, and this is at the page, Doctor, that ends
18 -018 in the lower right-hand corner.

19 A. Yes.

20 Q. And this is a CT Scan of the
21 head. And what information did this provide to you?

22 A. Yes. So we did do CT Scanning
23 of both of these victims. That's not a common
24 practice, but I decided to do it in these cases for
25 at least a couple of reasons. One of them is to

1 help document the bony injuries, because documenting
2 bony injuries at autopsy is not optimal because, you
3 know, the bones and the joints are generally covered
4 with a lot of soft tissue, and unless you completely
5 skeletonize the body, you can't get a full view of
6 the skeleton. So it's not uncommon to miss
7 fractures at an autopsy. So one of the reasons
8 I decided to order the CT Scan was just to further
9 and more fully document any bony findings. So
10 there's a number of things that are listed here.

11 So they talk about fractures through
12 the front of the skull through the sinus, fractures
13 of the nose, of the left maxillula, which is the
14 upper jaw, the left skull base, and involved
15 a couple of other bones that have long names that
16 I won't bother with. Then there was also similar
17 fractures on the other side, on the right side.
18 Then there's fractures of the squamous temporal
19 bone, the left squamous temporal bone. That's where
20 the hinge fracture occurs, so that's the injury that
21 caused the laceration of the carotid artery.

22 And if I could take you back to your
23 autopsy report, sir, the previous exhibit, Exhibit
24 No. 9259, and to page 8 of the report, which is the
25 page that ends -31 in the exhibit. Under the

1 heading "Opinion," you've written:

2 "At postmortem examination,
3 there were both definitively and
4 additional potentially fatal
5 blunt force injuries. Most
6 proximate to the death was
7 a severe fracture through the
8 base of the skull with tearing
9 of the left carotid artery."

10 What does the phrase "most proximate
11 to the death" mean, sir?

12 A. Well, she had a number of other
13 injuries which certainly could have been fatal as
14 well, but would have probably taken a bit longer
15 time, so this is the one that -- I know "killed her
16 first," I guess, is not a great expression, but
17 that's kind of what I mean.

18 Q. And then you wrote in the next
19 paragraph:

20 "The resulting mechanism of
21 defendant was rapid
22 exsanguination.

23 This injury is not survivable
24 and death would have been
25 inevitable and near immediate."

1 And what do you mean by "near
2 immediate"?

3 A. Well, first of all, death is not
4 an event; it's a process. So even if someone has
5 a devastating injury like this, which we say killed
6 them, you know, more or less right away, it doesn't
7 mean that all the processes in the body stop
8 instantly. We all have about 10 or 15 seconds worth
9 of oxygen within the cells of our brain, so even if
10 somebody is decapitated and their head comes
11 completely off, there actually still will be
12 activity in the brain for 10 or 15 seconds just
13 because of the oxygen that's stored there.

14 And the heart, even, again, in
15 a devastating injury like this, the heart may
16 continue to have activity for some time. There may
17 continue to be electrical activity possibly for some
18 number of minutes, and there may be some movement
19 or, you know, irregular kind of beating or
20 shimmering of the heart.

21 It's called a ventricular
22 fibrillation.

23 And then if you look at individual
24 cells, even after a person is "dead," there are
25 individual cells in the body that can live for days,

1 so if you extract these cells from a person who has,
2 perhaps, even been dead for several days and you
3 culture them in a lab, they will grow, so you can't
4 pin the time of death down at exactly. So, again,
5 I'm not quantifying here; I'm qualifying, so it's
6 near immediate.

7 Q. And just so that we understand,
8 in the scheme of things, setting aside the cellular
9 activity and the electrical, potentially heart
10 activity, in the normal nomenclature used by members
11 of the public, would you have expected
12 Mrs. Perizzolo to have lived more than a few
13 minutes?

14 A. No. I think she would have been
15 unconscious immediately and would've been dead
16 within a few minutes.

17 Q. Thank you. Now, if we could
18 turn to Ms. Aylwin's autopsy report, which is
19 tab 34, Exhibit No. 9260. And this is your final
20 autopsy report for Ms. Aylwin?

21 A. It is.

22 Q. And when was this report issued?

23 A. On December the 4th, 2012.

24 Q. Now, if we turn to the second
25 page of the report, under the heading "Scene," you

1 have the same notations that you made with respect
2 to Mrs. Perizzolo.

3 That is, you did not attend the
4 scene. You reviewed digital images on a USB key
5 supplied by the police prior to the autopsy and
6 after the autopsy and prior to the completion of the
7 final report. You reviewed video footage of the
8 mall taken just prior to and including the collapse
9 and additional still images provided by the police.
10 Were these the same images that you reviewed before
11 you issued Mrs. Perizzolo's autopsy report?

12 A. Yes.

13 Q. And did these images, which you
14 reviewed, did they tell you anything about, first of
15 all, the cause of death.

16 A. Not precisely.

17 I mean, you know, there's more than
18 one potential mechanism or cause of death in this
19 kind of scenario.

20 Q. Did they tell you anything about
21 the time of death?

22 A. No.

23 Q. Now if we turn to page 4, the
24 page that ends -04 -- yes, you have it. Thank you
25 -- under the heading "Extremities," you've listed --

1 and we'll go to the detailed description, which is
2 where you've put many of your notations, but under
3 "Extremities," at the bottom of the page, Item No.
4 2, you've written:

5 "There's wrinkling of both
6 palms."

7 Can you explain that to us?

8 A. We typically see this in a wet
9 environment, so somebody who has been pulled from
10 water or a bathtub or a swimming pool or just a very
11 wet environment, you know, outside of water,
12 sometimes called "washer woman's hands."

13 Q. So that was an indication which
14 was consistent with the palms being in water?

15 A. Correct.

16 Q. And if you turn to the next
17 page, page -05, under the heading "Signs of injury,"
18 you've written in No. 3, the same words you used
19 with respect to Mrs. Perizzolo's report:

20 "All injuries show a vital
21 reaction and are recent unless
22 stated otherwise."

23 Did it mean the same thing that you
24 told us it meant in Mrs. Perizzolo's report?

25 A. Yes.

1 Q. Now, I wonder if I could take
2 you to the CT Scan. And I understand you did not
3 have the CT Scan at the time you did the autopsy,
4 but you had it before you prepared the report;
5 correct?

6 A. Yes.

7 Q. And the CT Scan is at tab 45,
8 and it's Exhibit No. 9252. Now, what did the CT
9 Scan tell you -- I'm sorry. This is -- I think I've
10 got the wrong document here. Bear with me. Bring
11 it up. No, this is the wrong one. I'm looking for
12 the CT Scan of the spine, tab 21, and Exhibit No.
13 9248.

14 Now, this is the CT Scan of the
15 chest, abdomen, and pelvis; is that right?

16 A. Correct.

17 Q. And about halfway down the page,
18 there's a paragraph that says:

19 "There is a severely
20 comminuted and displaced Chance
21 type fracture at T8 and T9."
22 What does "comminuted" mean, sir?

23 A. It means there are multiple
24 fragments.

25 Q. And "displaced"?

1 A. Just means it's moved out of the
2 normal location.

3 Q. And can you tell us what
4 a "Chance-type fracture is"?

5 A. Yes. T8 and T9 refers to the
6 eighth and ninth thoracic vertebrae.

7 Q. And just so we understand that,
8 about where would that be in the back?

9 A. It's the back of the chest.

10 Q. So it's about midway between the
11 belt line and below the neck?

12 A. It's below the neck and above
13 the lumbar area.

14 Q. Right. So, sorry, you were
15 telling us what the Chance fracture was.

16 A. Okay. Probably the most
17 succinct way is just to read a little definition of
18 it:

19 "A Chance fracture is
20 a flexion injury of the
21 spine --"

22 Flexion is when you bend forward.

23 "-- first described by G. Q.
24 Chance in 1948. It consists of
25 a compression injury to the

1 anterior or front part of the
2 vertebral body and a transverse
3 fracture through the posterior
4 or back element.

5 It is caused by violent
6 forward flexion, causing
7 distraction injury to the
8 posterior element."

9 So basically when somebody is forced
10 to suddenly bend forward in a violent way, it can
11 fracture the backbone. And so what'll happen is as
12 the person flexes, the front part of the vertebral
13 bodies will get compressed, will get squished, and
14 then the back part will fracture, and then the parts
15 will then come apart or be distracted.

16 And this was most commonly associated
17 in the old days with motor vehicle collisions, you
18 know, front-on collisions, back when cars only had
19 lap belts, and they didn't have shareholder belts,
20 so people's body would be violently flexed forward.
21 Of course, we don't see that much any more in motor
22 vehicle collisions because everybody's got shoulder
23 belts. So it indicates that, in this case,
24 Ms. Aylwin's body was violently flexed forward by
25 the events.

1 Q. When you reviewed the video,
2 interior video at the time of the collapse, you
3 noticed Ms. Aylwin was standing at the time of the
4 collapse?

5 A. That's my memory, yes.

6 Q. And so does this mean, if
7 I understand correctly, that as a result of the
8 collapse, a force hit her in the front of her body,
9 causing her to bend forward sharply, with
10 significant force, to fold, in effect?

11 A. Well, I wouldn't say it hit her
12 in the front of the body.

13 Q. It hit her somewhere that could
14 have been the back?

15 A. I think it's more likely towards
16 the back, which caused her to flex forward, and
17 then, as you'll hear when we get into the other
18 injuries, that, you know, my conclusion is that she
19 went more or less face down onto the floor.

20 Q. Right. And then fell as the
21 floor fell one storey?

22 A. Correct.

23 Q. And I believe you've seen the
24 photographs. You'll agree with me that Ms. Aylwin
25 ended up in, essentially, a prone position?

1 A. More or less, yes.

2 Q. And from your evidence, sir,
3 would it be fair to conclude that the Chance
4 fracture could not have occurred after she was in
5 a prone position with material on top of her? She
6 couldn't flex forward if she was caught beneath
7 concrete?

8 A. I suppose it would depend on
9 exactly how she was trapped. I mean, if her upper
10 body, you know, still had some room for movement and
11 there was some kind of secondary shift or smaller
12 collapse, I suppose it's still possible that it
13 could happen in that scenario, but I would much
14 favour that it happened when she was standing
15 vertically at the kiosk there, and she was struck by
16 the original collapse.

17 Q. Did the Chance fracture cause
18 her death?

19 A. No, not directly.

20 Q. And does the Chance fracture
21 tell us anything about the time of her death?

22 A. No.

23 Q. Now, if I could turn, sir, back
24 to your report, tab 34, Exhibit No. 9260 --

25 A. Which page of my report is that?

1 Q. I'm taking you now to the
2 histology, which is on page 9 of your report.

3 A. Yes.

4 Q. Now, as I understand it,
5 histology is cellular analysis; is that right?

6 A. Yes. And it's done, with us,
7 generally done under a light microscope.

8 Q. And this is one of the important
9 tools that pathologists have, both anatomical and
10 forensic, to determine the situation of the body?

11 A. Correct.

12 Q. And the way it's done is to take
13 cellular sections from various locations in the body
14 and then examine them under a microscope, sometimes
15 with chemical staining to assist; is that fair?

16 A. Yes. A small piece of whatever
17 organ you want to look at is put in a small plastic
18 cassette, and it's sent to the histology lab, and
19 they put it through process an automated process,
20 which fixes the tissue, and then as a standard, they
21 use what's called an H&E stain, hematoxylin and
22 eosin stain, and then, if we want, we can request
23 special stains.

24 Q. So looking at the first item you
25 have under histology, you've noted "left knee

1 laceration. Now, does that mean that you took
2 a cellular sample from the laceration on the left
3 knee?

4 A. Yes. I a representative sample
5 of the skin and the subcutaneous tissue in that
6 area.

7 Q. And you then indicate what you
8 saw when you looked through the microscope; is that
9 right?

10 A. Yes.

11 Q. And the first thing you've
12 listed is:

13 "Acute cutaneous and
14 subcutaneous hemorrhage."

15 Now, what does that mean?

16 A. "Acute" just means that it's
17 very recent. Cutaneous is skin. Subcutaneous is
18 what's under the skin. In this case, it's mostly
19 the fat. Hemorrhage is bleeding.

20 Q. So very recent at the skin and
21 under the skin bleeding?

22 A. Yes.

23 Q. And by "very recent," can you
24 quantify that? And I'll keep asking you that. This
25 is --

1 A. Simply looking at the blood
2 alone, no.

3 Q. Then you go on to say:
4 "No red blood cell breakdown"
5 what does that mean?

6 A. Well, once an injury has
7 occurred, the body reacts, both to heal it and to
8 ward off infection, and as part of that, there's the
9 normal, you know, breakdown of the cells and tissues
10 that are there.

11 So this blood that's there -- and the
12 reason the blood is there, of course, is because the
13 skin and the subcutaneous tissues have been torn.
14 All the little blood vessels that are traversing
15 that area of tearing have themselves been torn, and
16 then the blood gets out of the blood vessels and
17 goes into the -- and infiltrates the surrounding
18 tissue.

19 And then after a certain amount of
20 time, because that blood is not in the right place
21 and it's not where it normally is, so it eventually
22 they -- they break down. The membranes fall apart,
23 and then the insides fall out, and basically they
24 eventually disappear.

25 Q. How long after an injury does

1 the red blood cell breakdown typically commence?

2 A. Well, it depends on what study
3 you read. Some of the studies say -- actually just
4 let me explain something else: One of the ways that
5 you can detect that red cell breakdown is with
6 a special stain.

7 It's called a hemosiderin stain.
8 Now, when a red blood cell breaks down, the
9 components of the red blood itself break down, so
10 one of the main things in a red blood cell is
11 hemoglobin.

12 That's the molecule that carries
13 oxygen to your tissues. And when it breaks down, it
14 breaks into some other things, and one of them is
15 hemosiderin. So if you do the special stain for
16 hemosiderin, and it shows blue under the microscope,
17 it tells you that the red cells have started this
18 process of breaking down.

19 Again, this hasn't been exactly
20 quantified. Some of the studies say you don't see
21 this until about 48 hours, but there's some other
22 authors who claim that they can see it as early as
23 12 hours, so, you know, there's some variation
24 there.

25 Q. So somewhere between 12 and

1 48 hours.

2 A. Yes.

3 Q. The next line you've written is:

4 "No inflammatory/reparative
5 reaction."

6 Can you tell us what is
7 an inflammatory/reparative reaction?

8 A. So, as I said, when the body is
9 injured and the person is still alive, the body will
10 mount a reaction to it, and it will send in
11 inflammatory cells first, and their primary purpose
12 is to, let's say, gobble up the dead tissue and also
13 to ward off infection. And then later on, other
14 kinds of cells will come in and repair the wound so
15 that there will be cells that form new blood
16 vessels. There will be cells that create scar
17 tissue. And in this particular case, none of that
18 was present.

19 Q. How long after an injury does it
20 take before these inflammatory or reparative
21 reactions are seen?

22 A. Again, this cannot be quantified
23 in an exact way because there are so many variables,
24 and there are so many unknowns.

25 In some cases, you can see some

1 changes in the white blood cells as early as 30
2 minutes, although probably in most cases it takes
3 somewhat longer than that. But usually within the
4 first, you know, couple to a few hours, you will
5 start seeing the earliest changes, which is
6 a particular type of white blood cell that comes in,
7 and that was not present here.

8 Q. And that was not present here.
9 What did you conclude with respect to -- let me back
10 up.

11 Is it necessary for the person to be
12 alive for the inflammatory or reparative reaction to
13 occur?

14 A. Yes.

15 Q. So what did you conclude as
16 a result of not seeing an inflammatory or reparative
17 reaction in this cell of the left knee laceration?

18 A. So the reason we're doing this
19 is to try and determine if there was a post --
20 a post-collapse survival interval here.

21 Q. Yes.

22 A. And if so, how long might it
23 have been? But as I said, we can't quantify this
24 exactly. So the complete lack of any of these
25 changes suggests that Ms. Aylwin did not live a long

1 period of time, and certainly this is quite
2 consistent with her being dead almost immediately.
3 But I cannot scientifically exclude the possibility
4 that she did survive for longer than a few minutes.

5 Q. And I think the range you gave
6 us a few minutes ago was 30 minutes to a few hours
7 before you could see this; right?

8 A. Yes.

9 Q. And so, therefore, what you
10 concluded was that with respect to the left knee
11 laceration, the laceration had occurred no -- I'm
12 trying to word this properly. The laceration had
13 occurred, at the maximum, three hours before the
14 death, in a ballpark area?

15 A. Yeah. Possibly a little longer.

16 Q. Possibly a little longer. Thank
17 you. And is it possible, sir, to determine whether
18 there's been an inflammatory/reparative reaction
19 without doing the microscopic cellular analysis with
20 respect to this?

21 A. Well, if the person lives long
22 enough, you can eventually see, you know, gross
23 changes in the wound with your naked eye. I mean,
24 anyone who's cut themselves will know that there are
25 changes that can eventually see, but that takes a

1 lot longer than minutes or hours.

