

## CHAPTER SIX

### The Medical Evidence

- 6.1 Much of the expert medical evidence upon which I have drawn when making my decisions was given to the Inquiry by Dr John Grenville. In this Chapter, I propose to summarise the important features of his evidence.
- 6.2 Dr Grenville is a doctor of medicine, a diplomate of the Royal College of Obstetricians and Gynaecologists and a member of the Royal College of General Practitioners. He has been a principal in general practice since 1981; he was a full-time practitioner until 1992 and has worked on a half-time basis ever since. He has been secretary of the Derbyshire Local Medical Committee since 1984 and was a deputy police surgeon to Derby Constabulary from 1982 until 1985. He is a clinical complaints advisor to the Medical Defence Union, in which capacity he regularly advises general practitioners at committees and tribunals when complaints are made against them. He advised the police throughout their investigation into Shipman's activities and provided witness statements in connection with 97 deaths. He also gave evidence for the prosecution at the criminal trial and to the Coroner at some of the inquests.
- 6.3 Dr Grenville provided the Inquiry with a detailed report dealing with issues of general application to the deaths being investigated, and attended to give oral evidence (his 'generic evidence') about those issues on 22<sup>nd</sup> June 2001. In addition, he provided a report on cases potentially involving the double effect of opiates and a further report, dealing with eight deaths where the delayed effects of morphine or diamorphine had been considered. He has also provided to the Inquiry 108 individual reports in connection with 92 deaths and attended to give oral evidence relating to some of those deaths on 23<sup>rd</sup> and 24<sup>th</sup> July, on 12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup> and 19<sup>th</sup> November and on 7<sup>th</sup> December 2001. Most recently, he prepared a (joint) report on chlorpromazine and other drugs with similar potential effects.

### Cardiac Causes of Death

- 6.4 Shipman frequently certified cardiac causes of death, most often coronary thrombosis and left ventricular failure. Dr Grenville explained in simple terms the mechanisms giving rise to these conditions.

#### Myocardial Infarction

- 6.5 What is commonly known as a 'heart attack' is properly termed a myocardial infarction. The pumping action of the heart is produced by contractions of the muscles within the wall of the heart, which are co-ordinated by electrical activity within the cells of the heart wall. Oxygenated blood, which is necessary for the electrical and muscular activity of the heart wall, is supplied by means of blood vessels, known as the coronary arteries. These arteries are, according to Dr Grenville, particularly susceptible to the build-up of fatty deposits (known as atheroma) within them, producing a condition called coronary atherosclerosis.

- 6.6 As a coronary artery becomes occluded by atheroma, the blood flow through it decreases and the amount of oxygen getting to the heart wall beyond the occlusion also decreases. This can cause pain in the chest (and sometimes the upper abdomen, neck, left shoulder and arm) on exertion; this pain is known as angina. Angina is relieved by rest, which reduces the amount of oxygenated blood required by the heart, or by anti-anginal medication such as glyceryl trinitrate (GTN) spray or tablets. Many angina sufferers lead normal lives, suffering attacks of angina but knowing what to do in order to relieve the pain when they occur, and some live with angina for very long periods of time. Sometimes, the angina deteriorates and the patient suffers episodes of angina even at rest. The patient is then at high risk of suffering a heart attack at any time.
- 6.7 Not everyone who suffers from atherosclerosis – even to a significant degree – experiences angina. Furthermore, although most patients who suffer a myocardial infarction have suffered angina for some preceding period (often a long period), some patients suffer myocardial infarctions without any previous history of angina.
- 6.8 When the blood flow beyond an occlusion becomes critical to the point where there is insufficient oxygen to allow the heart to continue pumping, the muscle beyond the occlusion dies; this is known as a myocardial infarction. The cause of the infarction is occlusion of the coronary artery, which is known as a coronary thrombosis. Thus, the terms ‘coronary thrombosis’ and ‘myocardial infarction’ are used interchangeably – even by doctors.
- 6.9 If the section of heart muscle which dies is large enough, the heart is unable to continue pumping efficiently or, if the electrical activity of the heart is interfered with to the extent that control of the pumping mechanism is no longer co-ordinated (known as ventricular fibrillation), the heart stops pumping blood. Once this happens, the oxygen supply to the brain is compromised and unconsciousness follows within a minute or two, followed by death within five to ten minutes, unless treatment is successfully instituted.
- 6.10 According to Dr Grenville, myocardial infarction produces pain similar to angina, but usually much more severe, described as a crushing sensation or a tight band around the chest, often accompanied by sweating, shaking and vomiting. It cannot be relieved by rest or by anti-anginal medication. Short-term relief from pain can be achieved by the administration of a small dose of an opiate (see Chapter Seven), but the priority is to secure admission to hospital, preferably to a coronary care unit, for thrombolysis (the so-called ‘clot-busting’ treatment) and any other supportive treatment that may be necessary. Whilst thrombolysis is a treatment that has become available relatively recently (since the early 1990s), admission to hospital was the accepted way of managing an acute myocardial infarction even before that time. If the patient suffers a cardiorespiratory arrest, the appropriate treatment is resuscitation: see paragraphs 6.76 to 6.85.
- 6.11 The ease with which a myocardial infarction can be diagnosed is variable; sometimes the medical history and classic signs make it obvious to an attending doctor. At other times, where a patient has atypical pain, diagnosis can be more difficult. According to Dr Grenville, the doctor should look for other possible causes of the pain but should always err on the side of caution. If the symptoms *might* be those of a heart attack – that

