LOCAL COURT
New South Wales
Wollongong

Jurisdiction:	Coronial
Matter	Inquests into the deaths of JENNIFER CHANNELL and HELEN IVANOSKA
Hearing dates:	15, 16, 17 October 2012
Date of Findings:	20 November 2012
Findings of:	Ian Guy Deputy State Coroner, Wollongong
Representation:	Ms D Ward, Barrister, Counsel Assisting, instructed by Ms de Castro Lopo of Department of Attorney General and Justice. Ms J Lonergan SC, Barrister for Dr Muttaqi Mr G Butler, Barrister for Dr Chaudhry and Dr Schwarz Ms J Downing, Barrister instructed by NSW Crown Solicitor's Office for the Illawarra Shoalhaven Local Health District

Reasons for Findings

1. In 2005, Mrs Jennifer Channell fractured her lower left leg after a fall at home.

2. In 2011, Mrs Helen Ivanoska fractured her left knee after a fall in a shopping centre.

3. Both attended the Shellharbour Hospital Emergency Department. The fractures were managed conservatively with a splint in the case of Mrs Ivanoska and a plaster back slab fitted to the leg for Mrs Channell; pain relief and discharge home from the Emergency Department.

4. Mrs Channell and Mrs Ivanoska had similar risk factors for developing Deep Vein Thrombosis, which is a blood clot in the veins of the leg. Those risk factors were a fracture to the lower leg, immobility from wearing the splint and plaster slab, obesity and their age.

5. Neither patient was given any medication, known as pharmacological prophylaxis, to prevent the occurrence of a Deep Vein Thrombosis. Neither treating Doctor turned their mind to the need for such treatment. In 2010, a NSW Department of Health Policy Directive entitled “Prevention of Venous Thromboembolism” would require patients with a lower leg fracture who are admitted to Hospital to receive DVT prophylaxis. The Directive does not however apply to patients who attend the Emergency Department, are treated and released.

6. Both Mrs Channell and Mrs Ivanoska died at their homes from a Pulmonary Embolism. This occurs when some of the blood clot from the leg becomes detached and moves from within the deep leg vein through to the heart and lodges in one of the pulmonary arteries.

7. The Hospital conducted Morbidity and Mortality meetings in relation to both deaths. The conclusions reached were that the treatment by the relevant Doctors was appropriate.

8. An inquest into Mrs Channell's death was initially dispensed with. The more recent death of Mrs Ivanoska, their similarities in the risk factors, the cause of death, treatment provided and the broader question of any necessary changes to Hospital practices in dealing with these type of patients led to the decision to hold concurrent inquests.

9. A number of issues arise from the above outline. They can be conveniently summarised as –

   - Were Mrs Channell and Mrs Ivanoska at risk of Venous Thromboembolism
   - What VTE Policy if any applied to patients in the Emergency Department
   - What was the treatment provided to both and was VTE considered
   - What was the response by the Hospital
   - What recommendations should be made

The nature of an inquest.

10. Before turning to the issues, it is important to briefly outline the nature of an inquest. It should be noted the role of the Coroner is limited by statute in particular under section 81 of the Coroners Act to return a finding where there exists sufficient evidence as to the identity of the deceased, the date, place manner and cause of death. An inquest is not adversarial in nature. It is neither a criminal law nor civil proceeding.

11. Section 82 allows recommendations to be made by the Coroner as considered necessary or desirable in relation to any matter connected with the death the subject of inquest.

12. Apart from the statutory functions and power to make recommendations, an inquest may serve the important function of enabling family members to better understand the circumstances surrounding the death of a loved one.

13. The main focus of these inquests has been the manner, cause of death and any recommendations that may flow. It should be noted it is not the function of the Coroner to make formal findings of negligent behaviour on the part of any particular health professional involved in the care of either Mrs Channell or Mrs Ivanoska. Nor is the Coroner's role to sit as a type of medical misconduct tribunal. Where specific or systemic failings of an individual or organisation are identified, any commentary or findings are done so in the context of determining the manner and cause of death.

Events leading to the death of Mrs Channell

14. In the late afternoon of Saturday 16 April 2005, Mrs Jennifer Channell, then aged 48 years was at home. She twisted and fell after missing the bottom step and was taken to Shellharbour Hospital. A triage nurse initially saw her. X-rays were taken of the left ankle, left knee and right ankle. They showed a fracture of the proximal end of the left fibula with minimal displacement. The plan by Dr Chaudhry, Registrar was for pain relief and to immobilise the left foot, ankle and leg by a below the knee back slab. Mrs Channell was discharged home from the Hospital Emergency Department with pain relief and a set of crutches.

15. Mrs Channell’s husband said after leaving hospital, his wife was unable to walk because of the slab to her left leg and the injury to her right ankle which was taking all the pressure and that it was also swollen. On the following Monday evening, Mrs Channell collapsed at home. Ambulance officers attended but were unable to revive her. The Post Mortem report prepared by Dr McBride, Pathologist recorded –

> “she was probably at increased risk of a pulmonary embolism because of her gross obesity and immobility following her accident”.

16. The direct cause of death was recorded as Pulmonary Thromboembolism. The antecedent causes were recorded as Deep Vein Thrombosis and recent fractured left leg. Other conditions possibly contributing to the death were recorded as morbid obesity.