2 Q. It takes days?

3 A. Yeah. You're talking days,
4 weeks, months.

5 Q. Right.

6 A. So in terms of this shorter time
7 span of, you know, minutes to a few hours, that
8 requires microscopic examination.

9 Q. Your next point here was that
10 the hemosiderin stain was negative. If I understand
11 you correctly, your evidence, that's the stain that
12 you did to determine whether or not there was red
13 blood cell breakdown?

14 A. Correct.

15 Q. And it being negative was one of
16 the bases upon which you concluded there was no red
17 blood cell breakdown?

18 A. Correct.

19 Q. You then wrote:

20 "Well-established cutaneous
21 and subcutaneous postmortem
22 bacterial overgrowth."

23 We know that cutaneous and
24 subcutaneous means at and below the skin and
25 postmortem means after death. What is "bacterial

1 overgrowth"?

2 A. Well, all of us, as we're
3 sitting here now, have billions of bacteria in our
4 bodies, primarily in the intestinal tract, and as
5 soon as you die, various parts of your body start
6 breaking down, and the intestinal tract is one of
7 the first things that starts breaking down. So very
8 shortly after you die, these bacteria can escape,
9 and then they can multiply and often quite rapidly.

10 So what this tells us is that
11 Ms. Aylwin didn't die just very immediately before
12 her body was recovered. I mean, it takes some time
13 to establish this postmortem bacterial overgrowth.
14 Now, to anticipate your next question, I can't
15 quantify this at all. There's just so many
16 variables. It's just simply impossible, but, you
17 know, I can certainly say she didn't die, you know,
18 in minutes or a few hours before her body was
19 recovered. She had died earlier than that.

20 Q. And this kind of bacterial
21 overgrowth, do you need to do a cellular analysis to
22 determine whether it's there?

23 A. You can see it just under the
24 standard light microscope on a standard stain.

25 Q. But you need to do the

1 microscopic analysis?

2 A. Yes.

3 Q. You can't tell it from a
4 gross --

5 A. Well, once you see putrefaction
6 grossly, you know there's, again, billions of
7 bacteria in there, but, again, that takes a bit
8 longer.

9 Q. And, in fact, when you did the
10 autopsies, shortly after the autopsies were
11 completed, you noted that neither body showed any
12 signs of decomposition; correct?

13 A. Yes, which was somewhat
14 interesting.

15 Q. Why was that interesting to you?

16 A. Well, I think it was generally
17 accepted that Mrs. Perizzolo, you know, had been
18 dead for four days when her body was recovered, and
19 I know there's some debate about how long Ms. Aylwin
20 had been dead, but both of them, including
21 Mrs. Perizzolo, showed a surprising lack of
22 decomposition, at least grossly and externally,
23 considering that certainly at least one of them had
24 been dead for, I think, pretty much four full days.

25 And, you know, there are legitimate

1 explanations for that.

2 Q. But do I understand your
3 evidence correctly that the absence of being able to
4 see, on a gross basis -- that is, not through the
5 microscope -- any sign of decomposition gave you no
6 information one way or the other as to whether or
7 not there was a post-collapse survival?

8 A. Yeah, that's correct. I mean,
9 the knee-jerk reaction might be, "Well, they're not
10 decomposed. They couldn't have been dead very
11 long," but that would be an incorrect assumption.

12 Q. Now, the next item you list
13 under the histology is the right shin laceration,
14 and you note that:

15 "The technologist was unable
16 to cut a section."

17 But then going down to Point No. 21,
18 it looks like you had another attempt, and it was
19 successful?

20 A. Yeah. Skin sections are often
21 difficult to cut for the technologist because they
22 have a lot of fat in them, and the fat can be
23 difficult. Sometimes they just can't get it to
24 stick to the slide, and there are various technical
25 issues. So I don't know whether it was a different

1 technologist had a go at it or the second piece
2 I submitted was just technically more favourable.
3 I'm not sure why they were successful the second
4 time.

5 Q. And, in any event, your
6 description of what you saw under the microscope
7 with respect to the right shin laceration was the
8 same. You used exactly the same words as with
9 respect to the left knee; correct?

10 A. Correct.

11 Q. And so I take it your opinion is
12 the same with respect to the right shin laceration?

13 A. Correct.

14 Q. And then Items 11 to 15, you
15 note:

16 "Right 7th and 8th rib
17 fractures."

18 And you wrote here:

19 "Acute hemorrhage of bone and
20 supporting soft tissues."

21 And that means there was bleeding?

22 A. Correct.

23 Q. And then "No red blood cell
24 breakdown," which is the same as you told us with
25 respect to the left knee laceration, and that led

1 you to the same conclusion?

2 A. Yes. Again, there's just
3 absolutely no reaction to this injury by the body.

4 Q. And "No inflammatory/reparative
5 reaction," and that's hemosiderin stain is negative,
6 and that's the same as you had seen with respect to
7 the left knee; correct?

8 A. Correct.

9 Q. I note that you don't indicate
10 that there was this well-established cutaneous and
11 subcutaneous postmortem bacterial overgrowth. Done
12 does that mean you looked for it and didn't see it?

13 A. Yeah. Well, the skin
14 lacerations were, you know, much more exposed.

15 This is kind of a deeper, more
16 protected area so it -- as we'll hear later about
17 vitreous, certain areas are more protected from
18 bacterial contamination.

19 Q. Right. And then the last item
20 you note with respect to the rib fractures is:

21 "Normal cellular bone marrow."

22 What is that about?

23 A. That just means that the various
24 cells that are in the bone marrow are normal, so she
25 didn't have evidence of leukemia or lymphoma or any

1 other kind of cancer or any other noncancerous
2 abnormality of her bone marrow. Her marrow was
3 normal.

4 Q. Right. Now, you did no cervical
5 analysis for the other abrasions; correct? Sorry,
6 cellular cervical. Medical terms fly around
7 sometimes in my head, sir. You did no other
8 cellular analysis for the other abrasions?

9 A. No. I selected the two worst
10 lacerations, and then I selected some of the bad
11 fractures in her back.

12 Q. And if you turn to tab 11, which
13 is Exhibit No. 9240.

14 A. Is that my autopsy report still?

15 Q. No. These are the notes you
16 made at the time of the postmortem examination.

17 A. Oh, yes.

18 Q. That's what they are; right?

19 A. Those are my rough notes that
20 are made at the time of the examination, yes.

21 Q. Right. So if you turn to the
22 page that ends -57.

23 A. Yes.

24 Q. It looks like you've made
25 drawings of abrasions and lacerations that you noted

1 when you were examining Ms. Aylwin; is that correct?

2 A. Yes.

3 Q. And so you noted an abrasion on
4 the left side of the scalp just above the ear?

5 A. Yes.

6 Q. You noted a larger abrasion
7 extending from just forward and above the right ear,
8 over to halfway across the eyebrow, the right
9 eyebrow?

10 A. Correct.

11 Q. It looks like you've got some
12 measurements there.

13 A. Yeah. The abrasion is 9 times
14 3 centimetres.

15 Q. 9 centimetres long,
16 3 centimetres wide?

17 A. Yes.

18 Q. Right. And then if you turn to
19 the next page, there are, again, a number of
20 abrasions noted on the head, on the right shoulder,
21 the inner -- what do you call the portion of the arm
22 which is on the same side as the palm of the hand?

23 A. I'm sorry.

24 Q. The side of your arm that's on
25 the same side as the palm of your hand, what's the

1 medical term for that?

2 A. Yeah. Perhaps we should just
3 clarify how we describe --

4 Q. Sure. That's probably a good
5 idea.

6 A. -- locations in the body. We
7 use what's called "anatomical position."

8 Q. Yes.

9 A. Anatomical position is when the
10 body is standing upright in a vertical position,
11 facing forward with the arms at the side and the
12 palms facing forward.

13 So the side that's on the palm, we
14 just call it anterior or front.

15 Q. So she had some abrasions on the
16 anterior of her right arm at the shoulder and then
17 halfway down to her elbow?

18 A. Yes.

19 Q. And also on the left arm, just
20 below her elbow, anteriorly?

21 A. Yes.

22 Q. And the shin and knee, the right
23 shin and left knee abrasions are shown there as
24 well?

25 A. Yeah. And lacerations.

1 Q. And lacerations.

2 A. Including the one I sampled.

3 Q. Right. And then if you turn to
4 the next page, the page that ends -59, this shows
5 the body from the back. And there are a large
6 number of abrasions on the back of the arms and the
7 back -- Ms. Aylwin's back as well; correct?

8 A. Correct.

9 MR. DOODY: Mr. Commissioner, at this
10 stage, I'm going to ask the witness to look at some
11 photographs, and I would ask that you would repeat
12 the publication ban. And these photographs are
13 jointly marked as Exhibit No. 9674.

14 THE COMMISSIONER: Thank you. I'll
15 ask our technician, Paul, to make sure the screen is
16 closed downstairs.

17 In addition, I hadn't mentioned it
18 before, but there are no photographs been taken of
19 the screens in the press room. I reiterate the
20 publication ban, and we'll take a couple of minutes
21 for the television set to be closed off.

22 MR. DOODY: Thank you.

23 --- RECESS AT 10:19 A.M.

24 --- RESUMED AT 10:25 a.m.

25 BY MR. DOODY:

1 Q. Now, if I could just have --

2 THE COMMISSIONER: Just so we
3 understand, the video portion will not be broadcast,
4 but the audio portion will.

5 MR. DOODY: Downstairs.

6 THE COMMISSIONER: Yes. That's
7 understood; right?

8 MR. DOODY: Yes. Thank you,
9 Mr. Commissioner.

10 BY MR. DOODY:

11 Q. If we could have Exhibit No.
12 9674, tab 2.

13 And just before we bring it up, sir,
14 there's a -- there's a small brief in front of you.
15 It's got 13 tabs and a buff cover. That's it.

16 And at tab 2, this is a photograph of
17 Ms. Aylwin which was taken at 1:42 p.m. on the
18 27th of June shortly after she was removed from the
19 rubble pile and before -- before you received her in
20 Sudbury. And we can see on this photograph
21 the abrasion on her right shin and on her left knee,
22 from which you took the -- the cell tissue samples;
23 correct?

24 A. Yes, they're actually
25 lacerations but ...

1 Q. Sorry. What's the difference
2 between a laceration and an abrasion?

3 A. An abrasion is just basically
4 a scrape. It involves the -- just the surface layer
5 of the skin, whereas a laceration is deeper and
6 involves a splitting of the skin, you know, through
7 deeper layers.

8 Q. Okay. And we can also see on
9 Ms. Aylwin's left elbow, on the outside, that there
10 is a laceration there, as well; correct?

11 A. I didn't actually describe that
12 as a laceration. I just called it patchy abrasion
13 and brownish discolouration of both elbows so it's
14 -- it's more of a deep scrape and the brownish
15 discolouration is either from debris or it could be
16 post mortem air drying artifact.

17 Q. Okay. And if I could take to
18 you tab 4, it appears -- this is a photograph of the
19 upper half of Ms. Aylwin's torso, and it appears
20 that there was some abrasions on her face, and
21 perhaps lacerations.

22 A. Yes. I described abrasions
23 above the right eyebrow on the left side of the
24 forehead, the mid forehead --

25 Q. And --

1 A. -- and on the nose. Sorry.
2 Yes.

3 Q. And on the nose?

4 A. Yes.

5 Q. Thank you. And it also
6 showed -- it appears that there is blood on
7 Ms. Aylwin's right-hand; do you see that?

8 A. Yes.

9 Q. And if you go back to your
10 drawing and notes, at tab 11, Exhibit No. 9240 at
11 page 59, you don't show any lacerations or abrasions
12 on the right-hand, on the knuckles, do you?

13 A. Yes. That blood on her hand
14 just washed off, so it -- it was from a different
15 source.

16 Q. And if we go back to tab 4 of
17 Exhibit No. 9674, it appears that Ms. Aylwin had
18 significant bleeding from her nose?

19 A. Correct.

20 Q. And the blood on her right-hand,
21 would that be consistent with the blood from her
22 nose having leaked onto her hand if the right hand
23 was in proximity to her -- the lower portion of her
24 face?

25 A. Yes.

1 Q. And if I could ask you to turn
2 to tab 17, and this is Exhibit No. 9245.

3 MR. DOODY: And this is an exhibit in
4 respect of which you already made a publication ban,
5 Mr. Commissioner.

6 BY MR. DOODY:

7 Q. And if I could have you turn to
8 the page that ends -008. It's the second last
9 photograph.

10 And this is a photograph of
11 Ms. Aylwin on site before the body was moved and
12 after the concrete which was above her had been
13 lifted. And you can see that her arm, her right arm
14 and her left arm, they're bent at the elbows with
15 the forearm pushed up tight against the face.

16 Is that position of the body
17 consistent with Ms. Aylwin -- that position of the
18 body, together with the blood on her right-hand and
19 the blood from her nose, is that consistent with her
20 hands being in front of her face at the time she was
21 put in that position?

22 A. Yes.

23 Q. If we go back to Exhibit No.
24 9674 to tab 6, this is a close-up of her hands. We
25 can see, first of all, there's -- there's abrasions

1 or, perhaps, lacerations on her left hand in the --
2 the two -- the index finger and the middle finger of
3 her left hand; correct?

4 A. Yes, I documented some irregular
5 abrasions and superficial lacerations on the back of
6 her left forearm -- forearm and hand, a minor
7 laceration on the back of her right second finger.

8 Q. Yes. And the -- the blood that
9 we can see on her right-hand there, that appears to
10 be wet. Would you agree with me?

11 A. Yeah. It -- it appears
12 relatively fresh. I would agree with that.

13 Q. And is blood of that -- like
14 that, consistent with a death some 72 hours prior to
15 this photograph being taken?

16 A. I'm -- I'm not an expert on --
17 on what happens to blood at scenes, as I don't
18 generally go to scenes and I -- I've never watched
19 blood dry at a scene. But, again, like you've heard
20 a number of times already, there's a lot of
21 variables on how quickly these various processes
22 happen. So it's not inconsistent with the time span
23 that you're talking about, under certain conditions.

24 Q. Would those conditions include
25 the hands being immersed in water?

1 A. That would be part of it and
2 perhaps the hands being just somewhat protected from
3 the environment which maybe goes along with the
4 discussion of why they don't appear to be
5 decomposed.

6 Q. It would also be consistent,
7 would it not, with a death occurring prior to
8 72 hours -- in other words, some time in that
9 timeframe?

10 A. Yes.

11 Q. And you have already told us
12 that -- that the hands were wrinkled, as if they'd
13 been immersed in water.

14 A. Yes.

15 Q. Now, if I could have you turn to
16 tab 10 of this exhibit number Exhibit No. 9674, this
17 is a photograph of the -- is that an abrasion or
18 a laceration?

19 A. Well, there's both.

20 Q. Okay. And this is a significant
21 abrasion or laceration on Ms. Aylwin's right
22 forehead extending from about halfway across her
23 right eyebrow back below the hairline, and I think
24 this is the one that you measured at 9 centimetres
25 by 3 centimetres, was it? A bit hard to tell from

1 this photograph.

2 A. Yes. That's one of them, yes.
3 There's -- there's the one that's 9 by 3, and then
4 there -- there's the smaller one that I measured
5 there.

6 Q. And you took no cellular sample
7 from this injury?

8 A. No.

9 Q. So, I take it from your earlier
10 evidence that you don't know whether there has been
11 the reparative reaction that you referred to with
12 respect to the injuries that you did take samples
13 from?

14 A. No. Although grossly it looks
15 exactly like the other ones and it looks very fresh.

16 Q. But you told us a little while
17 ago that you could not make any conclusions from the
18 gross examination, which is why you did the cellular
19 examinations; correct?

20 A. That's true.

21 Q. So, is it fair to say that you
22 don't know whether this injury occurred at the same
23 time as the shin and the knee and the ribs?

24 A. No, I can't establish that, and
25 I wouldn't have even been able to establish it for

1 sure, even with the microscopic examination.

2 Q. And if I could have you turn to
3 tab 5 of Exhibit No. 9674.

4 This is a photograph of Ms. Aylwin's
5 left forearm. She's wearing her watch. And between
6 her watch and the base of her hand, there is
7 a triangular-shaped -- is that an abrasion or
8 a laceration?

9 A. That's an abrasion.

10 Q. So triangular-shaped abrasion,
11 and on the area surrounding that abrasion, you'll
12 see that there's -- the skin appears to be slightly
13 discoloured; do you agree with me?

14 A. Yes.

15 Q. And if you turn to tab 12 of
16 this exhibit, this is a photograph of the same -- of
17 the outside left wrist, which is taken at
18 10:13 p.m., some nine hours after -- or eight and a
19 half hours after the photograph that we just looked
20 at. And it -- it appears to me that the colour of
21 the skin in the area surrounding that
22 triangular-shaped abrasion has darkened
23 significantly; would you agree?

24 A. Yes.

25 Q. Can you explain to me what would

1 cause that? That is what appears to be bruising
2 which has arisen after death, in that eight and
3 a half hour period?