is, if a heart attack is within the differential diagnoses – Dr Grenville said that, in his view, hospital was where the patient should be. When asked about the value of an electrocardiogram (ECG) in diagnosing myocardial infarction, Dr Grenville said that it would not necessarily be diagnostic, since a patient having an infarction can have a normal ECG at the time, even where an ECG taken later would confirm the occurrence of the heart attack. Moreover, if the patient is obviously having a heart attack at home, the doctor does not want to waste time linking him or her up to an ECG in order to confirm what is already evident.

- 6.12 Once in hospital, tests can be performed which are diagnostic of myocardial infarction. For example, heart muscle which has been damaged releases an enzyme into the bloodstream and this can be measured. If, over a period of about 48 hours, the level of the enzyme rises and then falls again, that is diagnostic of a myocardial infarction.

### **Heart Failure**

- 6.13 Dr Grenville went on to describe the various types of heart failure which can occur. Heart failure happens when the heart is beating, but not sufficiently strongly to maintain the normal circulation of blood through the rest of the body. This can be caused by a number of factors, including infarction of the heart muscle and hypertension, which is sustained long-term high blood pressure.
- 6.14 Dr Grenville explained that the ventricles are the main pumping chambers of the heart. The right ventricle pumps blood from the heart through the lungs; the blood then returns to the left side of the heart and the left ventricle pumps blood around the rest of the body. The deoxygenated blood comes back into the right side of the heart, completing the cycle. The left ventricle is larger, stronger and more prone to problems than the right ventricle.
- 6.15 Acute right ventricular failure is commonly caused by pulmonary embolus, which occurs when a blood clot moves from a vein in another part of the body, usually the leg, to the lungs, and blocks the blood circulation there; the right ventricle is then unable to pump blood through the lungs.
- 6.16 Acute left ventricular failure is often associated with myocardial infarction. This can occur when the damage to the muscle wall of the left ventricle is sufficient to impair the ventricle's ability to pump blood through the body, but not so severe as to stop it pumping altogether. Acute left ventricular failure can also occur as the end point of chronic heart failure (also known as congestive heart failure: see paragraphs 6.20 to 6.23), whereby the heart compensates for long-term problems which are being experienced in pumping blood through the heart, by developing hypertrophy or enlargement of the left ventricular wall. This enables the heart to maintain an adequate circulation around the body in the short term, but there comes a point when the compensatory mechanism is suddenly inadequate and an acute left ventricular failure ensues.
- 6.17 When acute left ventricular failure occurs, the blood from the left ventricle is not pumped out into the rest of the body, but the right ventricle continues to pump blood into the left side of the heart, thus causing the lungs to become congested and resulting in rapid

accumulation of blood in the small blood vessels of the lungs. The pressure in these small blood vessels increases and they leak fluids into the air spaces of the lungs, causing sudden, very severe breathlessness. Air cannot be moved into the air spaces of the lungs, because they are full of fluid; as a consequence, blood no longer circulates, so death ensues, due to lack of oxygenated blood to the vital organs.