Events leading to the death of Mrs Ivanoska

17. On 11 July 2011, Mrs Ivanoska then aged 59 years slipped over while shopping injuring her knee. Ambulance officers took her to Shellharbour Hospital just after 1 p.m. She was initially seen at triage and later seen by Dr Muttaqi, then a Resident Medical Officer. The computerised medical history recorded among other things she was unable to weight bear, had a history of fibromyalgia, a restricted left knee movement in all directions and a closed injury. The x-ray showed an undisplaced longitudinal break of the proximal tibia. The plan was the use of a Zimmer splint in full extension, to see a specialist in one week with a repeat x-ray and pain relief. Mrs Ivanoska was discharged at about 8 p.m.

18. Family members took Mrs Ivanoska back to her daughter's house. Her daughter, Ms Bosevski said her mother was very sleepy the following week complaining at times of pain in the left shin.

19. On 18 July 2011,Ms Bosevski left for work. Her mother appeared fine. She had showered, put the brace back on her leg and managed to walk upstairs into the kitchen area. In the early afternoon, Mrs Ivanoska began experiencing extreme breathing difficulties. A 000 call was made. The telephone call recording reveals the extent of Mrs Ivanoska's distress. By the time the Ambulance Officers arrived, Mrs Ivanoska was deceased.

20. The Post Mortem summary prepared by Dr McBride, Pathologist recorded –

> "the deceased was grossly obese and together with immobility was at significant risk for a Deep Vein Thrombosis. No DVT prophylaxis was given. She died suddenly at her daughter's house one week after the fall and the post-mortem showed a large pulmonary thromboembolism".

21. The direct cause of death was recorded as Pulmonary Thromboembolism Deep Vein Thrombosis. The antecedent causes were recorded as Zimmer splint immobility, fractured left knee following fall, obesity.

Issue 1 –Were Mrs Channell and Mrs Ivanoska at risk of DVT

22. The Post Mortem reports have a consistent theme of a lower leg fracture, immobility, obesity, an increased risk of developing a Deep Vein Thrombosis and the absence of DVT prophylaxis. To those risk factors can be added their age. Some explanation is required of the condition, the risk factors and available treatment.

23. The National Health and Medical Research Council Guideline for the Prevention of Venous Thromboembolism in Patients Admitted to Australian Hospitals (NHMRC Guideline) explains that Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE) are two aspects of one disease process known as Venous Thromboembolism (VTE). In DVT a thrombosis or blood clot forms in the deep veins of the leg or pelvis. In PE, some or all of the thrombus

becomes detached and moves to one of the pulmonary arteries that can cause shortness of breath, chest pain, heart failure and death[1].

24. The NHMRC Guideline reveals the extent of the problem of VTE when it is considered hospitalised patients are 100 times more likely to develop a DVT or PE compared with the rest of the community. 30,000 people per year are hospitalised in Australia as a consequence of VTE an estimated 2000 of which die from this condition. Moreover, PE is described as one of the most common causes of death in hospital accounting for 10% of all hospital deaths.

25. The NHMRC Guideline observes that effective VTE prevention measures have been widely reported to be underutilised and inconsistently applied[2].

26. There are clear risk factors in developing VTE. Again drawing from the NHMRC Guideline, there are those personal to the patient, those related to an acute medical illness and those related to an injury or surgical procedure.

27. The individual risk factors are --
    - Age
    - Pregnancy
    - Malignancy
    - Previous VTE
    - Varicose veins
    - Marked obesity
    - Prolonged severe immobility (prolonged bed rest, immobilisation in a plaster cast or brace)
    - Hormone replacement therapy or oral contraceptives
    - Inherited or acquired thrombophilia

28. The NHMRC Guideline identifies within the category of risks related to an injury or surgical procedure a leg injury that requires surgery or prolonged immobilisation. Dr Tomlinson, Vascular Surgeon, an expert called at the inquest explained the process of thrombosis is triggered by surgical trauma or a fracture. It involves a "cascading" range of chemicals within the body that work to stop the body bleeding to death. The blood in that area changes in the clotting process from liquid to solid and hence the thrombosis.

29. Dr Vinen, Emergency Medicine Specialist, an expert called at the inquest referred to research indicating a 30-50% occurrence of DVT in trauma patients with lower extremity fractures.[3]

30. Dr Tomlinson said the significance of age was a complex subject but includes decreased mobility and changes in the body that for older people tend to create higher viscosity in the blood and potential for clotting. The Guideline notes the annual incidence of VTE rises with each decade over the age of 40[4].

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[1] Brief p 176
[2] Brief p 167
[3] Brief p 244
[4] Brief p184

It is to be remembered Mrs Channell was 48 and Mrs Ivanoska was 59 years of age.

31. Dr Tomlinson explained varicose veins could increase the risk of VTE. He said even though a patient may have an operation for varicose veins, the underlying problem of the valve involved in the blood circulation might still exist. Mrs Ivanoska's medical history included an operation for varicose veins.

32. Obesity was viewed by Dr Tomlinson as a stand alone risk factor. With obesity comes an increase in blood disorders, an increase in cholesterol, and a degree of immobility and higher viscosity of the blood. The body mass index, a calculation of the height and weight of a patient is a very important matter to consider. Mrs Channell weighed 118 kg and had a body mass index of 43.4 placing her in the morbidly obese range. Mrs Ivanoska weighed 112kg and had a body mass index of 37.4. It is worth observing the NSW Health Policy Directive notes -

> "Obese patients (body mass index >30 kg/m2) may have an increased risk of VTE."