4 A. Well, I think there's a -- at
5 least three processes that have gone on in that
6 intervening nine hours. One is you get this post
7 mortem air drying artifact that I've referred to
8 earlier, which can make the abrasions look darker.
9 Also, after death the body will -- will gradually
10 dehydrate and this will make -- particularly
11 abrasions more prominent and somewhat darker
12 looking. And the third thing is you can get the
13 appearance of bruises after death, which were not
14 visible at an earlier post mortem interval. So, in
15 other words, someone may die, you might not see
16 a bruise; and if you go back and re-examine them
17 some number of hours later you may now may see
18 a bruise.

19 And that's because the blood
20 originally was under the skin. A bruise is due to
21 tearing of small blood vessels underneath the skin
22 and even after death, that blood can migrate to the
23 surface, but that can take some time so that's a --
24 that's a normal post mortem process.

25 Q. And can you tell me, at what

1 point following the death would these processes
2 commence?

3 A. Well, again, it is highly
4 variable. The air drying artifact can start very
5 quickly, but it depends -- it depends on the
6 situation, how well the wound is protected from the
7 environment. So a wound that's underneath a piece
8 of clothing may show none, a wound that's totally
9 exposed to the air may start showing it very
10 quickly. The migration of the blood from the
11 bruise, that's -- that's highly variable. I really
12 can't quantify that. The dehydration, again,
13 it's -- it's highly variable.

14 Q. The air drying that you told us
15 about, Ms. Aylwin was not wearing any clothing
16 covering her left forearm; correct?

17 A. No. She was just wearing
18 a t-shirt on her upper -- and a bra on the upper
19 part of her body. So this would have been exposed
20 to the air and, yes, that -- that would explain why
21 she's got some obvious air drying artifact in the
22 nine hours.

23 Q. If she had died, say 72 hours or
24 shortly thereafter or slightly less than that, prior
25 to the first photograph being taken at 1:43 p.m.,

1 would you have expected to see the darkening of the
2 skin before that? In other words, at 1:43 there
3 wasn't much bruising at all, eight and a half hours
4 later there was significant amount of bruising the
5 photographs.

6 If she had died earlier,
7 significantly earlier, would you have expected to
8 see that bruising at the time she was removed from
9 the -- from there scene?

10 A. You may or may not. It's --
11 it's a highly variable situation.

12 Q. Is this kind of bruising that we
13 see, is it the kind of -- in this photograph, is it
14 the kind of bruising that -- that if she had lived
15 after the abrasion -- and the application of the
16 force that caused the bruising, if she had lived
17 after that would you have expected to see a bruising
18 of that sort develop?

19 A. I'm not sure I understood the
20 question.

21 Q. Well, you've told us that this
22 kind of bruising can develop when somebody has
23 an abrasion of this sort, and subsequently dies and
24 that the bruising can develop post mortem; correct?

25 A. Yes.

1 Q. Would you expect this sort of
2 bruising to develop ante mortem if she had that kind
3 of abrasion or pressure but continued to live?

4 A. Yeah, and that's quite common.
5 I think most people have probably experienced that
6 where they -- they hit themselves with something and
7 they don't see anything right away, and they wake up
8 the next morning and they've got a bruise, so, yes,
9 that's a very common phenomenon.

10 Q. So can we conclude from the fact
11 -- anything from the fact that the photograph taken
12 at 1:43 p.m. shows the abrasion and no bruising?
13 Can that -- can that assist us in determining how
14 long before the time of death that -- that injury
15 occurred?

16 A. No.

17 Q. If it had occurred 72 hours
18 earlier, would you not have expected bruising to
19 develop inside of three days?

20 A. It's highly variable. You just
21 cannot quantify it, and you can not extrapolate
22 backward to make any kind of objective
23 determination.

24 Q. So -- so it's your evidence that
25 one can have an abrasion and significant injury

1 and -- and not develop a bruise for three days and
2 then develop a bruise after death?

3 A. Yes, that's possible.

4 Q. Is it likely?KB starts here .

5 A. I don't know how to quantify
6 that.

7 Q. Now, if I could take you back to
8 your autopsy report, which is Exhibit No. 9260, and
9 page 5, the bottom of the page, you've listed:

10 "Indicators of asphyxia,
11 florid periorbital and facial
12 petechial hemorrhages."

13 What's that? I think you told us
14 that with respect to their absence in
15 Mrs. Perizzolo, but perhaps you could repeat that.

16 A. We probably should take a step
17 back.

18 Q. Sure.

19 A. First of all, what's asphyxia?

20 Q. Okay.

21 A. In its broadest terms, asphyxia
22 just means lack of oxygen, so there's many, you
23 know, many things that can do that, from drowning to
24 strangulation to carbon monoxide poisoning and on
25 and on and on. And one of the causes, as in this

1 case, is so-called crush asphyxia.

2 Now, why did I say "indicators"j?

3 Well, none of these things are specific for
4 asphyxia. You can see these things in many other
5 conditions. So they're not pathognomonic for
6 asphyxia.

7 Q. Pathognomonic?

8 A. Yes.

9 Q. What does that mean?

10 A. That means that asphyxia is not
11 the only one and only thing that gives you petechia;
12 many things can.

13 Q. Right.

14 A. So these things indicate the
15 possibility of asphyxia, and especially when you've
16 got more than one or you've got several. It sort of
17 increases your confidence that these changes are
18 related actually to asphyxia, and, of course you
19 take it in the context of the whole case. So what
20 we've got here is we've got some things that you
21 commonly see in asphyxia, which, you know, is
22 expected in this case actually.

23 So "flora," just means they're
24 pronounced. "Periorbital" just means around the
25 eyes, and "facial" just means on the face. So she

1 had a bunch of these little red spots on her face
2 and around the eyes, and they were quite prominent.

3 Would you like me to keep going
4 through the other ones?

5 Q. Yes, certainly. Yes.

6 A. So again, "flora bilateral
7 subconjunctival petechial hemorrhages," so again,
8 the conjunctival we talked about earlier is the thin
9 covering of the eye. And so, again, they were
10 present in both eyes and were very obvious.

11 "Bilateral periorbital edema" just
12 means swelling around the eyes, and I noticed in
13 some of the pictures we looked at earlier that was
14 quite obvious, and there was some petechiae on the
15 inside lining of the mouth. And then I listed some
16 things that --

17 Q. You are turning over the page?

18 A. Yeah. To No. 5 on page 6.

19 Q. Just wait until we have it up on
20 the screen --

21 A. Oh, sorry.

22 Q. -- so the Commissioner and the
23 public can follow. Thank you.

24 A. And so then I listed some other
25 things, or one other thing anyway, that could

1 contribute to asphyxia in this case beyond the
2 crushing mechanism. And so I listed the fact that
3 her nose was blocked by blood and mucous and debris.
4 So that may have contributed to her lack of oxygen.

5 Q. Her mouth was not blocked; it
6 was her nose?

7 A. Well, we can't tell that.
8 I mean, she was under a lot of debris there, and,
9 you know, I wasn't there. I'm not clear how well it
10 was established that her mouth or the rest of her
11 face was not occluded in some way by all that debris
12 or by part of her body, including her own hand.

13 THE COMMISSIONER: You can't say one
14 way or the other in relation to the mouth?

15 THE WITNESS: Correct.

16 THE COMMISSIONER: Is what you're
17 saying, but the nose was blocked?

18 THE WITNESS: Right.

19 BY MR. DOODY:

20 Q. And then your last item is:
21 "Generalized organ and tissue
22 congestion."

23 A. Yeah, which is completely
24 nonspecific, but certainly in crush asphyxias, that
25 tends to be prominent.

1 Q. And if I could take you to?

2 THE COMMISSIONER: By "congestion,"
3 what does that mean?

4 THE WITNESS: That just means
5 excessive fluid.

6 BY MR. DOODY:

7 Q. And what is the cause of that?

8 A. Well, probably the best way for
9 me to answer that would be to go into how crushing
10 kills you. Do you want me to do that now?

11 Q. Well, I was going to take you to
12 the cause of death, so why don't we do that, and
13 I'll take to you the cause of death, and you can
14 explain that.

15 A. Okay. So if we go --

16 Q. On page 10, under the heading
17 "Cause of death" --

18 A. Right.

19 Q. -- you conclude that the cause
20 of death is crush asphyxia. And under the heading
21 "Opinion," if you go up to the top of that page --
22 could I have that brought down please -- you write:

23 "Postmortem examination showed
24 significant blunt force/crush
25 injury to the posterior chest,

1 including severe fracturing of
2 thoracic vertebrae and multiple
3 posterior ribs. Along with less
4 severe blunt force/crushing
5 injury to the anterior chest and
6 florid stigmata of asphyxia,
7 this constellation of findings
8 is typical of death due to
9 'crush asphyxia' (also known as
10 compressive or traumatic
11 asphyxia and Perthe's syndrome).

12 The findings in this specific
13 case are most consistent with
14 the deceased terminating in
15 a more or less prone position.

16 "2. Mechanisms of death in
17 crush asphyxia include
18 prevention of breathing
19 movements and mechanical
20 limitation of lung expansion as
21 a result of active chest
22 compression and rapid increase
23 in intrathoracic pressure such
24 that it exceeds that of venous
25 return. Blood cannot re-enter

1 the chest. In these
2 circumstances, innumerable
3 postcapillary venules burst
4 under hydrostatic pressure,
5 producing the most florid
6 physical signs of raised
7 intravenous pressure."

8 Can you explain that, sir?

9 A. Okay. Do you want me to go
10 right back to the beginning?

11 Q. Sure.

12 A. Okay. So as we've heard
13 already, she did have quite significant blunt force
14 or crushing injury to her back, so that included --
15 there was various lacerations and abrasions and
16 indentations of the skin of the back, and then
17 underneath that, there were multiple fractures of
18 her spinal column. We talked about that earlier,
19 the Chance fracture due to the violent hyperflexion
20 of the spine. And as well, we had multiple severe
21 fractures of the ribs at the back.

22 So what that implies is something
23 blunt very forcefully struck her back air and caused
24 her to flex forward, and then, presumably, she then
25 went forward and hit the floor.

1 Now, the floor probably would've been
2 flatter and smoother than whatever hit her back, so
3 there may have been some dissipation of the forces,
4 which may be part of the reason why the injuries on
5 the front weren't as bad. But she did have, on the
6 front, some bruising there, and she did have
7 a fracture of her breastbone.

8 So, anyway, so she basically was --
9 she was crushed from the back downwards between the
10 debris that hit her on the back and, I'm assuming,
11 the floor underneath her at the front.

12 As I said, it's got some other terms.
13 Some people call it compressive asphyxia, which
14 describes what happens: The person is compressed.
15 And then there are some other less-specific forms.

16 Q. So if I understand you
17 correctly, she was compressed or squeezed. The air
18 was pushed -- she was prevented from breathing?

19 A. Right. So that comes to the
20 second paragraph, which is the mechanism. So
21 there's -- you know, there's several here.

22 THE COMMISSIONER: Before you go
23 there, what is "Perthe's Syndrome"?

24 THE WITNESS: Okay. That's the name
25 of a gentleman who first described this syndrome in

1 1900.

2 THE COMMISSIONER: And what is that
3 syndrome, because it's not "or" it's "and" Perthe's?

4 THE WITNESS: Well, it's also known
5 as all of those things. They all --

6 THE COMMISSIONER: They all mean the
7 same thing?

8 THE WITNESS: Yes.

9 THE COMMISSIONER: Okay.

10 THE WITNESS: Okay, so the
11 mechanisms, there is -- well, there is certainly at
12 least three.

13 So basically with all this weight
14 compressing her, she wouldn't have been able to move
15 her ribcage. Now, the way -- the reason your
16 ribcage has to move to breathe is the ribcage acts
17 like a bellow, you know, one of those things you use
18 on your fireplace where you push it in to blow the
19 air out, and then you open it up to suck the air
20 back into it. That's basically how the ribcage
21 works.

22 So if you can't create that bellow
23 effect, you're not going to get air going in and out
24 of your lungs. The other part of that bellow
25 mechanism is your diaphragm, which is a big, flat

1 muscle that separates your chest from your abdomen.
2 So, again, you need to move that diaphragm up and
3 down to help your lungs contract and expand to move
4 the air in and out. So she wouldn't have been able
5 to move her diaphragm either.

6 And also, this pressure on her chest
7 would create significantly increased pressure inside
8 the chest. Now, the blood that returns to the heart
9 from all over the rest of the body is in veins, and
10 it's under relatively low pressure. So if there's
11 a sudden increase and a significant increase in
12 what's called the intrathoracic pressure, the
13 pressure inside the chest, it will be greater than
14 the pressure of the blood in the veins.

15 So now the venous blood cannot get
16 back to the heart, so you lose what's called
17 "cardiac return." And if there's no cardiac return,
18 there's no cardiac output, so nothing in, nothing
19 out.

20 So very quickly, her heart would not
21 have had any blood in it to pump, so obviously,
22 again, that's something that would kill you quite
23 quickly.

24 And then with all this buildup of
25 pressure from the weight as well as the fact that

1 the heart is not working, so there is a back
2 pressure into the other organs and tissues, this
3 increases the pressure throughout the blood vessels
4 in the body.

5 So the little ones will burst and
6 give you those little petechial hemorrhages. The
7 bigger ones will just leak fluid and will make
8 everything congested, so that's what she had.

9 BY MR. DOODY:

10 Q. And this crushing, do
11 I understand correctly that the crushing could be --
12 to use the -- to use a prosaic example, if you had
13 a rubber hose and it was partially kinked, some
14 water or some air could still get through, and if it
15 was completely kinked, no air or no water could
16 still get through. And it's the same thing with
17 respect to crush asphyxia. You can be either
18 complete -- be unable to have any air enter, unable
19 to breathe anything, no air in; is that consistent
20 with your understanding?

21 A. Yes. But it doesn't take a lot
22 of weight to create the circumstances that we've
23 been talking about. You know, it can happen just
24 from having someone kneeling on someone's back who's
25 face down on a firm surface.

1 Q. Right. But to use my example,
2 if it's only partially obstructed, then the death
3 would be less rapid than if it was completely
4 obstructed?

5 A. That's a fair general statement,
6 yes.

7 Q. And, in fact, some people have
8 this syndrome or are crushed in this way and
9 survive?

10 A. Yes.

11 Q. And among the symptoms of this
12 Crush Syndrome are purple coloration in the face in
13 extreme cases?

14 A. That wouldn't be a symptom. It
15 would actually be a sign.

16 Q. Sorry.

17 A. Sorry to nitpick, but --

18 Q. We each have our --

19 A. -- otherwise, you're correct.

20 Q. We each have our own language in
21 our own world, Doctor, so I'm happy to have you
22 correct me.

23 So in extreme cases, the skin turns
24 purple?

25 A. Yeah. The face gets effused is

1 the term we use.

2 Q. Right. And Ms. Aylwin did not
3 have that kind of indication or -- sorry, what did
4 you call it?

5 A. Suffusion.

6 Q. She did not have that. She did
7 have petechia, however, which are also
8 an indication; correct?

9 A. Yes.

10 Q. Now, Doctor, does the conclusion
11 that Ms. Aylwin died from crush asphyxia assist in
12 determining whether the injury that caused her death
13 occurred at the time of the collapse or sometime
14 later? It's just the cause of death, does that
15 assist in that analysis?

16 A. Not in and of itself, no.

17 Q. Okay.

18 MR. DOODY: Mr. Commissioner, it's
19 about almost 11 o'clock. Perhaps this would be an
20 appropriate time.

21 THE COMMISSIONER: Let's take our
22 regular morning break at this point, Mr. Registrar.

23 MR. DOODY: Thank you,
24 Mr. Commissioner.

25 --- RECESS AT 10:57 a.m.

1 --- RESUMED AT 11:19 a.m.

2 BY MR. DOODY:

3 Q. Thank you, Mr. Commissioner.

4 Just before the break, Dr. Queen, you
5 told me that the conclusion that Ms. Aylwin died
6 from crush asphyxia, on its own, was not of
7 assistance in determining whether the injury that
8 caused her death occurred at the time of collapse or
9 some time thereafter. But you found that other
10 things that you examined and considered did assist
11 you in drawing a conclusion about that; correct?

12 A. Yes.

13 Q. And if we could just take a look
14 at them. In your opinion, on Item No. 4 -- this is
15 in Exhibit No. 9260 on page 10. You wrote:

16 "The fingernails of the
17 deceased were clean with no
18 evidence of fresh damage,
19 suggesting the lack of or
20 inability to mount any attempt
21 to 'claw' her way out of the
22 situation."

23 Can you explain that?

24 A. Well, this particular opinion is
25 not really based on my credentials as a forensic

1 pathologist.

2 For me, that was just sort of common
3 sense, that -- well, I guess it's partly medical.
4 I mean, I am aware that when people are in
5 situations where either they panic or they -- their
6 brain's oxygen supply is starting to go down and
7 their level of consciousness is starting to go down,
8 they will do reflexive things, and I think one of
9 those reflexive things is to try to claw your way
10 out of a situation like this.

11 Q. All right. But it's also true,
12 sir, as you've told us, that the hands were --
13 indicated that they had been immersed in water at
14 some point?

15 A. It appeared that way, yes.

16 Q. So if there were, in fact,
17 something underneath the nails, there is potential
18 for it to have been removed by the water?