- 6.18 The severe breathlessness of acute left ventricular failure is usually accompanied by the appearance of foam – often bloodstained, producing a frothy, pale pinkish fluid – at the mouth and nose. The mechanism of death in acute left ventricular failure is analogous to drowning or suffocation, and the patient is usually extremely distressed. He or she will often try to get more air to relieve the feeling of suffocation, by loosening clothing or opening doors and windows. Dr Grenville said that he had seen patients with acute left ventricular failure ‘a couple of times’ in general practice and no more than six times in hospital, and he confirmed that such patients became very distressed. The condition is not, however, characterised by pain.
- 6.19 Despite the absence of pain, acute left ventricular failure can be treated by slow intravenous injection of morphine or diamorphine, in order to reduce the patient's distress and panic, and thus reduce the production of adrenaline and other hormones that would otherwise be released into the bloodstream and make the situation worse. Opiates also have a vasodilatory effect, which might reduce the pooling of blood in the lungs. In addition, large doses of a diuretic should be given intravenously, thus causing fluid to be removed from the bloodstream by the kidneys. This reduces the amount of fluid in circulation, which in turn reduces the amount of work which the heart has to do. Dr Grenville observed that, in a case of acute left ventricular failure, he would probably give the diuretic before the opiate and, if not then, immediately afterwards. Although acute left ventricular failure is a rare condition, he carries a diuretic with him when on duty, for the purpose of treating the condition if he encounters it. Acute left ventricular failure can cause death within two or three minutes of onset or, if the failure is less severe, over a period of minutes to an hour or so.
- 6.20 Reference has already been made to congestive heart failure and its cause: see paragraph 6.16 above. If congestive heart failure is present, then, because of deficiencies in the heart's pumping mechanism, blood collects in various organs of the body, usually the liver and lungs, where there are a lot of blood vessels. The organs become congested and increase in size; there is often a decrease in the organs' efficiency and, in the case of the lungs, fluid in the lungs can be heard by listening to the chest, where crepitations (soft crackling sounds) will be audible. Another area which becomes congested is the legs, which develop oedema and become large and swollen. There are other causes of oedema of the legs, usually resulting from problems with venous circulation, but the symptom is commonly associated with congestive heart failure. In severe cases of heart failure, fluid can leak through the skin of the legs, sometimes causing ulceration, with the attendant risk of septicaemia. Treatment for congestive heart failure includes diuretics. The administration of an opiate would not usually be appropriate treatment for congestive heart failure.

- 6.21 Other signs that would point to a diagnosis of congestive heart failure are gradually increasing shortness of breath (although other conditions, such as emphysema or asthma, may also cause this) and an enlarged liver (caused by blood backing up there) without any obvious cause. There may also be an irregularity of the heart rate. Dr Grenville referred to a particularly common irregularity, atrial fibrillation, where the heart beats irregularly but not sufficiently to keep going as effectively as it should. Such an irregularity can be indicative of congestive heart failure. Sometimes, a patient with severe congestive heart failure will develop a particular sort of sallow appearance, and cyanosis (a bluish discolouration of the skin resulting from an inadequate amount of oxygen in the blood). Congestive heart failure carries a poor prognosis, even with treatment, and Dr Grenville described how the condition can deteriorate so as to lead to death, which will usually be by way of acute left ventricular failure. Because congestive heart failure is frequently associated with coronary atherosclerosis, patients suffering from congestive heart failure sometimes die of a myocardial infarction.
- 6.22 When looking for signs of congestive heart failure, a doctor would usually listen to a patient's heart sounds and look for an increase in jugular venous pressure (JVP); the jugular vein is a vein in the neck, close to the surface of the skin, and situated just above the heart; it drains into the right atrium of the heart. If the pressure of blood in the heart is raised, the blood in the jugular vein backs up and can be seen and measured by the number of centimetres that the column of blood can be sustained above the sternal notch in the middle of the chest. Any increase in JVP above zero is an indicator of congestive heart failure.
- 6.23 Dr Grenville has observed, when giving evidence about some of the individual deaths, that Shipman tended to over-diagnose congestive heart failure, usually on the basis of the presence of ankle oedema, which he appeared to treat as virtually diagnostic of the condition. Once he had diagnosed congestive heart failure, he continued to treat the patient for it on an indefinite basis, often not reducing the medication prescribed, even when the condition seemed well controlled. When giving evidence about the death of Mr Samuel Mills, Dr Grenville said:

**'...once he made (the) diagnosis, he was very keen to review patients, either himself or Sister Morgan. On about a three monthly basis, he would do a lot of blood tests, he would record the signs and symptoms and occasionally he would change the treatment upwards, but he never or rarely seemed to take a step-down approach to see whether they could manage now without their treatment. It is my experience that he probably diagnosed congestive heart failure more frequently than most of my colleagues'.**