33. The NHMRC Guideline notes immobilisation of the lower leg is a "significant risk factor for the development of VTE".[5] Dr Vinen explained the effect of prolonged immobilisation. In the absence of rhythmic contraction of the leg muscles (as in walking or moving) due to immobilisation following the application of a splint or plaster cast, blood flow in the veins slows and even stops in some areas leading to stasis, predisposing patients to thrombosis[6].

34. Dr Tomlinson said the medical condition Lupus can lead to an increase in the viscosity of the blood and increase the risk of thrombosis. Although there were notations in Mrs Ivanoska's earlier clinical Hospital records indicating a history of Lupus, blood tests after death show no chemical evidence of that condition. It is however clear even a presumptive diagnosis of Lupus is considered a "red flag" in the risk assessment for VTE.

35. There was from the experts a consistent message. In carrying out a risk assessment for VTE, consideration must be given to the cumulative nature of the risk factors on an individual patient.

36. There was from the experts a consistent view that both Mrs Channell and Mrs Ivanoska's risk factors were at a level where pharmacological VTE therapy should have been offered to reduce the risk of VTE. Some examples suffice—

    - Dr Brighton, Haematologist- "Mrs Ivanoska was at moderate risk of developing symptomatic vein thrombosis related to her injury. This equates to a 1-2 % risk of symptomatic vein thrombosis (either DVT or PE) and a fatal risk of PE of 0.1-1.4%" .He would have discussed the risk of vein thrombosis and Heparin with her and recommended she take it given her risk.[7]A similar view is expressed concerning Mrs Ivanoska.

[5] Brief p188
[6] Brief p242
[7] Brief tab 35 page 5

- Dr O' Keefe, Orthopaedic Surgeon said in view of Mrs Ivanoska's increased risk factors she should have been offered prophylaxis particularly in view of the "presumptive" diagnosis of Lupus. He considered Mrs Channell should have been advised to take Asprin.[8]

- Dr Vinen, Emergency Medicine specialist said both were at significant risk of thromboembolic complications[9];

- Dr Tomlinson, Vascular Surgeon said based on the apparent history of Lupus, Mrs Ivanoska had an extremely high risk of developing DVT. He said Mrs Channell had a moderate risk[10].

VTE treatment

37. A review of the literature referred to by the experts suggests the choice of type of pharmacological therapies for VTE can vary depending on factors such the nature of operation or trauma and associated level of risk. A body of evidence points to the efficacy of using the anticoagulant Heparin by way of injection in many cases.

38. The NHMRC Guideline, after referring to a study, concluded—

> "Patients who had a leg injury that had been immobilised in a plaster cast or brace (regardless of whether they were operated on, or whether the injury was a fracture or soft tissue damage) had significantly reduced occurrence of DVT (proximal and distal) with low molecular weight Heparin"[11].

39. Submissions were made as to whether the research supports the conclusion that Heparin consequently reduces the risk of developing a Pulmonary Embolism. It is beyond the scope of these inquests to resolve this issue save to observe there was an unequivocal opinion from the experts that from their clinical experience and as a matter of commonsense, using Heparin to reduce the incidence of DVT which is the source of an embolism must correspondingly reduce the risk of a patient developing a potentially fatal Pulmonary Embolism.

40. Submissions were made on behalf of the Health District that at the relevant time of treatment of Mrs Channell and Mrs Ivanoska the literature on the preferred treatment method for VTE was not "black and white". This submission however overlooks the fact the treating doctors had not considered the issue of VTE at all.

Contraindications to VTE treatment

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[8] Brief tab 34 p 3
[9] Brief p252
[10] Brief p207
[11] Brief p 188

41. It is abundantly clear a risk assessment for VTE must occur, balancing the benefits of the VTE therapy with the risk of bleeding. Those bleeding risk factors include current active major bleeding, a major surgical procedure and bleeding disorders.[12]

42. Neither Mrs Channell nor Mrs Ivanoska had any condition that would suggest VTE therapy was contraindicated. Indeed Dr Tomlinson made the telling observation that if anticoagulants are given, you can correct the treatment but if you don't the patient can die.

Issue 2— What VTE Hospital Policy if any applied to patients in the Emergency Department

43. In December 2010,the NSW Health Department published a Policy Directive entitled "Prevention of Venous Thromboembolism". Its purpose is –

> "To ensure routine venous thromboembolism risk assessment is undertaken on all admitted adult patients and that patients identified at risk of developing a VTE receive appropriate mechanical and pharmacological prophylaxis"[13].

44. The Policy Directive details the steps to be taken in a VTE risk assessment, the treatment, identification of the various pharmacological agents available, the need to document the risk assessment in the hospital record, the need for discussion with a patient about the symptoms of VTE and their treatment options.

45. The Policy Directive notes that in determining the type of prophylaxis to be given, regard should be had to the NHMRC Guideline. Extracts of the Guideline are annexed to the Policy. They record that evidence supports the use of Low Molecular Weight Heparin for a lower leg fracture and injuries with immobilisation.