19 A. Well, I would expect in
20 a situation like that, that any clawing would be
21 fairly vigorous, and I would expect there to be more
22 than just some loose debris under fingernails that
23 could be easily washed out.

24 I mean, I was thinking more in terms
25 of abrasions of the fingertips and breaking of the

1 fingernails, evulsion of the fingernails.

2 Q. In Item No. 5 you wrote:

3 "Microscopic examination of
4 representative skin lacerations
5 and rib fractures shows no
6 evidence of any inflammatory or
7 reparative reaction (which would
8 be expected in the event of
9 a significant survival
10 interval)."

11 And that's what you told us with
12 respect to the cellular samples that you took from
13 the left knee, the right shin, and the ribs; right?

14 A. Correct.

15 Q. And would you agree with me that
16 it is likely that with the body in the position it
17 was in, that the crush injury that caused the crush
18 asphyxia would have caused damage to the shin, knee,
19 and rib cage? In other words, those were parts of
20 the body which would have been damaged by the crush
21 injury?

22 A. Well, certainly the chest. You
23 know, I can't be sure exactly what the mechanism of
24 the extremity injury is. Presumably, they're struck
25 by some debris, whether it's the same debris

1 crushing her back, I can't be sure.

2 Q. If you take a look at tab 17,
3 sir, Exhibit No. 9245, tab -- the second-last
4 photograph, the page that ends -08. This is
5 a photograph of Ms. Aylwin after the concrete which
6 had been covering her was removed, that concrete you
7 see elevated above her, and we can see that the
8 right -- her right shin, sorry, is under the slab
9 that was lying on top of her.

10 A. Yes.

11 Q. And that's in the -- if that
12 slab was lowered, that would -- that could come in
13 contact with her at the location where she suffered
14 the lacerations on the right shin?

15 A. That's one possibility.

16 Q. Now, if I could go back to your
17 opinion at tab 34, Item No. 6, you stated:

18 "Separate examination of the
19 brain by a neuropathologist (Dr.
20 Graham) shows no evidence of
21 changes that may be seen when
22 there is a survival interval
23 following hypoxic ischemic or
24 traumatic brain injury. (No
25 hypoxic ischemic encephalopathy

1 or diffuse axonal injury.)"

2 Now, do I understand that to be
3 saying that the brain showed no evidence of a
4 survival interval following one of those injuries?

5 A. Yeah, basically. She clearly
6 had blunt impact to her head, and she had some
7 external injuries, but even more prominent was the
8 bleeding that she had on the deep aspect of her
9 scalp on both sides.

10 So either, you know, some of the
11 debris came down and struck her on the head or her
12 head went down and struck, presumably, the floor, so
13 she did have some degree of head injury. So it's
14 possible that you could, in that circumstance, also
15 have some brain injury.

16 Q. And what you're saying here is
17 there's no evidence of changes that you might see if
18 you had those kinds of brain injuries and there was
19 a survival interval; is that what you're saying?

20 A. Yes, that's correct.

21 Q. But, in fact, she did not have
22 those kinds of brain injuries; correct?

23 A. Yes.

24 Q. Because if you turn to the
25 report from the neuropathologist, Dr. Gaytan Graham,

1 which is tab 35, Exhibit No. 9261, this is the
2 report that you referred to?

3 A. Yes, that's the neuropathology
4 consultation report. And if you turn to the third
5 page of it, you can see under the heading
6 "Neuropathological diagnosis," Item No. 2:

7 "There was no histologic
8 evidence of hypoxic ischemic
9 encephalopathy."

10 And No. 3:

11 "Acute diffuse axonal injury
12 was not identified."

13 A. Correct.

14 Q. So he found neither of those
15 kinds of injuries; right?

16 A. She, yes.

17 Q. Sorry. And if you go back to
18 your report, then, in Item No. 6, am I right to
19 conclude that what you're saying in Item No. 6 is:
20 If she'd had those kind of injuries and survived,
21 there might have been some evidence of survival, but
22 she did not have those kind of injuries, so,
23 therefore, what you're talking about in No. 6
24 doesn't add anything to the issue of how long after
25 the collapse the crush injury occurred?

1 A. Yeah. There's one other thing
2 you have to understand, though. These changes, like
3 many of the things we talked about are not
4 immediate. They take some time.

5 So, in fact, their absence doesn't
6 rule out -- the absence of their identification does
7 not rule out their presence.

8 Q. Well, two things: One, it
9 didn't help you one way or the other?

10 A. No. It's one of these cases
11 where, yeah, a negative doesn't particularly help.

12 Q. So what you're really saying in
13 Item No. 6 is the neuropathological consult gave you
14 no information that could assist in making
15 a determination of this issue.

16 A. That's correct.

17 Q. And then Item No. 7, you wrote:

18 "Biochemical analysis of
19 vitreous (eye) fluid shows no
20 evidence for dehydration,
21 hemoconcentration, or
22 hypoglycemia, some or all of
23 which would be expected in the
24 event of a significant survival
25 interval, particularly in

1 a diabetic with no fluid
2 intake."

3 So let's take this one step at
4 a time. Vitreous fluid is from the eye?

5 A. Yes.

6 Q. And why is it in a postmortem
7 analysis, pathologists look at the vitreous fluid?

8 A. Well, we do it to do some
9 biochemical testing, so the question you should ask
10 before that is: Why don't we just use the blood?

11 Q. Okay, why don't you just use the
12 blood?

13 A. Why do we use the eyeball fluid?

14 It's for two main reasons. First of
15 all, the blood is very cellular, so, as we talked
16 about earlier, after you die, your cells start
17 breaking down; the membranes break down, and the
18 things that are inside the cell spill out, so
19 basically, the blood very quickly becomes
20 contaminated with the intracellular substances. So
21 any test that you do, the number is not going to
22 represent accurately what those numbers were in the
23 blood at the time of death.

24 The second thing is the blood is very
25 amenable to postmortem bacterial contamination, and,

1 again, that will affect results.

2 The eyeball fluid, on the other hand,
3 is acellular, so you don't have cells breaking down
4 in there to contaminate everything, and it's also
5 a protected environment.

6 It's much less likely than the blood
7 to be contaminated by postmortem bacterial
8 overgrowth.

9 And the results for certain tests are
10 quite accurately representative of what those values
11 were in the blood at the time of death.

12 Q. And, in fact, as I understand
13 it, with respect to certain -- you call them
14 electrolytes, do you? These are chemicals --

15 A. Two of the things we check for
16 are electrolytes, yes.

17 Q. So with respect to some of the
18 things you check for, and in particular, sodium
19 chloride creatinine and urea nitrogen, the vitreous
20 fluid reflects pre-mortem levels for up to 120 hours
21 after death?

22 A. With the exception of glucose.

23 Q. Yeah. I don't think I listed
24 glucose, but, yes.

25 A. Sorry.

1 Q. But glucose is different. In
2 fact, what happens to glucose in the vitreous
3 chemistry after death?

4 A. Glucose is completely unstable.
5 As soon as you die, the glucose in your eyeball
6 fluid starts to drop, and it drops fairly quickly.
7 And so every normal nondiabetic person, if you check
8 their vitreous glucose, it's going to be very low,
9 like we had in this case.

10 So, in other words, you can not
11 diagnose hypoglycemia postmortem. You can not
12 diagnose low blood sugar postmortem. It's not
13 physically possible to do because of this. However,
14 you can diagnose hyperglycemia, because if the
15 vitreous comes back with a high glucose, you know
16 that, in fact, at the time of death, it was even
17 higher. So you can confidently diagnose
18 hyperglycemia if the blood sugar is high on the
19 vitreous testing.

20 Q. And if the blood sugar's low on
21 the vitreous testing --

22 A. It doesn't tell you anything.

23 Q. Thank you. So if we could go to
24 the vitreous testing, which was done here, and
25 that's the page before, page 9. Under the heading

1 "Vitreous chemistry," you list a number of
2 substances there. The first is sodium, 129.

3 First of all, these are -- the unit
4 of measurement here, if I understand correctly, is
5 millimoles per litre?

6 A. For all of them, yes.

7 Q. And, in fact, there are two
8 units of measurements which are used for these kinds
9 of tests: Millimoles per litre, which is commonly
10 used in Canada and the rest of the world; and
11 micrograms per decilitre, which is more commonly
12 used in the United States; is that right?

13 A. Yes, which I don't really have
14 experience with.

15 Q. Right. So these are expressed
16 in millimoles per litre, and sodium level 129, how
17 does that compare with the expected sodium levels in
18 a person normally?

19 A. It's around the lower limit of
20 normal.

21 Q. And chloride at 105, how does
22 that compare?

23 A. It's right at the lower limit of
24 normal.

25 Q. And glucose is less than 1.1.

1 I take it from your earlier evidence you could
2 determine nothing from that?

3 A. Correct.

4 Q. And the --

5 A. Sorry, yeah. We'll leave it at
6 that, yes.

7 Q. And then urea nitrogen, 5.2, how
8 does that compare with the normal?

9 A. It's right in the middle of the
10 normal range.

11 Q. And so what did those three
12 levels tell you? What are you looking for when you
13 test for these things?

14 A. The -- with respect to all three
15 of them, the sodium -- first of all, let me just
16 give a little more background perhaps.

17 So sodium chloride are the salts in
18 the blood. We call them electrolytes.

19 Urea nitrogen, urea is a substance
20 that's produced when the liver metabolizes protein
21 and it's subsequently filtered through the kidney.
22 So abnormalities in the urea nitrogen can reflect
23 primary kidney disease, or it can also reflect
24 secondary processes which can affect your kidney
25 functions, and one common one is dehydration,

1 because that reduces the perfusion of the kidney,
2 the less blood fluid is going to the kidney.

3 So the two primary things that we're
4 assessing with the sodium, the chloride, and the
5 urea nitrogen are hydration status and kidney
6 function.

7 Q. And what's the dehydration
8 status relevant for?

9 A. Well, again, it gets back to
10 this -- I don't know if "controversy" is the right
11 word, but the issue as to whether Ms. Aylwin
12 survived for some significant time after the
13 original collapse. Would this be a good time to go
14 into her medical history because it is certainly
15 relevant here?

16 Q. Certainly. Yes.

17 A. So I have reviewed her medical
18 records in some detail at least back to at least
19 December of 1988, which is when she was first
20 diagnosed with insulin-dependent diabetes.

21 Throughout the last -- the 24 years
22 she had that until she died, she had frequent
23 testing done, particularly a test called hemoglobin
24 A1C, which measures your long-term sugar control,
25 and her numbers were almost always suboptimal. Her

1 diabetes was not optimally controlled, and I believe
2 she did have at least one episode of diabetic
3 ketoacidosis. That's where your blood sugar gets so
4 high that it gets very dangerous, and people can die
5 from that. And she did have some episodes of
6 hypoglycemia where her blood sugar got dangerously
7 low, and people can die from that too.

8 And she was on a fair amount of
9 insulin. And I also note noticed that there seemed
10 to be frequent attempts to adjust her insulin doses,
11 manifesting the fact that the doctors were not very
12 satisfied with her control.

13 So in other words, she was somewhat
14 of a brittle diabetic.

15 Q. And "brittle" means?

16 A. Not well controlled.

17 Q. Thank you.

18 A. And prone to hypo- and
19 hyperglycemia. So getting back to the dehydration,
20 if we've got an individual who's been a long term
21 brittle diabetic and they're struck in what we've
22 seen in these photographs of the scene, clearly not
23 getting their insulin, not getting fluids that I'm
24 aware of, although I know there was some water on
25 the scene, not getting food, having serious

1 injuries, having some degree of bleeding -- in other
2 words, her body would have been under tremendous
3 physiological stress, and as some people,
4 I understand, have suggested she might even have
5 been conscious and responsive for some period of
6 time. There clearly would have been severe pain,
7 and there would have been severe psychological
8 stress.

9 So you have a brittle diabetic who's
10 under that kind of scenario. It's not going to take
11 long for their biochemistry to get out of whack.

12 And Ms. Aylwin --

13 Q. I'm sorry. Does that mean their
14 sugar levels would be affected?

15 A. Yes.

16 Q. In what direction?

17 A. They would go up.

18 Q. Thank you.

19 A. And that creates a vicious cycle
20 because when your sugar goes up, you create more
21 urine. That makes you even more dehydrated, and
22 then that makes your sugars even worse, and you see
23 where I'm going. So she was at very -- you know, in
24 this scenario, if she was alive, she was at very
25 high risk of her sugars going up very quickly and of

1 getting dehydrated quite quickly, and that would
2 have been manifested in her eyeball fluid numbers,
3 which it's not.

4 There is no evidence of dehydration
5 or what we call hemoconcentration, the blood gets
6 thicker, and she has no evidence of hyperglycemia.
7 So this is, perhaps, the single strongest evidence
8 that I see to suggest that her survival time, if
9 there was any, was quite limited.

10 Q. So just so that I understand
11 that, first of all, the -- with respect to the
12 sodium chloride and urea nitrogen levels, you
13 conclude that there is no concentration. In other
14 words, they're at normal levels, and, therefore, if
15 a person is losing water by expiration or by
16 urination, the effect is --

17 A. And bleeding.

18 Q. -- the effect is to concentrate
19 any substances in the fluids of the body; right?

20 A. Yes.

21 Q. Because there's less water and,
22 therefore, higher concentrations --

23 A. Of the blood base, so it becomes
24 more dense.

25 Q. Right. And so your conclusion

1 was that because these levels were effectively
2 normal, that there had been no such loss of water.

3 A. Certainly not significant.

4 Q. Right. And how long would you
5 expect it to take before you would see a loss of
6 bodily water such that there would be reflected
7 concentrations of these substances?

8 A. Now, there's absolutely no way
9 to quantify that. There is just too many variables;
10 there's too many unknowns.

11 I actually did a detailed literature
12 search to see if I could find anything regarding
13 that question because I knew you were going to ask
14 me that, and I could find nothing.

15 So I cannot give you a specific time
16 period, although if you suggest some lengthy time
17 periods, I might be willing to shoot them down.

18 Q. I take it you would shoot down
19 a week?

20 A. Yes.

21 Q. Is it consistent with the
22 evidence in your understanding of the way in which
23 this process works, that -- that Ms. -- that it was
24 possible that Ms. Aylwin survived for in excess of
25 24 hours?

1 A. No. I think that's
2 inconceivable.

3 Q. Not possible?

4 A. Yes, agree.

5 Q. And with respect to that issue,
6 is it possible that she survived 20 hours?

7 A. I think highly unlikely.

8 Q. In your literature, review did
9 you find any cases where there had been a survival
10 of that time period, that is, 20 to 24 hours or
11 greater, and no concentration?

12 A. No. I couldn't find nothing, no
13 reports on that.

14 Q. So am I correct from that answer
15 that you found no information one way or the other?

16 A. Yes. There is nothing published
17 on it, so, correct.

18 Q. So your answer that you've just
19 given me about the possibility is simply based on
20 your experience and belief?

21 A. Yes, what I've outlined.
22 I don't believe a brittle diabetic without their
23 insulin and food and fluids and all the other things
24 I mentioned would maintain normal biochemistry for
25 that length of time.

1 Where the cutoff is, I can't tell
2 you.

3 Q. Now, you also measured the
4 creatinine levels, and do I understand creatinine to
5 be a substance which is excreted by the kidney?

6 A. Creatinine is produced by
7 metabolism of muscle, and, yes, like urea, it is
8 processed through the kidney. So, again, if there's
9 kidney problems or hydration issues, it can be
10 affected. Creatinine tends to be more affected
11 renal failure urea. Urea nitrogen tend to be more
12 affected by dehydration.

13 Q. But one of the reasons that you
14 test creatinine is to determine whether there's
15 dehydration; correct?

16 A. It's part of the whole picture,
17 yes. We don't look at it in isolation and make any
18 conclusions.

19 Q. And among the documents which
20 you told me you had reviewed for the purpose of
21 preparing for this evidence, is -- I'm just going to
22 hand this document to you and ask that it be put on
23 the ELMO machine.

24 Now, sir, this is a document which is
25 a posting, dated December 1, 2008, from the College

1 of American Pathologists in respect of vitreous
2 postmortem chemical analysis.

3 And this is one of the documents
4 which you reviewed in preparation to coming to give
5 evidence today?

6 A. Correct.

7 Q. And it's a document which, from
8 your experience, is a reliable one?

9 A. Yes. The numbers are
10 reasonable, and it comes from a respected
11 organization.

12 Q. Right. And if we turn to the
13 last page, we can see there are two tables there.

14 In the first is normal values of
15 postmortem vitreous chemical analysis; do you see
16 that?

17 A. Yes.

18 Q. And that sets out normal values,
19 and some of the units in that table are millimoles
20 per litre and some are milligrams per decilitre;
21 correct?

22 A. Correct.

23 Q. And with respect to converting
24 the level of milligram per decilitre to express it
25 in millimoles per litre, this is a conversion which

1 is unique to each substance because it's -- one of
2 the factors in it is the molecular weight of the
3 substance being considered; right?