## **Cerebrovascular Accident**

- 6.24 Dr. Grenville described three types of cerebrovascular accident – occlusive and haemorrhagic intra-cerebral events and subarachnoid haemorrhages.
- 6.25 An occlusive cerebrovascular accident, or 'stroke', is analogous to a myocardial infarction. The intra-cerebral arteries become occluded by atheroma and, eventually,

there comes a point when the amount of oxygenated blood flowing through these arteries to the brain beyond the occlusion becomes insufficient to sustain the brain cells. The cells die over a period of time, and the long-term effects of this depend upon the volume and part of the brain affected. Brain cell death due to an occlusive stroke usually occurs over a number of hours, and symptoms (for example paralysis of the limbs, failures of speech and/or swallowing, visual field disturbances and unconsciousness leading to death) may appear slowly and serially. It is, in essence, a progressive condition, although there may be minor fluctuations in the rate of progress of the symptoms. When giving evidence in the case of Mrs Charlotte Bennison, Dr Grenville said:

**‘ A stroke is a process rather than an event and..we talk about an evolving stroke. The symptoms start, the process will continue for a period and sometimes it is a short period, sometimes it is a long period.**

**The degree of damage done to the part of the brain affected will vary over time. We are usually talking a period of a day or two here’.**

- 6.26 According to Dr Grenville, occlusive strokes do not usually cause sudden death, and may not lead to death at all. When death does occur after an occlusive cerebrovascular accident, it is usually due to medium or long-term complications, such as bronchopneumonia, or septicaemia, following the development of pressure sores.
- 6.27 A haemorrhagic intra-cerebral stroke is caused by a sudden rupture of a blood vessel within the substance of the brain, usually secondary to atheroma. As a result of the rupture, brain cells are killed rapidly. The symptoms produced by this type of stroke depend on the size of the vessel ruptured, and its position. This type of cerebrovascular accident can cause sudden death when it occurs within the brain stem and, in that event, the patient may suddenly lapse into unconsciousness without warning, and respiration and heartbeat may cease within a few minutes. If the stroke occurs within the cortex, death may not follow, or not immediately, and the course of symptoms and signs may resemble those of an occlusive stroke. Older people, who may well have a degree of atheroma, are particularly likely to suffer an occlusive or haemorrhagic intra-cerebral stroke.
- 6.28 A subarachnoid haemorrhage occurs as a result of a rupture of a blood vessel inside the skull, but outside the substance of the brain. Blood is forced into the narrow space between the skull and the brain, and pressure quickly builds up and causes a sudden, severe headache. The effects of a subarachnoid haemorrhage depend again upon the size of the vessel which has ruptured and the position of the vessel within the skull. A common site of rupture is within a group of vessels known as the Circle of Willis, and a rupture there often leads to sudden death due to a build-up of pressure on the brain stem, similar to that induced by brain stem haemorrhage. A subarachnoid haemorrhage is usually caused by congenital weakness of the blood vessel which ruptures.
- 6.29 Patients suffering a haemorrhagic intra-cerebral stroke in the brain stem, or a subarachnoid haemorrhage, may lapse suddenly into unconsciousness and die, but such patients represent a very small proportion of all patients suffering a stroke. The

majority of stroke patients suffer a cerebrovascular accident of the occlusive type, or an intra-cerebral bleed other than in the brain stem. Such patients complain of neurological symptoms, such as weakness or altered sensation, or clumsiness in one or more limbs, difficulties with speaking or with understanding what is said to them, difficulty in swallowing and/or visual problems. Some patients become confused or partially conscious, and cannot explain their symptoms.