46. Although the Policy Directive and NHMRC Guideline were not operational when Mrs Channell was treated, the existence of VTE, the risk factors and treatment is not a recent phenomenon. The Best Practice Guideline for Australia and New Zealand first edition entitled 'Diagnosis and Treatment of VTE", published in May 2004 identifies various risk factors and available treatment options. Of note, it observes –

> "The ease of use and relative safety of LMWHs have changed the treatment of DVT in the majority from an inpatient setting to one suitable for ambulatory care".[14]

47. The question has recently arisen whether the Policy Directive could be interpreted as applying to Emergency Department patients. By letter dated 29 October 2012, the Clinical Excellence Commission said in its opinion the

[12] See Guideline at p185 Brief
[13] Brief p 135
[14] Brief p 156

Policy Directive is ambiguous. It says the Policy is for all adult patients admitted into Hospital and this may include patients admitted into an Emergency Department who are treated and discharged. These patients have not been formally admitted into a Hospital ward but have been seen by a medical/ nurse practitioner and received assessment and care.

48. The inquests have proceeded on the clear understanding by all parties the Policy Directive is presently limited to patients who are admitted as inpatients. The reference to adult patients admitted to NSW hospitals supports this interpretation. Further, the Policy Directive refers to the Guideline which inturn makes clear that it (the Guideline) does not provide recommendations for the prevention of VTE in patients who present to emergency departments but are not admitted[15]. Dr Vinen also expresses the view he is unaware of any Hospital that routinely does a risk assessment for patients with a lower limb fracture dealt with in the Emergency Department.[16]

49. Had Mrs Ivanoska been admitted as an inpatient with the same treatment plan of leg immobility in a splint, she would have received a VTE risk assessment in accordance with the Policy Directive. Her risk factors would have been noted and applying the NHMRC Guideline, she would have been given Heparin by injection.

50. The question might fairly be asked why should there be a policy for persons admitted as inpatients and no policy for patients treated at the Emergency Department when the risk of VTE could be the same? There is in short, no logical answer to this question.

51. A further and perhaps an even more fundamental question that might be asked is why, even if there is no Policy or Guideline, would you not apply the necessary clinical judgement to the individual patient's needs and treat accordingly.

52. The experts are clear. Patients admitted and those treated in the Emergency Department can have the same risk factors. Dr Brighton, Haematologist said he would personally argue the difference in risk and management of the two cases differs little if they were the managed either as inpatients or as outpatients. He said the simple exercise of not admitting such patients to Hospital (and managing the patients at home) to his mind does not really make them significantly less likely to suffer vein thrombosis[17]. Similarly, Dr Vinen noted patients with lower leg injury requiring immobilisation and who are discharged are essentially at the same risk of developing thromboembolic complications as those admitted to Hospital.[18]

[15] Brief p 177
[16] Brief p247
[17] Brief tab 35
[18] Brief p252

Issue 3--What treatment was provided and was VTE considered for Mrs Channell

53. On 16 April 2005 Dr Chaudhry, Registrar was working in the Emergency Department when saw Mrs Channell. Her vital signs were taken at triage, being her temperature, pulse, respiration rate and oxygen level. The section referring to weight was left blank. An X-Ray was taken. An examination occurred and the treatment plan recorded in the Hospital notes was –

    "Analgesia, back slab and follow up with surgeon".

54. It would be fair to say the contrast between the patient history recorded in the Hospital notes and that asserted in Dr Chaudhry's written statement is more than stark. The Hospital notes record –
    Fall
    Injury to right ankle, left ankle and left leg
    Nil other injuries superficial grazes both ankles, anterior aspect
    Fracture left tibial shaft proximal end
    Plan—analgesia, back slab and referral to orthopaedic surgeon

55. Dr Chaudhry's statement was a detailed letter prepared over six months after the death and directed to the Police Officer who was at that time conducting an investigation into Mrs Channell's death. The statement asserts a medical history was taken in detail and the following were noted--

    a. She had previously suffered from three lower limb fractures of which two involved the left ankle and foot respectively.

    b. She had recovered from these injuries without any untoward complications including Deep Vein Thrombosis.

    c. She did not suffer from any bleeding or clotting disorders; neither did she develop any of these conditions during her life.

    d. She did not give a history of significant cardiovascular, neurological, endocrine, gastrointestinal or musco-skeleto condition of note. Neither was she on any medication e.g. oral contraceptives.

    e. A high body mass index was noted.

    f. There was no family history of haematological conditions or pre-dispositions.

56. I have a number of concerns about Dr Chaudhry's statement. First, none of the asserted medical history is found in the contemporaneous Hospital notes. Secondly, one could be mistaken in concluding Dr Chaudhry had considered the VTE issue, the advantages and disadvantages concluding prophylaxis therapy was not appropriate. For example, the references to untoward complications including DVT, bleeding or clotting disorders, and a high body mass index and medications including oral contraceptives (which is a known risk factor for VTE).

57. The overwhelming perception that active consideration was given to the VTE issue is further demonstrated by the comment in his statement—

> "f. Necessary splinting with provision of crutches and analgesia to aid mobility was considered an appropriate and safe balance between management of her injury and prevention of deep Venous Thrombosis."[19]

58. Dr Chaudhry's evidence at the inquest however is that the risk of VTE "never crossed his mind". Such an acknowledgement is not found in any part of Dr Chaudhry's lengthy statement. I have no confidence the medical history referred to in Dr Chaudhry's statement was in fact taken at the time of his examination of Mrs Channell.

59. To the extent Dr Chaudhry sought to justify in his statement not using VTE therapy, the arguments are without merit. The assertion that her high body mass index does not "by itself" place her at high risk of DVT is against the weight of the evidence at inquest that it is a stand alone factor. The reference to "by itself " also fails to take account of the cumulative effect of a number of risk factors.