4 A. Correct.

5 Q. So using a calculator that
6 I found online -- and I can show it to you if you
7 want -- I've set out the normal values for
8 creatinine, which is the symbols CR, which are shown
9 by this chart to be 0.6 to 1.3 per decilitre, and
10 converting that to millimoles per litre, that's
11 53.04 to 114.9.

12 From your experience, that's about
13 right?

14 A. Yes. That's a reasonable range
15 that we see.

16 Q. And then in Table 2, this
17 document shows what you can conclude the postmortem
18 vitreous chemical analysis in some common disease.

19 And if you go over to the column for
20 creatinine, you can see that the increased levels of
21 creatinine show hypernatremic dehydration and
22 isonatremic dehydration; that's what the chart shows
23 right?

24 A. Yes.

25 Q. Can you tell us what are those

1 two kinds of dehydration?

2 A. Well, hypernatremic is what you
3 would see when a person is dehydrated and their
4 blood has gotten thicker, and the sodium has gone
5 high. Hyponatremic is when not only are you losing
6 fluids, but you're also losing electrolytes. So
7 someone who has really severe vomiting and diarrhea
8 might -- would end up -- could end up significantly
9 dehydrated, but unlike the example we have here,
10 their electrolytes would actually be low because
11 they are losing more electrolytes than they are
12 fluids, and then the middle one is just where
13 they're balanced.

14 Q. What this chart seems to be
15 saying is that if you've got increased levels of
16 creatinine, it could be -- well, it is in respect of
17 the first two kinds of dehydration and may be, with
18 respect to the third kind, a sign of dehydration?

19 A. Yes. Dehydration is one of the
20 things that could elevate creatinine, yes.

21 Q. Right. And then the fourth row,
22 renal failure is another reason for elevated
23 creatinine?

24 A. Correct.

25 Q. And then the fifth is azotemia,

1 and uremia. Can you tell us what those are?

2 A. That's when you have, basically,
3 a shutdown of your urination, so your urea nitrogen
4 gets really high.

5 Q. What causes that?

6 A. Oh, there's many different
7 causes, anything that can affect the kidney
8 functions. I mean, there's many diseases.

9 Q. So an increase in creatinine
10 effectively shows either dehydration or renal
11 failure; right?

12 A. Correct.

13 Q. And is renal failure or problems
14 with the kidney function one of the things which
15 diabetics can experience when they are going through
16 high blood sugar without insulin?

17 A. Yes. The kidneys are one of the
18 major target organs for diabetes, and certainly
19 someone whose diabetes is not optimally controlled
20 for long periods of time is prone to getting kidney
21 disease.

22 Q. Now, if we look at the
23 creatinine levels for Ms. Aylwin, which are in
24 Exhibit No. 9260, page 9, you can see that the
25 creatinine levels are 153; correct?

1 A. Yes.

2 Q. And that is about 150 per cent
3 of the high normal; correct?

4 A. It's in that area. It depends
5 a bit on which lab is doing it and what kind of
6 machine they're using.

7 There are variations from lab to lab,
8 but it's in that ballpark.

9 Q. Right. And if I understand your
10 evidence correctly, that would be a sign of either
11 dehydration or renal dysfunction; correct?

12 A. Looking at it in isolation, yes.

13 Q. You've ruled out dehydration
14 because of the sodium chloride and urea nitrogen
15 levels?

16 A. Yes.

17 Q. So does that leave as a possible
18 explanation for the creatinine elevation renal
19 dysfunction?

20 A. That's certainly one of the
21 possible explanations, yes.

22 Q. Are there other possible
23 explanations?

24 A. Well, there can be technical
25 issues.

1 Q. Such as ...?

2 A. Well, as I indicated in my
3 report here, the vitreous fluid here was
4 considerably viscous. What that means is it was
5 kind of thick. It was starting to lose its fluids.
6 And this is, again, what happens to you when you've
7 been dead for a while. Your whole body dehydrates
8 and dries out, and so do the eyeballs, so the fluid
9 starts to get thick. So this could potentially
10 create technical issues. I don't know if it did,
11 but it's a theoretical possibility. You also -- in
12 any lab test, you can have lab error. It's quite
13 common, actually, in clinical medicine. You order
14 a bunch of tests on a patient, and one of them comes
15 back, and it doesn't make sense, and then you
16 reorder the same test, and the next time it comes
17 back normal.

18 It's just part of things that happen
19 in the lab that you can't always explain.

20 Q. With respect to the first of
21 those two things you've just told us about, if I
22 could have the first page of the document that's on
23 the screen --

24 MR. CASSAN: Mr. Commissioner, I'm
25 not sure if that document that my friends was just

1 referring to has been made an exhibit or has been
2 provided on Relativity.

3 MR. DOODY: I'm sorry. It has not
4 been provided on Relativity. For that, I apologize.
5 It was a late night last night. If we could have
6 that as the next exhibit perhaps.

7 MS. KUKA: Exhibit No. 9751.

8 BY MR. DOODY:

9 Q. And in the fourth paragraph on
10 the first page, the authors of this document have
11 written, about halfway down, sixth line:

12 "Sodium chloride creatinine
13 are urea nitrogen are more
14 stable than potassium and
15 reflect pre-mortem levels for up
16 to 120 hours after death."

17 That's your understanding; correct?

18 A. Yes.

19 Q. And if you turn to tab 13,
20 Exhibit No. 9242, this is an article entitled
21 "Postmortem Chemistry," to which you referred in
22 your autopsy report; correct?

23 A. Yes.

24 Q. And it's a recognized authority
25 upon which you relied in preparing your report?

1 A. Yes.

2 Q. And if you turn to the
3 page number 242, which is -- I'm talking about the
4 upper left-hand corner. Its about eight pages in.

5 A. Yes.

6 Q. Under the heading "Renal
7 Function," the authors have written:

8 "Both urea nitrogen and
9 creatinine in blood, vitreous,
10 and CSF reflect antemortem
11 levels and remain stable for
12 days despite moderate
13 decompositional changes."

14 And you agree with that?

15 A. Yes.

16 Q. And that's one of the reasons
17 why creatinine and, indeed, urea nitrogen are among
18 the substances which are checked for in these -- in
19 this chemical analysis; correct?

20 A. Yes.

21 Q. So do I conclude from that that
22 it is generally accepted that one can rely upon the
23 creatinine levels taken from the vitreous fluid, as
24 in this case, slightly less than 100 hours after
25 death -- sorry, after -- sorry, slightly less

1 than -- up to 100 hours after death, assuming she
2 died at the time of the collapse?

3 A. Yes. All the general principles
4 you've mentioned are all correct. Again you don't
5 want to necessarily make conclusions on one number.
6 You have to look at the whole picture.

7 Q. Right. And what conclusion did
8 you reach about the high level of creatinine?

9 A. Well, as has been indicated, the
10 sodium and chloride are actually at the low end of
11 normal or, in fact, the sodium is a little below
12 that so it is the exact opposite of what you'd
13 expect for dehydration. You've got an absolutely
14 normal urea nitrogen, and urea nitrogen is actually
15 a bit of a better measure of dehydration than
16 creatinine. So you've got three things that solidly
17 support the conclusion that there's no dehydration
18 there.

19 So, to me, this elevated creatinine
20 is not because of dehydration, so you've really only
21 got one thing left. You've got kidney disease, and
22 you've got a person who was highly prone to kidney
23 disease, so it all makes sense except you can
24 quibble about the actual number, but that doesn't
25 bother me too much.

1 Again, you've got -- you know, you've
2 got a fluid sample that wasn't optimal. You've got
3 potentials of laboratory variation. That happens
4 sometimes. So, to me, the creatinine could be a bit
5 of an outlier, but it really doesn't bother me.

6 Q. But if -- am I correct that one
7 of the things you would be looking for in
8 determining whether the creatinine was -- levels
9 here were caused by the -- caused by what occurred
10 at the collapse and thereafter or part of
11 an underlying renal dysfunction being suffered by
12 Ms. Aylwin would be a historical comparison of this
13 level with her levels prior to the collapse?

14 A. That might be helpful.

15 Q. And if I could have Exhibit No.
16 9675. Now, Doctor, I showed you this, this morning,
17 and what this is, is a chart which I have prepared
18 on the first page, and then on each of the
19 subsequent pages are from Ms. Aylwin's medical
20 records which I reviewed, as you did, that are
21 analyses which she had of her creatinine levels over
22 a period of in excess of 20 years prior to the mall
23 collapse.

24 And I've summarized those on the
25 first page, and the documents behind it are the lab

1 reports arranged in chronological order so that you
2 can see in -- on the first test that recorded here
3 as September the 4th, 1991, she had creatinine
4 levels of 73, and she then was tested, some years
5 more often than not, but tested frequently over the
6 years and her -- all of her readings were within
7 normal levels, and then in the eight months -- and
8 with a lowest reading of about 49 and a highest
9 reading of, I think, 95, and then in the eight
10 months prior to the mall collapse, on October
11 11th 2011, she had a reading of 77. On January 9th,
12 2012, a reading of 77 and on April 20th, 2012, some
13 two months before the collapse, a reading of 71.
14 And then the autopsy finding was 153. And I'll just
15 stop there. All of these readings prior to the
16 autopsy reading were from a blood analysis, and as
17 I understand it, the levels in -- of creatinine in
18 vitreous fluid are very close to, but usually the
19 readings are somewhat less from the vitreous fluid
20 than they would be from blood; is that right?

21 A. I've read that in the
22 literature, yes.

23 Q. So what this shows is that the
24 autopsy reading level of creatinine was more than
25 double what it had been just two months prior and

1 significantly in excess of what it had ever been
2 over the 20 years prior to the mall collapse.

3 In looking at those figures, sir, can
4 you draw any conclusion as to whether the increased
5 creatinine levels found in the autopsy were causally
6 related to the mall collapse?

7 A. No, the evidence is against
8 that.

9 Q. The evidence is against that.
10 And why is that?

11 A. Well, as I've indicated, if --
12 first of all, there's three other tests that are
13 absolutely normal. In fact, two of them are at the
14 far end of the -- at the opposite extreme from what
15 you'd expect for dehydration.

16 Q. I'm not talking about
17 dehydration, sir; I'm talking about renal function?

18 A. No, I understand that. But
19 since the creatinine -- there's only two things that
20 are going to increase the creatinine, and it's
21 dehydration or renal function, and that leaves the
22 renal function.

23 Q. Yes. And her renal function, as
24 measured by the creatinine levels, was normal on
25 every reading for the 20 years prior to the autopsy

1 collapse.

2 A. Yes. So the possibilities are
3 that she had a sudden decomposition of her renal
4 function and certainly diabetics can do that, or the
5 other possibility is what I mentioned before.
6 There's some kind of technical issue around the fact
7 that this sample was suboptimal or some issue in the
8 laboratory.

9 Q. And if there was an issue with
10 her renal function, do I understand correctly that
11 that would take some time?

12 A. If there was a decomposition of
13 her renal function?

14 Q. Yeah. If the --

15 A. It doesn't have to take a long
16 time, no.

17 Q. Do you have any idea how long it
18 would take?

19 A. Again, highly variable. Depends
20 on the situation.

21 Q. But let's put it this way: Is
22 it consistent with Ms. Aylwin surviving for a period
23 of time, perhaps 24 hours or longer that that would
24 allow time for her renal function to deteriorate
25 such that the creatinine levels got to that level?

1 A. No.

2 Q. It was not consistent?

3 A. No.

4 Q. The creatinine levels are
5 inconsistent with her having survived for a period
6 of time; is that your evidence?

7 A. No. I'm saying the entire
8 picture is inconsistent.

9 Q. Talking about the creatinine?

10 A. Well, it's not appropriate just
11 to look at one number and make a conclusion like
12 that.

13 Q. I'm just asking you about the
14 creatinine levels.

15 You've told us that the other levels
16 are inconsistent with dehydration, and the
17 creatinine level is a sign of either dehydration or
18 renal function; right?

19 A. Yes.

20 Q. And you've ruled out
21 dehydration, so, therefore, that leaves renal
22 dysfunction?

23 A. Correct.

24 Q. And my question to you then,
25 sir, is: Looking at the creatinine levels, is that

1 consistent with a period of time within which she
2 would develop that renal dysfunction, because it
3 would take some time; right? It would not be
4 instantaneous; can we agree on that?

5 A. Yes.

6 Q. Now --

7 A. If you're asking me about
8 a hypothetical case where this is the creatinine
9 value, is that consistent with somebody being
10 trapped under rubble for some length of time? Okay.
11 the answer is yes.

12 But if we're talking about this
13 specific case and we're looking at all of the
14 evidence, my answer is no.

15 Q. Now, if she was trapped under
16 rubble but in water and she drank that water, would
17 that not relieve any dehydration?

18 A. Well, again, there is still so
19 many other things going on. She's a brittle
20 diabetic.

21 Q. Doctor, please answer the
22 question. If she was trapped under rubble, but
23 able -- but near water and able to drink that water,
24 would that not relieve the dehydration?

25 A. Hypothetically, I suppose.

1 Q. Thank you. Now, if we turn to
2 page 10 of your report, Item No. 8, you wrote:

3 "Combined consideration of the
4 scene/circumstantial
5 information, gross morphological
6 findings, microscopic
7 morphological findings,
8 neuropathological findings, and
9 vitreous biochemistry results
10 mitigates the likelihood of any
11 significant post-injury survival
12 time."

13 Let's just look at that sentence
14 piece by piece. First of all, you say that there
15 is -- and then you conclude:

16 "Death was most likely
17 near-immediate and inevitable
18 after the crushing forces were
19 applied."

20 Do I understand your evidence to be
21 that you do not know when the crushing forces were
22 applied?

23 A. I cannot say 100 per cent for
24 certain.

25 Q. And the evidence that you --

1 what do you think the probabilities are?

2 A. The probability? Could you just
3 clarify? The probability of what?

4 Q. What is your view, your opinion
5 as to the probable point in time at which the
6 crushing forces were applied?

7 A. I think, looking at the entire
8 case, I think it's probable that the crushing forces
9 were applied at the time of the original collapse.

10 Q. And your evidence in support of
11 that is what you set out in the first sentence of
12 paragraph 8; correct?

13 A. Yes.

14 Q. Now, with respect to the scene
15 and circumstantial information, you're referring to
16 the photographs and the -- that you were -- and the
17 videos that you were provided with by the police;
18 correct?

19 A. Yes.

20 Q. And you've already told us that
21 that gave you no information about the time of the
22 crushing forces; correct?

23 A. No. It didn't give a specific
24 answer with respect to time. It set the scene that
25 this was a circumstance where you would expect the

1 mortality rate to be high, so it doesn't mean that
2 someone can't survive. I understand that. People
3 have survived situations like this, but certainly
4 you're starting with the impression that a mortality
5 rate here would be high.

6 Q. Then you list -- the next point
7 is:

8 "Gross morphological finding."

9 "Gross" means other than through
10 a microscope?

11 A. Yeah, with a naked eye.

12 Q. And you've already testified
13 that your viewing the abrasions and lacerations with
14 the naked eye gave you no information as to when
15 those particular abrasions occurred?

16 A. No. That's not really what I'm
17 referring to there.

18 Q. What are you referring to?

19 A. I'm referring to the lack of any
20 evidence that she had tried to escape.

21 Q. The fingernails?

22 A. The fingernails and the fingers
23 and also the Chance fracture. You know, I mean, the
24 Chance fracture just fits perfectly with her being
25 hit while standing vertically on the first collapse.

1 It's much more difficult to imagine
2 the Chance fracture occurring when she's already in
3 some kind of horizontal position under a lot of
4 debris, and there's some sort of secondary shift.

5 Q. Highly unlikely that that
6 occurred?

7 A. I think -- yeah. Again, I don't
8 want to quantify it, but I certainly think it would
9 be much, much less -- much less likely than the
10 first scenario.

11 Q. Right. But you've already told
12 us the Chance fracture did not cause her death?

13 A. No. But the Chance fracture is
14 associated with all the other chest injuries,
15 including the multiple rib fractures and the
16 injuries to the front of her chest and then the
17 ultimate asphyxial sign, so it is logical to assume
18 that they probably all happened together.

19 Q. The crush fracture -- sorry, the
20 Chance fracture was not a crush injury; it was
21 a fracture of the vertebrae caused by a force
22 hitting her very severely while she was standing;
23 that's your evidence so far; right?

24 A. Yes.

25 Q. So that did not cause the

1 crushing; right? The crushing was a force which was
2 applied to compress her chest and her back such that
3 she had difficulty or perhaps impossibility in
4 breathing and venous return?

5 A. Yes. But anatomically, the
6 vertebrae that were fractured and resulted in the
7 Chance fracture are right next to the rib fractures.

8 So it's just logical to assume that
9 probably they all happened at the same time when
10 this massive weight struck her back.

11 Q. They may well not have.

12 A. Do you want me to rule it 100
13 per cent? Well, I guess I can't do that.

14 Q. "Microscopic morphological
15 findings," in that you are referring to the
16 histology?

17 A. Yes, the complete lack of
18 reaction to the injuries.

19 Q. And you've already told us that
20 that is only in respect of the three particular
21 injuries that you -- from which you took cellular
22 samples; that is, the knee, the shin and the ribs;
23 right?