60. Reference was made in the statement to Mrs Channell's "young age" deceasing the likelihood of complications, as they are more robust and able to better withstand stress. This was described by Dr Vinen, Emergency Medicine specialist as "essentially meaningless".[20]

61. The statement asserted that to place Mrs Channell on anticoagulation "simply on account of her body mass index is not standard departmental practice and would have exposed her to a risk of bleeding". This again underscores the focus on one factor rather than assessing the risk in total. The risk of bleeding was on the experts view far outweighed by the risk of VTE and there were no contraindications to VTE therapy.

62. Dr Chaudhry's statement recorded "the risk of not splinting outweighs the risk of Deep Vein Thrombosis". Dr Vinen observed that the statement misses the point –both splinting and prophylaxis was required[21].

63. Dr Chaudhry's statement recorded—"It is not standard management in ambulatory patients with lower limb fractures to commence prophylactic anticoagulation". At the inquest Dr Chaudhry somewhat remarkably maintained that it was not at that time appropriate to consider the risk of DVT "because there was no such practice". Dr Vinen answers these comments simply. He said-

> "Much of emergency care is not standard practice because every patient has unique requirements requiring individualization of treatment based on these requirements"[22].

[19] Brief p 122
[20] Brief p 249
[21] Brief p241

64. It is of course to be remembered Dr Chaudhry's statement was made some seven years ago when he was a relatively junior doctor. Indeed Dr Vinen observed the failure to consider VTE issues in either Mrs Channell's or Mrs Ivanoska's case was not surprising. Evidence at the inquest suggested Doctors in the Emergency Department may be more focused on the actual injury and that Doctors who are involved in admitting an inpatient may have more occasions to consider VTE issues than those working in the Emergency Department.

65. At the inquest, Dr Chaudhry was prepared to acknowledge he would consult with a colleague if he had concerns. However it must be said the level of confidence that consideration would now be given to VTE in a case similar to Mrs Channell was far from strong. He said after seven years in emergency medicine -

> "Would it affect a change in management I am not entirely sure. When I sit down and think a little bit more, probably yes."

66. He was pressed on this reply and asked by Counsel Assisting —

> Q: Well might you sit down and consider whether you even need to assess her risk factors for DVT?
> A: Again with hindsight of this experience in my life and the clinical experience gained, probably yes but then again on a normal practice on a normal day you receive tons of patients into the department who are seen, treated and discharged in the same manner.

67. Dr Chaudhry's evidence on this issue was equivocal and in light of the overwhelming evidence from the experts is in my view disconcerting.

68. I agree with the submission from Counsel Assisting that Dr Chaudhry struggled with the idea of a risk assessment tool for VTE. Counsel identified the approach to assessing the VTE risk by reference to a number of factors such as weight, injury and immobility. Dr Chaudhry asked –"What are we going to do with these steps that is the question". Dr Chaudhry went on to say if you have a patient with 3 or 4 factors and the check mark is high risk, what do you do now-do you give them prophylaxis? The response from Counsel Assisting was appropriately ---

> "No you exercise your clinical judgement doctor and take the next step of assessing whether there are any contraindications to prophylaxis. Do you think that is a sensible approach".

69. Dr Chaudhry's reply was it is not that easy and it is one of the most complicated medical sciences. This exchange and his evidence overall clearly supports the conclusion Doctors in the Emergency Department would be assisted by a Guideline and risk assessment tool for VTE.

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[22] Brief p 249

Issue 4—What treatment was provided and was VTE considered for Mrs Ivanoska

70. Mrs Ivanoska was initially seen by a nurse practitioner, an x-ray ordered and pain relief given. She was seen by Dr Muttaqi about 4pm.She was examined and a history taken. For reasons that will shortly follow, exactly what history was taken and considered is unclear.

71. The Hospital notes recorded by Dr Muttaqi refer to her age and fall in the shopping mall, that she fell onto her left knee, was unable to weight bear, denies head injury and any other injury. It records a history of fibromyalgia. Medications were noted as cartia (aspirin) and nexium. Her observations were stable. She had restricted left knee movements in all directions and closed injury. The x-ray revealed an undisplaced longitudinal break of the left tibia, intercondylar, with preserved joint space. The treatment plan was a Zimmer splint in full extension; to see Dr Elliot in a week with repeat x-ray and analgesia. The notes record – discussed with orthopaedic registrar Dr Ben Schwarz, film reviewed agreed above.

72. Two main issues arise in relation to the evidence of Dr Muttaqi. First, the extent of the medical history considered at the time she saw Mrs Ivanoska and secondly, whether consideration was given to the risks of VTE.

73. A reading of Dr Muttaqi's statement would suggest a comprehensive medical history was taken at the time she saw Mrs Ivanoska. Paragraph 10 is in these terms--

> "10.On questioning Mrs Ivanoska said she had a past history of fibromyalgia. I noted that her past medical history as documented in her clinical record indicated that she had undergone bilateral total hip replacements, an appendicectomy and cholecystectomy, had been diagnosed with an ovarian cyst, endometriosis and superficial thrombophlebitis (the absence of a DVT was confirmed on 3/2/2010). Mrs Ivanoska did not have any history of hypertension, high cholesterol or DVT nor was there any family history of cerebrovascular accident or ischaemic heart disease".

74. With the exception of the reference to Fibromyalgia, these details do not appear in the Progress Notes created by Dr Muttaqi on the day she saw Mrs Ivanoska.

75. In evidence at the inquest Dr Muttaqi said when preparing her statement she could not remember if she had in fact accessed the patient's electronic record at the time she saw Mrs Ivanoska. She said she did look at a hard copy of the patient history when preparing her statement. The information recorded in paragraph 10 can in fact be sourced to Progress Notes of an earlier attendance at Hospital on 14 February 2010.

76. I have no confidence paragraph 10 of the statement accurately reflects her knowledge at the time of seeing Mrs Ivanoska.

77. The medical history set out in paragraph 10 of Dr Muttaqi's statement omits a potentially significant matter and a risk factor for DVT, namely an apparent diagnosis of lupus. There are references to Lupus in several sections of the past Hospital records, including the page of the notes dated 14 February from which much of the medical history recorded in paragraph 10 has its apparent source. Dr Muttaqi agreed the reference to Lupus was a significant omission. She cannot remember how she missed it.

78. It is not realistic to expect busy medical staff to review in every case the prior records of a patient. It is in my view probable in light of the blood chemistry results post mortem that are negative for Lupus, Mrs Ivanoska did not raise it with the Doctor. But had a risk assessment for VTE been undertaken, factors like Lupus and other blood conditions would normally be elicited.

79. A reading of Dr Muttaqi's statement, including her references to DVT would strongly suggest she turned her mind to the risk of VTE. A further example appears in paragraph 16 –

> "DVT prophylaxis was not considered for Mrs Ivanoska. She was already taking Aspirin and there is no protocol in the ED at Shellharbour Hospital for DVT prophylaxis to be given after a lower limb injury. Further DVT prophylaxis was not suggested by the orthopaedic registrar at Wollongong Hospital."

80. The reference to Mrs Ivanoska already taking Asprin could only reasonably be construed as Dr Muttaqi considering the risk of VTE and factoring in the decision she was already on an available prophylaxis, namely Aspirin. The evidence however is clearly contradictory. The treatment plan recorded in the Progress Notes is silent on Asprin; there is no record of the amount prescribed or any consideration of the need for adjustment of the dose in light of the injury. Moreover, Dr Muttaqi stated at the inquest she did not turn her mind at all to the question of VTE. She said—

> "It didn't cross my mind as she was an ambulatory patient".

81. This concession made at the inquest does not appear in her statement.

82. Pressed on the significance of a patient being ambulatory, Dr Muttaqi appeared to view the issue in extremes. An example was given of a non ambulatory stroke patient confined to bed. There is in fact, as made clear by the experts, a spectrum of immobility and VTE risk with a leg fracture and splinting of the leg. Dr Vinen, Emergency Medicine specialist said his advice to patients with a similar fracture is to essentially remain immobile with the leg raised.

83. I agree with the submission of Counsel Assisting that Dr Muttaqi struggled to accept in determining VTE risks there is a need to consider the cumulative effect of the risk factors and not view them in isolation.

84. Moreover, Dr Muttaqi struggled significantly with the concept that treating a patient at risk of VTE is not ruled by the fact there may be no Policy directing you to consider it. The scenario was put to Dr Muttaqi of a patient presenting today at the Emergency Department with an injury and risk factors similar to Mrs Ivanoska. Asked if those risk factors will be taken into account in deciding if prophylaxis will be given to a patient you intend to discharge, Dr Muttaqi said—

> "Yes, but that is not the decision I should take I think .The decision has to be taken by senior authority, meaning the Policy".

85. Dr Muttaqi was also asked with the benefit of hindsight would she do anything differently in a similar case. Apart from the need to focus on the clinical history, she said consideration of DVT prophylaxis—

> -" is not her decision to take but it has to come from the Policy wise then we can put it into practice".

86. Dr Muttaqi sought to defend her position stating the NHMRC Guideline –

> "strongly recommended patients not for DVT prophylaxis in case of discharge from hospital with even elderly patient and immobile patient as an outpatient setting".

87. This is simply an incorrect statement of the Guideline. It in fact says relevantly, the Guideline does not provide recommendations for prevention of VTE in patients attending hospital as outpatients and patients who attend the emergency department but who are not admitted. It is very difficult to understand how a Guideline that does not provide recommendations in certain circumstances can be interpreted as a strong recommendation not to treat with VTE prophylaxis.

88. Dr Muttaqi's view as to the actual risk of VTE for Mrs Ivanoska was also of some concern. She was asked her assessment of the VTE risk with and without the Lupus factor. Her clear reply to both questions was that it was a moderate one. This sensible concession and one consistent with the experts was then withdrawn in very unsatisfactory terms, stating she misunderstood the questions. She then assessed the risk as "average". It is unclear what this means.

89. The concerns about aspects of Dr Muttaqi's evidence highlighted above only reinforce the need for consideration of a prompt or VTE risk assessment tool and a Guideline.

Communication with Dr Schwarz

90. It is clear Dr Muttaqi contacted by telephone Dr Schwarz, the on call orthopaedic registrar at Wollongong Hospital to the discuss the case. The difficulty is determining exactly what was discussed. Dr Schwarz has no independent memory of the conversation, although his statement records the recommended plan of a Zimmer splint, non weight bearing for a minimum of 6 weeks, lower limb ice and elevation and discharge when safe with follow up. It is clear they did not discuss the question of VTE. Whether Dr Schwarz was

advised of the age and weight of the patient cannot on balance to be established.