24 A. Yes.

25 Q. And so it's not inconsistent

1 with those microscopic findings that a subsequent
2 injury which caused the other abrasions or some of
3 the other abrasions could also have caused the
4 crushing; it's not inconsistent with that evidence?

5 A. I'm sorry. I'm not sure what
6 you are suggesting.

7 Q. Well, all the microscopic
8 findings told you was that those three injuries had
9 no reparative action.

10 A. Right.

11 Q. Didn't tell you anything about
12 when the other injuries took place.

13 A. That's correct.

14 Q. Thank you. The
15 neuropathological findings, we've already discussed
16 that, and you've told us that the neuropathological
17 findings gave you no information about whether the
18 crush injury occurred at the time of the collapse or
19 later; correct?

20 A. That's true.

21 Q. And the vitreous biochemistry
22 results, we've discussed, and that's essentially
23 what it comes down to; right? That, and the
24 fingers?

25 A. Well, I think that's

1 a simplification. I think it's fair to consider
2 everything that I've considered and put it all
3 together. I don't -- I'm not going to pick out
4 individual things and say this does or doesn't prove
5 what happened.

6 I'm looking at the entire picture and
7 not claiming to be able to make a definitive
8 conclusion, but looking at a balance of probability
9 is basically what I'm doing.

10 Q. So your your upon essentially is
11 that on a balance of probabilities the death
12 occurred at or near the time of the collapse.

13 A. Yes.

14 Q. Using a different standard, can
15 you tell me, are the things you have looked at
16 consistent with the -- with Ms. Aylwin being alive
17 one hour after the collapse, at which time it's been
18 -- there's been evidence that mumbling sound was
19 heard.

20 A. I can't rule that out.

21 Q. Is it consistent with the
22 evidence which you've seen that 20 hours after the
23 collapse, Ms. Aylwin could still have been alive
24 when the evidence is tapping sounds were heard?

25 A. I think that's highly unlikely,

1 but possible. I don't think there's a reasonable
2 possibility.

3 Q. And you've told us why?

4 A. Yes.

5 Q. Is it consistent with your
6 evidence that Ms. Aylwin could still have been alive
7 22 hours after the mall collapse when a trained
8 canine gave an indication that a live person was
9 buried under the rubble?

10 A. I think it's highly unlikely.

11 Q. Similarly, with respect to
12 31 hours after, when the evidence has been another
13 trained canine found evidence of a live person under
14 the rubble?

15 A. Correct.

16 Q. Doctor, one of the things that
17 the Commissioner is going to be asked to determine
18 is this very issue, and I'm wondering if you can
19 assist in telling us how your opinion is consistent,
20 that is, that on the balance of probabilities she
21 was likely -- Ms. Aylwin was likely to have died
22 near the time of the collapse -- how that is
23 consistent with the fact that all of those
24 indications of life, of which I've described to you,
25 were in the very location where her body was

1 located? In other words, that seems to be, on one
2 view of it, a coincidence which can be explained by
3 some or all of the signs of life being accurate or
4 simply as a fluke.

5 Can you give us any explanation to
6 assist?

7 A. Well, I'm obviously not
8 an expert on this LifeLocator machine, and I'm not
9 an expert on dogs.

10 If I was looking into it, though,
11 I would have some very pointed questions.

12 I would want to know what is the
13 specificity of these different techniques, or
14 another way to phrase it is what is the false
15 positive rate of these techniques.

16 Has anyone ever actually
17 scientifically demonstrated what the false positives
18 are in these techniques?

19 So does anybody have a clue,
20 objectively and scientifically, of what the validity
21 is of any of those techniques? And as far as some
22 of the other things with -- I understand, tapping
23 and mumbling, again that's not really in the area of
24 forensic pathology. I would talk to a psychologist
25 and ask them, you know, "How do people react in

1 these kind of situations? Is there an overwhelming
2 wishful thinking going on? Is it easy to
3 misinterpret things in a noisy chaotic scene?" So,
4 I mean, there's a lot of questions I would have.
5 I don't know any of the answers.

6 What I can tell you is that some of
7 the things that I've done do have some scientific,
8 objective, factual basis. They're not perfect, but
9 I think when you take that and you look at
10 everything together, my opinion remains the same,
11 that I think she most likely died very quickly, but
12 I can't rule out a short survival interval.

13 Q. And just so we understand your
14 evidence, sir, if you are correct, do I understand
15 that all of these signs of life are incorrect?

16 A. They would have to be by
17 definition.

18 Q. Now, if I could have you turn to
19 tab 6, Exhibit No. 9235, to the second page. Now,
20 this is an e-mail which you sent to Michael Pollanen
21 and Craig Muir. Mr. Muir is the regional coroner
22 for this region; correct?

23 A. Right.

24 Q. And Mr. Pollanen?

25 A. Michael Pollanen is the chief

1 forensic pathologist for the Province of Ontario,
2 and he also happened to be the one who peer-reviewed
3 my work on these cases.

4 Q. Yes. And you wrote to him, and
5 you said:

6 "Greetings at two in the
7 morning. We just finished both
8 cases."

9 So you actually worked from early
10 evening of the 27th of June until, as we can see
11 from this e-mail, quarter to three in the morning
12 doing these autopsies?

13 A. I left my office at four,
14 actually.

15 Q. And you wrote with respect to
16 Mrs. Perizzolo:

17 "Determined to be deceased
18 shortly after the event."
19 And you noted the carotid artery
20 laceration and exsanguination; right?

21 A. Correct.

22 Q. And at the time you wrote this
23 report, as I understand it, you had done the gross
24 examination; you did not have the histology; and you
25 did not have -- nor did you have the CT scans, and

1 nor did you have the analysis of the substances in
2 the vitreous fluids?

3 A. That's correct.

4 THE COMMISSIONER: Sorry, what's the
5 date on that?

6 MR. DOODY: This is the 28th of June
7 at 2:43 in the morning.

8 THE COMMISSIONER: Thank you.

9 BY MR. DOODY:

10 Q. So with respect to
11 Mrs. Perizzolo, you said:

12 "Determined to be deceased
13 shortly after the event."

14 With respect to Ms. Aylwin you wrote:

15 "Postmortem shows no
16 definitive fatal injury.

17 However, severe posterior rib
18 fracturing, anterior chest wall

19 hemorrhage, and florid

20 conjunctival, facial,

21 periorbital, and oral mucosal

22 petechiae strongly support

23 a diagnosis of asphyxia due to

24 chest compression.

25 Despite the media reports of

1 possible 'signs of life' up to
2 48 hours after the collapse,
3 I am highly skeptical and
4 believe that this victim also
5 died very quickly. (Her finger
6 nails are totally intact and
7 very clean showing no evidence
8 of having tried to 'claw' her
9 way out.)"

10 That's what you wrote at that time?

11 A. Yes.

12 Q. And that's the conclusion you
13 formed when you did the first -- the postmortem?

14 A. That's what I concluded at the
15 time, yes.

16 Q. Right.

17 A. Obviously, a preliminary
18 conclusion.

19 Q. Right. And you are still of
20 that view?

21 A. Yes. Everything else that I did
22 subsequent to that supports it, in my opinion.

23 Q. And if you turn to tab 33, which
24 is Mrs. Perizzolo's autopsy report, Exhibit No.
25 9259?

1 A. I'm sorry. What tab are we at?

2 Q. Thirty-three.

3 And you turn to page -08. Under the
4 heading "Opinion," you wrote:

5 "The resulting mechanism of
6 death was rapid exsanguination.
7 This injury is not survivable
8 and death would've been
9 inevitable and near immediate."

10 And that's the language you chose to
11 express your opinion?

12 A. Yes.

13 Q. And if you turn to tab 34, which
14 is Exhibit No. 9260, your report with respect to
15 Ms. Aylwin's death, you wrote on page 10, Item No.
16 8, you wrote:

17 "Death was most like
18 near-immediate, and inevitable."

19 So the language you chose to use for
20 Mrs. Perizzolo was, "Death would have been
21 near-immediate," and with respect to Ms. Aylwin is,
22 "Death was most likely near-immediate." Can we take
23 from that that your -- the strength of your
24 conclusion with respect to Ms. Aylwin's -- the time
25 of her death was less certain than with respect to

1 Ms. Perizzolo's?

2 A. Yes.

3 Q. Thank you.

4 MR. DOODY: Those are my questions,
5 Mr. Commissioner.

6 THE COMMISSIONER: Thank you.

7 Cross-examination, Ms. Carr?

8 CROSS-EXAMINATION BY MS CARR:

9 Q. Good morning, Dr. Queen.

10 I introduced myself earlier, but for the record, my
11 name is Alex Carr, and I'm counsel for ELMAC.

12 A. Good morning.

13 Q. Good morning. Dr. Queen, is it
14 possible that a person who is unconscious could make
15 sounds like moaning or mumbling?

16 A. Yes.

17 Q. And would that also explain, in
18 the case of Ms. Aylwin, the lack of clawing that we
19 saw on her fingertips if she were unconscious?

20 A. It could.

21 Q. In your conversation with my
22 friend Mr. Doody you discussed the finding that
23 neither body showed signs of decomposition.

24 A. Not grossly.

25 Q. Not grossly. Would water play

1 a preserving role in slowing or pausing the process
2 of decomposition?

3 A. It would depend on the
4 temperature. Cold water, certainly, could slow
5 decomposition down.

6 Q. Like rainwater in June?

7 A. Probably not.

8 Q. That would be a little bit too
9 warm.

10 A. Yeah. I'm thinking more of
11 people who fall into lakes and rivers in the winter.
12 They can often be well preserved after substantial
13 times.

14 Q. Thank you. And I take it your
15 answer -- well, let me ask you: Might water also
16 play a preserving role in slowing the process of
17 bruising, like the one we saw on Ms. Aylwin's left
18 forearm?

19 A. No. I've never heard anything
20 like that before.

21 Q. Thank you. Those are my
22 questions.

23 THE COMMISSIONER: Ms. Filgiano?

24 MS. FIGLIANO: No.

25 THE COMMISSIONER: Anybody. Nobody?

1 Mr. Kloeze?

2 MR. KLOEZE: I just have one
3 question, sir.

4 CROSS-EXAMINATION BY MR. KLOEZE:

5 Q. Good afternoon, Mr. Queen. My
6 name is Darrell Kloeze. I am counsel for the
7 Province of Ontario. I just have one question now.
8 Mr. Doody asked you who Dr. Pollanen is, and
9 I understand he is the chief forensic pathologist
10 for the Province of Ontario?

11 A. That's correct.

12 Q. You mentioned that the results
13 of your autopsies were peer-reviewed by Dr.
14 Pollanen.

15 A. Yes. There's a process in
16 Ontario, where every homicide case, criminally
17 suspicious case, and other cases such as this one
18 being particularly high profile would be reviewed by
19 one of the other, what are called Category A
20 forensic pathologists in the province. So, Dr.
21 Pollanen actually, specifically, asked to peer
22 review these two cases.

23 Q. Do you know the result of that
24 peer review?

25 A. Yes, after we do the peer review

1 we fill out a standardized form.

2 Q. And what were the results of
3 that?

4 A. So, it's called a peer review
5 form major case, so this is the one for Ms. Aylwin.

6 So there's -- well, there's a list of
7 the items that were reviewed, so we reviewed the
8 postmortem examination.

9 MR. DOODY: That's at tab 7 and it is
10 Exhibit No. 9236.

11 THE WITNESS: Oh, I'm sorry. Should
12 I wait?

13 THE COMMISSIONER: That was going to
14 be my next question.

15 MR. KLOEZE: Sorry.

16 THE WITNESS: Sorry, should I wait?

17 BY MR. KLOEZE:

18 Q. Yes, we'll bring it up on the
19 screen.

20 A. So, you can see there there's
21 a list of what he reviewed. So, he reviewed the
22 reports. He reviewed the photographs.

23 I sent him everything. I sent him
24 all the photographs that were taken from the scene.
25 I sent him the videos. I sent him all the DVDs of

1 all the CT Scans and the x-rays and actually he
2 would have seen the toxicology report too. He
3 didn't tick that off, and then there's just the
4 administrative audit, which I won't bore you with
5 and then the important part which is the lower parts
6 the technical audit:

7 "Descriptions are
8 satisfactory: Yes.

9 Appropriate ancillary testing
10 performed: Yes.

11 Report is free of major
12 language errors: Yes.

13 Report is independently
14 reviewable: Yes.

15 Cause of death is reasonable:
16 Yes.

17 Other opinions are reasonable:
18 yes."

19 And the one for Mrs. Perizzolo was
20 exactly the same.

21 Q. Okay, thank you, sir. That's my
22 question. Thank you.

23 THE COMMISSIONER: Mr. Cassan.

24 CROSS-EXAMINATION BY MR. CASSAN.

25 Q. Good afternoon, Dr. Queen. My

1 name is Paul Cassan. We've met this morning and had
2 some chance to talk, but I'm counsel for the
3 City of Elliot Lake and, of course, the Elliot Lake
4 Fire Department.

5 A. Good afternoon.

6 Q. I'd like to take you to the
7 final autopsy report. I wonder if Ms. Kuka could
8 pull that up, specifically of Ms. Aylwin.

9 Unfortunately I've got the report and
10 I didn't write down Exhibit number.

11 MR. DOODY: Exhibit No. 9260.

12 BY MR. CASSAN:

13 Q. Dr. Queen, I just want to start
14 at the top. It's called the "The final autopsy
15 report," and I presume that this is the final
16 document that you submitted. There hasn't been any
17 subsequent document.

18 A. That's correct.

19 Q. And is it your intention or is
20 there a process by which you might change this
21 document?

22 A. Yeah, if -- like any case in
23 forensic pathology, we're often highly dependent on
24 circumstantial information to come to our
25 conclusions because often the findings at autopsy,

1 as you've already seen in these cases, can be
2 nonspecific, so we need help through other
3 information.

4 So, sometimes, long after you've
5 finished your final autopsy report, new information
6 comes to light either through a police investigation
7 or somebody comes forward and reports something or
8 whatever, so there is a mechanism to do a revised
9 report.

10 Q. And are you working on revised
11 report in this situation?

12 A. No.

13 Q. I know that the Commission has
14 been at this for some months, and certainly there's
15 been a plethora of evidence put forward with respect
16 to the way that Ms. Aylwin passed away. Is there
17 anything in any of that evidence that has suggested
18 to you that you should change your report?

19 A. No, I mean I want to make it
20 clear, I considered the alternative theories very
21 carefully.

22 It is one of the reasons why I did so
23 much more work in Ms. Aylwin's autopsy, than in
24 Mrs. Perizzolo because it was my understanding there
25 was really little or no controversy about the fact

1 that she died extremely quickly, and had a massive
2 injury that would have killed her that way.

3 I was very well aware that there was
4 were -- there was some controversy about
5 Ms. Aylwin's death, so that's why I did all the
6 extra things -- the having the brain looked at by
7 a specialist and taking the extra histology of
8 different wounds and so on.

9 So, I tried to keep, you know,
10 a totally open mind about all that, but in the end
11 my opinion remains what it was when I finished this
12 report.

13 Q. So, it's fair to say that you've
14 had a lot of experience testifying as an expert
15 witness before various tribunals?

16 A. Yes, I've testified in murder
17 trials, well over a hundred times and I've testified
18 in many Coroner's Inquests.

19 Q. And now a public inquiry. And
20 so your position, as an expert witness at this
21 inquiry, remains the same as this report?

22 A. Yes.

23 Q. I know when you and I spoke this
24 morning you indicated that there were maybe a few
25 things that Dr. Bradford said that might need some

1 correcting and I'm wondering if you could take us to
2 those.

3 A. This is what I read in the
4 press, so I, you know, I can't speak to the accuracy
5 of it. There was -- he was asked at one point to,
6 I think, to define a hinge fracture and his
7 definition was --- this is not that important
8 really, but his definition wasn't quite right. And
9 then there was some reference he made to
10 hypoglycemia and so I wasn't quite sure if he
11 understood that you can't diagnose that postmortem,
12 but I don't think they were critical mistakes.

13 Q. So those are the two issues that
14 you would -- two matters that you would take issue
15 of?

16 A. Yeah, small issue.

17 THE COMMISSIONER: And these were
18 reports in the press, as opposed to documents
19 produced by the doctor?

20 THE WITNESS: Yeah.

21 THE COMMISSIONER: Is that what
22 I understood you to say?

23 THE WITNESS: Yeah, I believe it was
24 in one of the blogs on the Sudbury Star website or
25 something like that.

1 THE COMMISSIONER: Right. So, the
2 doctor may not have said any of that, for all
3 intents and purposes.

4 THE WITNESS: That's right.

5 THE COMMISSIONER: Thank you.

6 BY MR. CASSAN:

7 Q. Now, I understand, as I read
8 through the report and I go to the next page,
9 Ms. Kuka, about your qualifications that you are
10 a forensic pathologist, but I'm wondering if you
11 could tell us what a forensic pathologist is, as
12 opposed to a coroner or a general medical
13 practitioner.

14 A. Well, there are different types
15 of death investigation systems. The two most common
16 ones are a coroner system, and a medical examiner
17 system.