91. Dr Schwarz was aware an individual approach to patient care is required and a total picture of the individual risk factors for VTE is necessary. His written statement does however reinforce the apparent disparity of approach between trauma patients admitted into the Hospital and those treated at the Emergency Department and then released. He noted at paragraph 6—

> "6.DVT prophylaxis medication is not routinely prescribed for patients with minor trauma lower limb fractures or ligamentous injuries that are discharged home from the emergency department".

92. At the inquest, Dr Schwarz said he was in fact unaware of any persons at Wollongong Emergency Department who are discharged with prophylaxis. Dr Muttaqi made a similar comment in her evidence. Dr Chaudhry who continues to work in Emergency Medicine had not even seen the Policy Directive concerning VTE prior to becoming aware of the inquest. The evidence reinforces the conclusion that at present a curtain is drawn between those admitted and those treated in the Emergency Department.

Issue 5—What was the Response by the Hospital

93. Counsel Assisting rightly observed in submissions the importance of the community having confidence in the Hospital's own internal review of major events that affect patient safety. It is then appropriate to briefly review the Hospital's response to both deaths.

94. Mrs Channell died on 16 April 2005 and was brought to Shellharbour Hospital on that day. Dr Chaudhry was in fact on duty that day and was aware of her arrival. The former Clinical Governance Unit of the Hospital was not however aware of the death until 2006 following a complaint by Mr Channell to the Health Care Complaints Commission.

95. A Morbidity and Mortality meeting was conducted in 2005. The minutes of the meeting were on any view grossly defective. No outcome or recommendations is recorded. They do however record the following comment--

> " Should a patient of this body habitus with this injury get similar DVT prophylaxis to an inpatient".

96. This question neatly summarises the issue now the subject of an inquest some 7 years later.

97. In the case of Mrs Ivanoska, the Hospital was unaware of her death prior to advice of the proposed inquest. A Morbidity and Mortality meeting was conducted in September 2011. The record refers to her age, weight, and presentation with a fracture, use of plaster on the leg, discharge and the pulmonary embolism. It says –

> “Brief discussion ensued regarding if this could have been prevented but with no firm conclusions”.

98. It is clear no follow up action was planned.

99. A further Morbidity and Mortality meeting was conducted in February 2012. It refers to a Doctor reporting on two cases of pulmonary emboli death in patients with lower limb fractures. Reference is made to a 59-year-old with a fracture of the tibia and a 52-year-old with a tubular fracture both treated as outpatients. It is assumed the reference to the 52-year-old is an error as Mrs Channell was 48 years old.

100. The minutes of the meeting record the following—

> “Current guidelines do not advise pharmacological DVT prophylaxis for ambulant patients. The meeting discussed advising patients at risk with lower limb immobilisation. The meeting agreed to refer the cases for discussion at the orthopaedic M and M to determine if clinical practice should change and if so whether Orthopaedic registrars should advise ED staff upon referral of patients”.

101. The are a number of difficulties with these minutes—

- Although it may be a matter of expression, the Guidelines do not in terms turn to consider outpatients and advise against the use of prophylaxis.
- The discussion about advising patients of the risks contains no concluded view.
- Most significantly, there is no evidence the orthopaedic section was in fact asked to consider the issue or responded.

102. Based on the above outline, the general community might justifiably have concerns about the quality of the Hospital’s internal review process.

103. Moreover, when regard is had to the paucity of records of the meetings to discuss both deaths, they are at first glance difficult to reconcile with the written advice from the Crown Solicitor’s Office acting on behalf of the Health District. The letter says the Morbidity and Mortality meetings found the management and treatment had been appropriate, there were no concerns about staff performance, systemic issues or non compliance with Policy. The inquest was advised discussions between the Director of Clinical Governance and one of the Doctors who attended the meeting supplemented the information contained in the letter.

104. There are two principle matters arising from these Morbidity and Mortality meetings. The first is the content and manner in which they were conducted. In light of the significant concerns highlighted above it is timely to observe the Hospital has issued a direction in May 2012 entitled “Principles and Guidelines for Morbidity and Mortality Meetings”.[23] A reading of the document suggests

[23] Tab 40 brief

an aim of establishing a structured and more rigorous method for the review of major adverse events with a copy of the report forwarded to the Clinical Governance Unit.

105. The second matter arising from the meetings involves the conclusions reached concerning the appropriateness of the treatment provided to Mrs Channell and Mrs Ivanoska. Given the unsatisfactory state of the records, it is difficult to know the extent of the information about each patient available to those at the meeting, nor whether they were aware the treating Doctors had not turned their mind to the risk of VTE. What is clear is the opinion of the Morbidity and Mortality meeting that the care and treatment for both patients was appropriate. On the face of it, this is in stark contrast with the views of an expert Vascular Surgeon, Haematologist, Orthopaedic Surgeon and an Emergency Medicine specialist. All considered the significant level of risk of VTE required discussion with both patients about VTE risks and a recommendation for VTE prophylaxis.

106. A Root Cause Analysis (RCA) investigation was not conducted in either matter. The Hospital said that on the information available and the existence of two reported deaths that were six years apart, the deaths were considered rare, being likely to occur every five to thirty years. Applying the relevant criteria for Incident Management, an RCA was not required.