18 In a medical examiner system,
19 basically the forensic pathologists run everything.

20 In Ontario, where we have a coroner
21 system it is not that way. Basically, in practice
22 is what happens is the coroners are the ones that
23 are first called when there's a death that somebody
24 feels they need to investigate. They are the ones
25 that are supposed to go to the scene, collect all

1 the information, talk to whoever, the police, the
2 paramedics, the family, the emergency doctor,
3 whatever, and they're supposed to collect all the
4 relevant information and then pass it on to me, with
5 the warrant, instruct me to do the autopsy.

6 I determine the cause of death.
7 I don't actually legally certify it; the coroner
8 does that. And I do not have any input -- right now
9 anyway -- with the manner of death. Manner is
10 whether it's homicide, suicide, accident, natural or
11 undetermined. So, at the moment, only the coroner
12 determines the manner of death and certifies it.

13 In fact, this is all changing a bit
14 because some of the senior forensic pathologists
15 like myself are shortly going to be appointed as
16 forensic pathologist-coroners for certain cases.
17 So, it's evolving, as we speak, but in this
18 particular case it was the old system and Dr.
19 Bradford was the coroner and I was the forensic
20 pathologist.

21 Q. And forgive me for my
22 terminology, but in the process of
23 evidence-gathering and evidence-analysis with
24 respect to deaths that need to be examined, is it
25 fair to say that forensic pathologists would be at

1 the top of that hierarchy or is there a level above
2 you that would do further and more specific
3 analyses?

4 A. Well, there are people who
5 subspecialize in areas within forensic pathology, so
6 you can have a forensic neuropathologist who is
7 a brain pathologist who specializes in forensic
8 aspects of brain injuries and so on.

9 You can, you know -- forensic
10 pathologists often sort of subspecialize on their
11 own. They might take a great interest in gunshot
12 issues, you know, so, there certainly are people who
13 subspecialize within forensic pathology, either
14 formally or informality. But there's no
15 particular -- there's no subspecialty, per se, above
16 forensic pathologist.

17 There is no Board examination for --
18 you can't become Board certified, as far as you
19 I know, as a forensic neuropathologist or a forensic
20 pathologist who specializes in gunshot wounds.
21 Those are things that people just take on out of
22 interest and ...

23 Q. So it's fair to say that in the
24 court process, particularly in Ontario, that you are
25 the top echelon of experts dealing with analyses of

1 deaths to be investigated?

2 A. I would agree with that.

3 MR. CASSAN: Mr. Commissioner, he did
4 not pay me to ask him that question.

5 BY MR. CASSAN:

6 Q. Now, as we move down that page,
7 it indicates under the scene that you did not attend
8 the scene; is that typical?

9 A. Yes, again, it's because of the
10 system we have in Ontario, it's the coroners that
11 generally go to scene.

12 It's not that we are prohibited from
13 going to scenes, and I actually have gone to
14 occasional scenes, but it's more an issue of
15 manpower and time and resources and, like I said,
16 I'm the only full-time forensic pathologist in
17 Northern Ontario. It's massive geographical area.
18 It just -- it's not feasible for me to go to most
19 scenes.

20 Q. And then as we go down, I'm
21 interested in some of the pre-autopsy information
22 right at the bottom. You indicate that Ms. Aylwin
23 had a history of diabetes and arthritis.

24 One of the photos that's been
25 produced in the evidence was a photo of her

1 MedicAlert necklace and it also said that there is
2 a thyroid issue.

3 A. Yes.

4 Q. Were you aware of that?

5 A. That necklace wasn't on the body
6 when I did the autopsy.

7 I was actually not aware of her
8 thyroid issues, and I was not aware of the severity
9 and length and instability of her diabetes until
10 just two days ago, when I spent several hours
11 reviewing two CDs or DVDs, whatever they were, with
12 all of her medical records.

13 Q. And does the thyroid issue
14 effect any of the tests that you've done or any of
15 the analysis or conclusions that you've done with
16 respect to Ms. Aylwin?

17 A. Well, I believe her thyroid
18 issue was under control. And basically when she was
19 young -- she was one of these people who had what we
20 call multiple autoimmune diseases.

21 She had this, I believe, juvenile
22 rheumatoid arthritis. She had Type 1 diabetes and
23 she had hyperthyroidism, an overactive thyroid,
24 which I believe was treated with a drug; she didn't
25 have surgery.

1 And then later on she got
2 hypoglycemic which not uncommonly happens when you
3 treat hypoglycemia. The pendulum swings too far and
4 then you have to put them on thyroid replacement.

5 And so as long as the person's on
6 thyroid replacement, and they're getting their blood
7 checked on a regular basis to make sure the dose is
8 correct, then their thyroid values in their blood
9 and whatever should be normal.

10 So, no -- sorry, a long story for
11 a short answer. No, it really shouldn't have
12 effected anything else that we did.

13 Q. Thank you. And as we turn the
14 page, it certainly seems that you are aware, prior
15 to starting the autopsy, of the reports of hearing
16 the voice like a mumble, the tapping, and the
17 LifeLocator evidence, as well as, I suppose you've
18 been aware of the dogs.

19 A. Yes. I mean I was given some of
20 that information by the police, and I think some of
21 it I got from the media.

22 Q. And how does that information
23 effect your opinion?

24 A. Well, it, as I said, it
25 didn't -- in the end it didn't effect my opinion; it

1 just had an effect on the extent of the autopsy on
2 Ms. Aylwin.

3 I clearly did a, you know, a more
4 detailed autopsy for the reasons I think I've
5 explained.

6 In the final analysis, I don't
7 believe it had any effect on my opinion.

8 Q. I wonder if we could turn now to
9 page 4, Ms. Kuka. And if we could go down to the
10 portion -- well, let's start at the top, number 4.

11 It indicates that rigor mortis is
12 present, but very slight. Postmortem hypostasis is
13 left and fixed and decomposition is absent.

14 I just wonder if you could translate
15 that and tell us what it means.

16 A. Rigor mortis is the stiffness of
17 the body after death. So, for a while, the
18 body will be -- I mean, it takes a little while for
19 that to happen and eventually the body gets stiff
20 and then it peaks, and then the rigidity starts to
21 decrease and then eventually as the muscles
22 decompose, it disappears all together.

23 It's one of those things, again, that
24 used to be used for trying to extrapolate backward
25 and estimate the time of death. We all know there's

1 -- now we know that there's too many variabilities
2 and unknowns, and it's just very unscientific to do
3 that.

4 Postmortem hypostasis is what
5 I talked about earlier, the group gravitational
6 settling of the blood, so if someone, say, dies face
7 down the blood will sink to the front of their body
8 and they'll be red at the front. And eventually, in
9 the early stages, you can poke the blood and it will
10 blanch because it's not fixed in place. But
11 eventually it fixes in place, so if you poke it, it
12 doesn't blanch.

13 In her case, she had gone through the
14 blanching stage, and she was in the point where the
15 -- the lividity is the other name, where the
16 lividity was fixed; it wouldn't blanch.

17 Again, people used to used to try and
18 use that to that extrapolate backwards for time of
19 death. Again, not a wise thing to do.

20 Q. But is it true to say that what
21 this does provide you with is an indication of the
22 position that the person terminated in.

23 A. Yes, it can be. It can be
24 helpful for that, yes. Both of them can be
25 potentially helpful for that.

1 Q. So, in this case, was the --
2 were these observations consistent with the position
3 that Ms. Aylwin was found in?

4 A. Yeah, I believe -- if I remember
5 correctly, she was somewhat to her left side. And
6 she did have her arms flexed up, with her hands
7 towards her face and that's the way she was when we
8 first opened the body bag. So, yes, I would say
9 it's all consistent.

10 Q. And that position of death,
11 I would ask you, is that consistent with the
12 injuries that you saw and particularly, the
13 conclusion of crush asphyxia?

14 A. I don't actually see
15 a relationship. Maybe I'm misunderstanding your
16 question.

17 Q. Well, I'm looking at the
18 position of the body, and we looked at the photos
19 earlier today of the way the slabs were on her.

20 Did that all look consistent with
21 your opinion of crush asphyxia?

22 A. Yeah, what I saw did. I mean
23 I'm not clear if during the collapse, if they are --
24 you know, how much she moved.

25 I understand that the floor she was

1 on actually went down to a floor below. So once she
2 was crushed and hit the floor beneath her feet, the
3 whole thing went down another level; is that
4 correct?

5 Q. I think that is my --

6 A. Yeah, so --

7 Q. -- my understanding.

8 A. So I'm not clear, after her
9 original prone positioning on the floor, you know,
10 I'm not -- and then the crushing at that point, I'm
11 not clear how much movement there was of her body
12 between there and when she hit the termination
13 point.

14 So, but in general, you know, there
15 doesn't seem to be any inconsistencies here with
16 what I know.

17 Q. I'll then draw your attention
18 down to number 2 under "Extremities" and Mr. Doody
19 brought you to this previously about the wrinkling
20 of both palms and you told us that that was
21 an indication that her hands were wet.

22 A. Yes.

23 Q. Was there any indication on the
24 rest of her body that the rest of her body was wet?

25 A. I'm just looking to see what

1 I said about her clothes.

2 Yeah, I didn't actually specify
3 whether the clothing was wet or not. I'm not sure.

4 Q. Is that typically something
5 that, if it did exist, you would have noted that?

6 A. I might. I'm not an expert in
7 clothing. I generally quickly give the clothing to
8 the police, so I may or may not document it.

9 I'm not clear that it's particularly
10 relevant to what I'm doing.

11 Q. Apart from the clothing was
12 there any other noticeable sign that the rest of her
13 body, her hair, her face, or anything else was wet?
14 I didn't see it in your notes; I'm certainly not
15 trying to trick you.

16 A. Yeah, I don't -- I'm just
17 double-checking. No, didn't say anything
18 specifically about the wetness of her hair, and
19 I didn't say anything specifically about the wetness
20 of her skin.

21 The other thing you have to keep in
22 is when these bodies are put in body bags, in
23 plastic body bags which are then sealed with
24 a zipper. And it's very, very common to get
25 condensation inside this plastic body bag. So it's

1 actually not that unusual for bodies to be somewhat
2 wet, when they've been nowhere near water. So, it
3 may be one of the reasons why I didn't pay a lot of
4 attention to it.

5 Q. Where I was going with that was
6 the suggestion that was made to you earlier that
7 there may have been water that made her hands wet
8 and then gave her something to drink in the
9 collapse, and I'm just wondering whether there was
10 any indication or evidence in your analysis that
11 that was the fact here.

12 A. I don't think I'm in a position
13 to give an opinion on that.

14 Q. Okay. Thank you. The next
15 issue about the fingernails being clean, and no
16 apparent fresh damage, would it be fair to say that
17 if she was using her hands to do the tapping that's
18 been attributed to her, that that would have, at
19 least, chipped the fingernails --

20 A. Well, the short answer is
21 "I don't know." It's going to depend on how she's
22 tapping. Maybe she grabbed something and used that
23 that to tap. I mean, I have no idea.

24 Q. But no sign on the fingernails
25 that her fingers were being used to perform the

1 tapping?

2 A. There is no positive of evidence
3 of that.

4 Q. Thank you. And the next one
5 about the dorsal aspect of the hands. We'll go to
6 the description of injuries, and that would,
7 I believe, be number 6 on page 6 under "extremity
8 injuries."

9 A. Yes.

10 Q. I'm just wondering whether you
11 can tell me whether those injuries that you saw --
12 and we saw photos of them this morning -- are
13 consistent with her hands being used for tapping or
14 trying to get herself out of the situation?

15 A. I can't rule that out, but
16 I can't be specific. I mean these are just
17 nonspecific, non-patterned lacerations and scrapes.

18 I mean, she's surrounded and covered
19 by all this debris, so I can't tell whether it's
20 debris hit her. Either blunt debris hit her or her
21 extremities hit blunt debris.

22 Q. Right.

23 A. So whether it was something
24 hitting her from above, coming down on her or
25 whether she, you know, flung her arm out and hit

1 something hard, I have no way to differentiate that.

2 Q. Would you agree that those
3 injuries are -- would be characterized as fairly
4 minor injuries?

5 A. Yeah, relatively minor.

6 Q. And then down at the bottom, we
7 see that the toes show no injuries and the toenails
8 are painted green.

9 I presume than if the toenails had
10 been damaged, if she was kicking to do the tapping,
11 that that would have been something that you would
12 have noted?

13 A. Yes, I would have documented
14 that, if it was there.

15 Q. I'm wondering then if we can
16 turn to the next page, Ms. Kuka, page 5, the
17 description of the injuries. And we're looking at
18 the posterior torso injuries. So here we have:

19 "Superficial red-brown
20 abrasion and contusion of the
21 mid upper back, 10 centimetres
22 by up to 5 centimetres."

23 That, to me, seems like a fairly
24 large bruise.

25 A. I guess it depends on your

1 definition of "large." It's 10 by 5 centimetres.

2 Q. And then there is an indentation
3 of the posterior right shoulder. Tell me that what
4 means.

5 A. Something's just -- something's
6 just been pushing on the skin of the back of the
7 right shoulder and created an indent.

8 Q. Then we have an irregular
9 depression and brownish discolouration at the
10 inferior right scapula.

11 Is it fair to say that that's
12 effectively a broken shoulder blade?

13 A. No, I didn't document that the
14 scapula itself, which is the wing bone at the back
15 there. I just said there was a depression there.
16 We're talking about the skin here, so there was
17 depression of the skin at the area of the right wing
18 bone.

19 Q. Number 4, there is indication of
20 skin slippage and, again, 8 centimetres by 3.5
21 centimetres.

22 My understanding is that takes
23 a substantial force to cause that type of an injury.

24 A. Skin slippage is that what
25 you're asking me?

1 Q. Yes.

2 A. No, not necessarily. And the
3 other thing is skin slippage happens normally
4 postmortem, so I wouldn't say it necessarily takes
5 a lot of force.

6 Q. When we get down to 7 through 9,
7 these are the fractures, and they seem to be fairly
8 pervasive and severe; would you agree?

9 A. Yes.

10 Q. And I'm not a doctor, so I am
11 expecting that, again, that that is an indication of
12 a fairly substantial force being applied.

13 A. I would agree.

14 Q. Similarly with number 2, under
15 the "anterior torso," the "displaced fracture at the
16 sternomanubrial function."

17 That's the breast bone, you were
18 talking about?

19 A. Yes.

20 Q. And I understand that to be one
21 of the strongest bones in your body; is that true?

22 A. Well, I'm not sure I'd say that,
23 but it's -- I mean it takes a reasonable amount of
24 force to break it.

25 I mean you can actually -- it is not

1 uncommon that that bone gets broken during CPR, so
2 I mean it doesn't take tons of weight to break that
3 bone, but I mean it takes more than minor or trivial
4 force.

5 Q. And to have the fracture to the
6 extent that this one was, that's not the force of
7 CPR.

8 A. Without looking at the whole
9 picture, clearly not.

10 THE COMMISSIONER: Are you going to
11 be much longer?

12 I would sure like to see the doctor
13 be able to get back to Sudbury, if he could.

14 MR. CASSAN: Sure, I do too.

15 I probably have another 15 or 20
16 minutes.

17 THE COMMISSIONER: That much? Will
18 you have re-examination? I know you can't answer
19 that quite yet.

20 MR. DOODY: Not yet,
21 Mr. Commissioner.

22 THE COMMISSIONER: Not yet.

23 Well, my predisposition at this
24 point, subject to what the staff and interpreters
25 tell me, is to go ahead and have you complete as

1 soon as you can, so that we can liberate the
2 Dr. Queen to go back. Is that okay with you? How
3 about you Madam Stenographer? The interpreters?
4 Okay. Thank you. Well, let's move along then
5 please, Mr. Cassan.

6 BY MR. CASSAN:

7 Q. Thank you. Mr. Doody asked you
8 about the time of the injuries, and I read your
9 report to suggest that the injuries took place
10 relatively simultaneously.

11 A. Again, because there's a limit
12 to how much we can narrow down the age of those
13 injuries, I don't want -- I wouldn't want to use the
14 term "simultaneous" to mean exactly the same time.
15 I can't prove that.

16 There's nothing that's inconsistent
17 with that, but I can't definitively establish that
18 they were all exactly the same time.

19 Q. And that's where I was going
20 with it because I was going to try to ask the
21 inverse of that question to say: Was there any
22 evidence that you saw to suggest that the injuries
23 were not consistent with happening at the same time?

24 A. No, there's no positive evidence
25 to suggest that they happened at different times.

1 Q. And so certainly if you're --
2 and I understand that in your position of testifying
3 as expert witnesses and even participating in
4 coroner's inquests, you are certainly familiar with
5 the concept of "a balance of probabilities."

6 A. Yes.

7 Q. And so your opinion, on the
8 balance of probabilities, based on the constellation
9 of evidence, is that the injuries were sustained at
10 the same time?

11 A. Yes, I would agree with that.

12 MR. CASSAN: Mr. Commissioner, I want
13 to look at a photograph and I don't know if the
14 documents -- if the televisions are still turned off
15 and it's still appropriate to do that or whether
16 anything has to be done.

17 THE COMMISSIONER: Everything's fine.

18 MR. CASSAN: Then I'm wondering if we
19 could look at Exhibit No. 9245, and particularly,
20 photograph number 8.

21 THE WITNESS: Did you give me a tab
22 there.

23 MR. DOODY: It is tab 17.

24 THE WITNESS: Oh, it must be this
25 one.

1 BY MR. CASSAN:

2 Q. When Mr. Doody was asking you
3 questions about this, this photograph showed that
4 Ms. Aylwin had both her right and left arm bent in
5 front of her and perhaps in front of her face, but
6 I can't see that from this picture and I'm just
7 wondering if you've seen something different in the
8 picture than what I can.

9 A. Well, I can't remember what his
10 exact phrase was.

11 If he asked if it's consistent with
12 or possible, I would have said, "yes," I think.

13 If he said, "Does this picture
14 definitely prove that her hands were in front of her
15 face?" I hope I would have said, "No, it doesn't
16 definitely prove it."

17 Q. Fair enough. And that was my
18 observation of it, as well.

19 Now, I do note that this shows a lot
20 of very fine debris; would you agree with that?

21 A. Yes.

22 Q. And that is consistent with,
23 certainly, the observation of Ms. Aylwin when she
24 came to our office.

25 A. Yes.

1 Q. And so then, Ms. Kuka, if we
2 could go back to the forensic pathology report and
3 I'm at page 7, and if I can draw your attention
4 under "Neck and Respiratory System," Dr. Queen, to
5 "Trachea, bronchi and carina," maybe you can tell us
6 what those are.

7 A. Well, the trachea is the main
8 tube that runs from the back of your throat down to
9 your lungs. The bronchi are the tubes that divide
10 off of the trachea and go to each lung, and the
11 carina are the part where they bifurcate.

12 Q. And it appears from this report
13 that you actually examined those vessels?

14 A. Yeah, they're not vessels.

15 Q. Okay. Sorry.

16 A. But those structures.

17 Q. Okay, and there's no foreign
18 material, and so when we looked at the photograph
19 that we just looked at, and noted the fine debris,
20 if a person was trapped in that and was alive,
21 I presume, of course, that would mean they're
22 breathing, would that not have indicated -- or would
23 you not have expected if that's the case that there
24 would have been some foreign material and that kind
25 of debris located in the trachea, bronchi and

1 carina?

2 A. Not necessarily. This, again,
3 is an example where negative findings aren't really
4 helpful or positive findings.

5 If I would have found the debris deep
6 in her airways, what would have been strong
7 evidence, in fact, she was breathing. The lack of
8 it does not prove she wasn't breathing. And there's
9 many examples of that. I see many fire deaths,
10 where there's all sort of smoke and debris in the
11 air and they actually have pretty clean airways.

12 There's, again, a lot of variables
13 and unknowns, so I can't draw any conclusions about
14 the lack of debris in her airways.

15 Q. Thank you. And I presume, as
16 well, did you notice any debris inside her mouth?
17 I know you made notes of it inside her nose.

18 A. No, I don't -- double-check
19 but -- No, under "face and head" I did not document
20 any debris in her mouth.

21 Q. And then as we go down to
22 stomach content you indicate there is 200 ccs of
23 recently ingested food.

24 Now, how were you able to tell that
25 that was recently ingested?

1 A. Well, because of -- it was
2 relatively intact. It didn't show any significant
3 digestion.

4 Q. So that would lead one to
5 conclude that there wasn't a significant period of
6 time between when she ate the food -- well, let me
7 rephrase that: There wasn't significant digestion
8 between when she ate the food and when you examined
9 her?

10 A. Yes.

11 Q. And I understand you certainly
12 told me this morning that that's not a good
13 indication -- or a strong indication of time of
14 death, but barring any digestive problems, that
15 certainly is an indication that she ate something
16 reasonably shortly before she passed away.

17 A. Yes, and there's a range. You
18 know, it could be from immediately before, to some
19 number of hours before. Again, assuming she doesn't
20 have some problem with her gastric motility that
21 slows down her gastric emptying and diabetics, by
22 the way, often have that.

23 THE COMMISSIONER: Say that, again,
24 so I can understand it. Repeat what you just said.

25 THE WITNESS: One of the target

1 organs in the body for diabetes is the nerves, and
2 that can cause different problems and one problem is
3 the nerves that control the emptying of the stomach
4 can be effected, so sometimes diabetics have
5 a sluggish stomach.

6 THE COMMISSIONER: Their digestion is
7 slower?

8 THE WITNESS: Well, the emptying of
9 the stomach.

10 THE COMMISSIONER: Emptying of the
11 stomach --

12 THE WITNESS: Is slowed down.

13 THE COMMISSIONER: -- not digestion.

14 In this respect, did you find any
15 evidence of digestion in relation to the material
16 found in the stomach?

17 THE WITNESS: No, and in fact the
18 stomach doesn't do much digestion, anyway. I mean
19 the vast majority is happening in the intestine, so
20 any that's going to be there is going to be minimal
21 under any circumstance.

22 THE COMMISSIONER: And the
23 movement -- forgetting the fact that she was
24 diabetic, how long would 200 -- was it 200 grams or
25 ccs rather, how long would it take for 200 ccs of

1 recently digested, ingested food proceed through the
2 intestines?

3 THE WITNESS: You can't quantify
4 that.

5 THE COMMISSIONER: There's no way.

6 THE WITNESS: No, the Steven Truscott
7 case kind of showed that's a very dangerous thing to
8 do.

9 THE COMMISSIONER: It is. And even
10 to be able to guesstimate it, in terms of number of
11 hours or days even, could you have stomach content
12 two days after you've ingested the food, that's
13 still inside your stomach?

14 THE WITNESS: Yes, in some cases you
15 can have food in the stomach for many days. It's
16 not apparently digested.

17 THE COMMISSIONER: Just seems to me
18 it goes through me very quickly.

19 THE WITNESS: Most healthy people it
20 does.

21 THE COMMISSIONER: Okay.

22 THE WITNESS: But there are
23 variations.

24 THE COMMISSIONER: There are
25 variations, okay. We'll leave that alone then.

1 BY MR. CASSAN:

2 Q. Maybe I won't quite leave it
3 alone. Thank you, Mr. Commissioner.

4 Dr. Queen, rather than talk about the
5 possibilities based on, sort of, unusual cases,
6 dealing with the more standard cases and
7 probabilities, was there anything else that you saw
8 to suggest that Ms. Aylwin probably would have had
9 extensive digestion time? I'm not sure what you
10 would call that.

11 A. There's no way for me to
12 determine that from the autopsy.

13 Q. All right. Mr. Doody showed you
14 some photos of bruising in Ms. Aylwin's wrists, and
15 was asking about whether or not that effected your
16 determination of the time of death.

17 I'm just wondering if you put any
18 weight, at all, on the bruising with respect to your
19 concepts of time of death?

20 A. No, the healing of bruising,
21 both grossly and microscopically, is highly variable
22 and is not -- is of minimal, virtually no
23 usefulness.

24 Q. Then Mr. Doody was asking you
25 about, specifically, the scalp injury which was one

1 of the injuries that you did not have
2 microscopically analyzed.

3 I'm understanding your report to
4 suggest that all of the injuries that you did have
5 microscopically analysed did not have a inflammation
6 response.

7 A. That's correct.

8 Q. Was there any evidence that you
9 saw, that suggested that this injury was different
10 than any of the others? I presume it typical that
11 you don't microscopically analyze each injury; you
12 sort of audit them.

13 A. Yes, I mean, let's say --
14 I don't know if we added up how many injuries she
15 had, but let's -- let's just give a little
16 background here. Okay, so we've got somewhere in
17 excess of 40 traumatic injuries. So, yeah, it's not
18 feasible to sample them all, you know; we just
19 select some representative ones. One could debate
20 about what's the appropriate number. You would
21 probably get different answers, if you talk to
22 different forensic pathologists.

23 I picked the most obvious and worst
24 ones. I also picked the lacerations because the
25 dating of lacerations is more accurate,

1 microscopically, than the dating of contusions,
2 microscopically.

3 Q. So, there wasn't anything in
4 your analysis to suggest that the other injuries
5 were not contemporaneous.

6 A. Grossly, they all look the same,
7 so there's nothing to suggest that they weren't
8 simultaneous.

9 Q. We talked about the Chance
10 fracture or you did with Mr. Doody, and he asked you
11 if that was the injury that was fatal. And
12 you answered "no," but that is consistent,
13 I understand, with the crushing and the crush
14 asphyxia.

15 A. Yes, and I mean the anatomical
16 proximity, to me, is one of the convincing points.

17 I mean the fractures -- sorry, the
18 vertebrae that were affected by the Chance fracture
19 were the 8th and 9th.

20 Now, on both sides, all the ribs
21 around those two vertebrae were involved. So,
22 you've got the two ribs involved -- sorry, the two
23 vertebrae involved, and then you've got all the ribs
24 on both sides around it involved. So, it just -- it
25 just makes sense that the impact that broke the

1 backbone, broke those posterior ribs at the same
2 time.

3 Q. So the injuries are consistent
4 and if you were to talk about probabilities, the
5 probability is much greater that those were at the
6 same time, than not?

7 A. I believe that, yes.

8 Q. So, in forming your opinion, the
9 fact that it may be possible to have these injuries
10 separated in time, is not instructive?

11 A. I think it's highly unlikely.

12 Q. Mr. Doody was asking you about
13 the expediency of death and was talking about his
14 example of a garden hose, suggesting that there may
15 be a difference when the circulatory system is
16 partially obstructed versus totally obstructed.

17 Was there any evidence in your
18 analysis to suggest that this was a case where there
19 was a partial obstruction?

20 A. In this kind of situation of
21 crush asphyxia, you can't anatomically demonstrate
22 that any of the internal structures are actually
23 compressed.

24 You can't anatomically demonstrate
25 that there has been a decrease or loss of cardiac

1 return. You can't anatomically demonstrate that
2 their diaphragm is not moving up and down, and you
3 can't directly demonstrate that the ribs weren't
4 moving in and out.

5 You are looking at a constellation of
6 findings and extrapolating to what you know are the
7 physiological reactions and the physical reactions
8 to that scenario, so I am not able to do that.

9 If you are asking, can we show
10 whether she just had a small amount of weight on her
11 back for a while, allowed her to lift before there
12 was a shift and a heavier amount of weight that
13 terminology crushed her, no, I can't demonstrate
14 that by autopsy.

15 Q. Is there anything in the
16 injuries that lead you to believe that there was
17 that secondary shift?

18 A. No, there's nothing specific
19 that leads me to that, and as I've said in the
20 analysis of the entire case, I don't believe that's
21 what happened.

22 Q. Did you find any evidence of
23 when Ms. Aylwin took the last insulin shot?

24 A. No, I would have no way to
25 determine that.

1 Q. Would that matter in your
2 vitreous chemistry analysis?

3 A. Yes, I mean it's one of the
4 variables that I don't know. I don't know exactly
5 when she took her insulin that day. I don't know
6 how under control or not under control her diabetes
7 was on that specific day.

8 I don't know exactly when she last
9 ate. You know, there's a lot of things I just don't
10 know. So that's why the conclusions are, you know,
11 are sometimes not definite.

12 Q. But if we turn to the vitreous
13 chemistry, which is page 9 of this document,
14 Ms. Kuka, would you say that that indicates that or
15 does it indicate, at all, anything to do with her
16 insulin levels?

17 A. No, I can't draw any conclusion
18 regarding that.

19 Q. You talked a lot with Mr. Doody
20 about hemoconcentration or dehydration and the time
21 that that would take into account. And you said you
22 couldn't be precise, but you could shoot down some
23 estimates if he was to give you times and he said,
24 well, would you shoot down a week and you did.
25 Would you shoot down 12 hours?

1 A. I wouldn't shoot it down
2 a hundred per cent, but, again, on the balance of
3 probabilities I think it's highly unlikely she
4 survived 12 hours.

5 Q. There was a lot of talk this
6 morning about creatinine, which I didn't get
7 a chance to research. The analyses or the
8 conclusions that you were drawing were renal failure
9 or dehydration and you ruled out dehydration.

10 A. Yes.

11 Q. Which left medically renal
12 failure, but would it also -- or do you think that
13 it more strongly or more probably suggests a lab
14 error?

15 A. Yeah, I'm not sure I can --
16 I can quantitate the relative probabilities.

17 I really think I can just repeat what
18 I said, the theoretical possibility that there was
19 some sudden worsening of her diabetes and her renal
20 function, or it's a technical issue related either
21 to the quality of the sample or something going on
22 in the lab.

23 I'm not sure how you would compare
24 the relative likelihoods of those things.

25 Q. Certainly with the questions

1 that were put to you, Commission Counsel is
2 exploring at last, fairly strongly, the suggestion
3 of a secondary collapse.

4 I would like to just ask you, point
5 blank, is there anything in your analysis of this
6 person that supports the theory of her passing away
7 in a secondary collapse?

8 A. No, I don't see anything that
9 supports that.

10 Q. And as an expert witness
11 providing evidence to the Commissioner, would you be
12 comfortable with the Commissioner making a finding
13 of life beyond minutes or a very few hours?

14 MR. DOODY: Well, Mr. Commissioner,
15 my friend has been dancing around the ultimate
16 question here, and I think he may have put it,
17 perhaps, as close to the bulls-eye as he just did,
18 and I'm not sure whether it's helpful to know
19 whether the witness would be comfortable with any
20 particular findings he might consider making.

21 THE COMMISSIONER: I agree with that,
22 Mr. Cassan. Your previous question was a proper
23 one, I think, in relation to a 12-hour period, but
24 here you're getting very close to an ultimate
25 determination -- the ultimate jurisdiction of the

1 Commissioner.

2 MR. CASSAN: Sure and I understand,
3 Mr. Commissioner, that that is yours. I'm simply
4 trying to have the expert provide his evidence for
5 your benefit. If you are not comfortable with it --

6 THE COMMISSIONER: No, I'm not and,
7 again, I repeat that if it's framed in the manner in
8 which your previous question was framed, I have no
9 great problem with that, but then I think that's as
10 far as you can go.

11 BY MR. CASSAN:

12 Q. So, Dr. Queen, is it fair to say
13 that when you're looking at performing your task, as
14 you did with Ms. Aylwin, that you don't simply look
15 at any of the single tests or results or analyses
16 that we've talked about. In fact, you look at the
17 constellation of evidence.

18 A. Yes, it's vitally important that
19 we do it that way.

20 Q. And you look at the best
21 evidence, and you can go through a whole battery of
22 tests before coming to your conclusion.

23 A. Yes, I used a number of
24 techniques that have, you know, some reasonable
25 scientific objective basis.

1 Q. And so you would agree with me,
2 that at least in the Ontario medical system, what we
3 have here is the best expert -- or the most
4 qualified expert coming up with an opinion, based on
5 the best evidence.

6 A. If you are talking about
7 a forensic pathologist, in general, I'll agree with
8 that statement.

9 Q. Thank you. And so in your
10 opinion is it conceivable that Ms. Aylwin was alive
11 12 hours after the collapse?

12 A. I think I answered that. It's
13 not something I would categorically exclude, but
14 I think it's highly unlikely.

15 Q. Thank you very much Dr. Queen.
16 Those are my questions.

17 THE COMMISSIONER: Thank you.
18 Mr. Doody?

19 MR. DOODY: No questions,
20 Mr. Commissioner.

21 THE COMMISSIONER: Dr. Queen, thank
22 you very much for your evidence, the benefit of your
23 evidence today, the benefit of your expertise and
24 for having come to the Inquiry. We are very deeply
25 appreciative. Have a safe trip back home.

1 THE WITNESS: Thank you,
2 Mr. Commissioner.

3 MR. DOODY: Mr. Commissioner,
4 I regret to say there is no further evidence to call
5 today.

6 We tried to bring in some -- to move
7 some witnesses up in the chain, but unfortunately
8 unsuccessfully, so if I could ask you to adjourn to
9 Monday morning.

10 THE COMMISSIONER: Thank you. I'm
11 aware of those efforts, and I know they've been
12 serious. They were insuperable problems.

13 In any event, that means we start
14 with Griska, on Monday next at nine o'clock; is that
15 correct?

16 MR. DOODY: That's correct,
17 Mr. Commissioner.

18 THE COMMISSIONER: Thank you very
19 much, everybody. Have a good weekend.

20 -----
21 --- Whereupon at 1:13 p.m. the Inquiry proceedings
22 adjourned to 9:00 a.m. on Monday, September 23,
23 2013 ---

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REPORTER'S CERTIFICATE

I, LISA M. BARRETT, RPR, CRR
CSR, Certified Shorthand Reporter certify;

That the foregoing proceedings were
taken before me at the time and place therein set
forth, at which time the witness was put under oath
by me;

That the testimony of the witness
and all objections made at the time of the
examination were recorded stenographically by me
and were thereafter transcribed;

That the foregoing is a true and
correct transcript of my shorthand notes so taken.

Dated this 25th day of September.
2013.

Lisa Barrett

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