107. The decision not to conduct an RCA is not the subject of criticism. The Hospital can only work with the information it receives. However, it is to be remembered the significance of these cases came to light through the "corporate memory" of Dr Mc Bride and it was happenchance the patients were living in the Wollongong area. There is in my view a difficult and important question as to how the circumstances of persons who are treated at the Emergency Department, released and die are the subject of Hospital safety review. The true extent of the number of deaths of persons in similar situations to Mrs Ivanoska and Mrs Channell after discharge from outpatients is far from clear.

Issue 6--The Question of Recommendations

108. Whether it is as simple as amending an existing Policy dealing with inpatients to extend to those seen in the Emergency Department and released is beyond the expertise of this inquest.

109. The manner by which patients who attend the Emergency Department with a lower leg fracture are to be assessed for the risk of VTE and an appropriate treatment plan formulated is ultimately for consideration by the Department of Health and the Clinical Excellence Commission. I note that the Commission is presently reviewing this issue.

110. Although lower leg fractures and subsequent risk of VTE was the focus in these inquests, there is much to the argument that if VTE risk is to be considered for leg fractures any guideline should not be narrowly confined. In

other words, the duty of care to assess for VTE risk should arguably apply to all patients treated whether an inpatient or in the Emergency Department.

111. There is no dispute those working in the Emergency Department should have the assistance of a Guideline or prompt to remind them of the risk of VTE and the need to formulate an appropriate treatment plan. There is however a note of caution. There emerges in these inquests a disturbing perception that treatment is determined by Guidelines or more relevantly, the absence of a Guideline or Policy. The need for the exercise of clinical judgement in the individual case is of paramount importance and may require further training.

112. As indicated in these findings, obesity is a recognized factor in a VTE risk assessment. The evidence suggests weighing of patients is not a regular occurrence. Dr McBride, Pathologist made important observations concerning obesity and record keeping. He described an epidemic of cases of morbid obesity seen in the mortuary. There was he said a paucity of Hospital records stating basic measurements of age, sex, weight and height. Dr McBride made this important observation at the inquests--

> "I am left to quandary how you can make decisions related to therapeutics or recognize risk factors if you can't even record the basic observations."

113. Dr Vinen, Emergency Medicine specialist agreed the issue of weighing patients is not done well and that it should be done routinely. Dr Vinen saw benefit in some sort of electronic prompt that alerted doctors to the need to take a patient's weight and/or to assess body mass index. The latter calculation would appear to be of particular relevance in VTE risk assessment. The recommendations are framed to request the authorities to consider this issue in any Guideline that is developed.

A Missed Opportunity

114. I have no doubt these inquests have caused great distress to the families of Mrs Channell and Mrs Ivanoska.

115. The Channell family went through the grief of the loss of Mrs Channell in 2005. To have the circumstances of her death reviewed in a formal hearing years later would add to the continuing sense of loss.

116. For the Ivanoska family, the article in the local newspaper read to the Court concerning Mrs Ivanoska reminds us of her life, her contribution to the community, how she was loved by many and dearly missed.

117. The inquests have however served a very important purpose. A clearer picture has emerged concerning the care and treatment provided to both. The inconsistent and illogical approach to medical care between patients with a lower limb fracture with the same significant risk of VTE who are admitted to Hospital compared to those treated in the Emergency Department has been highlighted in the clearest of terms. The need for the Authorities to consider the inconsistency and develop appropriate and meaningful methods to assist health professionals in the Emergency Department to consider the risk of VTE,

to carry out a risk analysis, to consult with the family and patient and formulate an effective treatment plan is acknowledged by all who appeared at these inquests.

118. It should be observed these inquests have in large measure come about from concerns raised by Dr McBride, Pathologist. His professionalism and dedication to patient safety is acknowledged.

119. It is of course true that regardless of the appropriate medical treatment a patient may nevertheless succumb. Had the risk of VTE in the case of Mrs Channell and Mrs Ivanoska been considered, it is possible either or both may have declined the recommendation of prophylaxis. Had they accepted the recommendation and commenced the prophylaxis, it is possible they may nevertheless have suffered from VTE and a fatal embolism. But what is also clear is by the manner of their treatment, both were denied the potential benefit that might come from prophylaxis. There was on any view, a missed opportunity.

120. It is hoped both families will take some comfort in knowing recommendations will be made that may improve patient safety in the future.

121. The court extends its condolences to the family members of Mrs Channell and Mrs Ivanoska.

Formal findings

122. Jennifer Channell died on 18 April 2005 at 32 Pollock Crescent, Albion Park New South Wales from a Pulmonary Thromboembolism as a result of the development of Deep Vein Thrombosis following a fall and fracture of her lower leg.

123. Helen Ivanoska died on 18 July 2011 at 27 Sierra Drive Horsley, New South Wales from a Pulmonary Thromboembolism as a result of the development of Deep Vein Thrombosis following a fall and fracture of her knee.

Recommendations

To the Minister for NSW Health

That consideration be given to:

1.The creation of a Guideline/ Policy that addresses the need for patients with a lower leg fracture treated in the Emergency Department of a Hospital to be assessed and if appropriate, treated for the risk of Venous Thromboembolism (VTE).

2.The most appropriate manner by which a patient’s Body Mass Index, being a risk factor for VTE can be recorded as part of any risk assessment process.

3.Developing an education program to remind Medical staff that treatment should be designed to meet the clinical needs of a patient regardless of whether there are specific Policies or Guidelines in place.

Ian Guy
Deputy State Coroner
Wollongong

20 November 2012