- 6.30 As to diagnosis, in the absence of clearly localised neurological symptoms, which may make a diagnosis of a cerebrovascular accident straightforward, the doctor should be looking for signs of neurological damage; to this end, he or she should check the relative strength of the muscle groups, test sensation in the limbs and reflexes (including pupillary reflexes of the eye and the plantar reflexes of the feet) and seek patterns which might suggest that there has been a sudden or fairly sudden onset of neurological damage, indicative of a stroke.
- 6.31 Dr Grenville said that, if a subarachnoid haemorrhage is suspected, a patient should immediately be admitted to hospital, where neurosurgical intervention may be successful in evacuating the blood clots within the brain and the skull, and in securing the blood vessel that has ruptured.
- 6.32 By contrast, little active treatment is currently available for occlusive and haemorrhagic strokes, and management usually consists of observation and supportive treatment to maintain as much function as possible. More emphasis may be placed on this latter aim in the future, given present trends in medical practice. In the past, however, the strategy has been to assess whether a stroke patient can be provided with adequate support at home and, if not, and if nursing care is required, to decide where he or she would be best cared for. The administration of opiates would not be appropriate where a stroke is suspected, or has been diagnosed, unless there were some other condition present which would warrant it.
- 6.33 Dr Grenville suggested that, if he had a patient whom he suspected of suffering from an evolving stroke, his approach would be as follows:
- ‘ I think I would suggest to the patient that, ‘There is certainly a possibility that you are having a stroke. It is happening to you; it is a process; it may get better; it may get worse. If it gets worse you could become quite seriously disabled. It may not be safe for you to be on your own. You may not wish to be on your own. We should be thinking about hospital admission. On the other hand, is there someone who can be with you, who can look after you, who can let me know if things deteriorate?’.**
- 6.34 He went on to point out that each patient has to be dealt with as a person in his or her own circumstances, who needs to be guided by the doctor, but who is ultimately an autonomous person who can make his or her own decision on the information which has been given. However, a patient in this position is at high risk of dying in the near future and should not be left alone without care and supervision.

- 6.35 If a general practitioner is confronted by a patient who is unconscious but not in cardiac arrest, Dr Grenville said that the doctor should consider the possibility that the patient has suffered a cerebrovascular accident. Other common causes of sudden death (such as myocardial infarction, pulmonary embolism and ruptured aortic aneurysm) tend to produce unconsciousness through the mechanism of cardiac arrest, so can probably be excluded in the absence of such an arrest. There are other mechanisms, which can cause unconsciousness without cardiac arrest, but the doctor should be looking for a previous history of atheromatous disease (which would include a history of angina, transient ischaemic attack or peripheral vascular disease) or of hypertension. Whilst these may be diagnostic pointers, they would not be conclusive in diagnosing a cerebrovascular accident.
- 6.36 Dr Grenville emphasised that the type of cerebrovascular accident which typically causes sudden death is rare, compared with the other types of stroke which do not usually result in sudden death. By contrast, there are many examples, among the cases which the Inquiry has investigated, where Shipman has purported to observe neurological changes characteristic of the occlusive type of stroke in a conscious patient, who is then said to have died suddenly, sometimes within minutes or seconds. When giving evidence about the death of Mrs Anne Ralphs, Dr Grenville observed:
- ‘ If she had suffered a cortical stroke which was affecting one side of her body, then she could have become progressively weaker on that side of the body. She could then have slipped gently into unconsciousness at which point I think admission would be mandatory to arrange at least nursing care of the unconscious patient. This would have been a slow process over a period of, I would have thought, at least 20 to 25 minutes, more likely to be over a period of several hours. The description..of sudden non-responsiveness and pupils dilated, sudden death does not really fit with a cortical stroke. This is more a description of a brain-stem stroke’.**
- 6.37 A patient who suffers from persistent hypertension is at an increased risk of stroke; it appears that hypertension brings about changes to the wall of the arterial side of the blood vessels, and thus causes or encourages the development of atheroma. Furthermore, if a blood vessel is already weakened, then it is more likely to rupture if pressure in the vessel is higher. High blood pressure increases the risk of myocardial infarction also, but treatment, especially of the elderly, is mainly directed at the risk of stroke.
- 6.38 Blood pressure is generally measured over a period of several months. Dr Grenville’s view is that, in order to confirm that high readings are not unrepresentative of the general level of blood pressure in the patient, and in the absence of exceptionally high readings, the doctor should have at least three readings several weeks apart which are sustainably and significantly high before making a firm diagnosis of hypertension. Dr Grenville noted, when giving evidence about the death of Mrs Charlotte Bennison, that Shipman measured his patients’ blood pressure fairly frequently and, if it was found to be raised, he would treat it and ensure that the patient was monitored by Sister



Morgan, who held regular hypertension clinics. Shipman was less consistent in his prescription of aspirin for those at a high risk of suffering a stroke.

- 6.39 It is quite common to see, in the medical records of Shipman's patients, the abbreviations 'TIA', for 'transient ischaemic attack', or 'TCI', for 'transient cerebral ischaemia'. According to Dr Grenville, a transient ischaemic attack is commonly known as a 'mini-stroke'. A patient will develop symptoms suggestive of a stroke, but will make a full recovery within 24 hours, often much more quickly. The mechanism is thought to be short-lasting occlusion of an intra-cerebral blood vessel, by way of micro-embolism, i.e. a patch of atheroma on a blood vessel which becomes dislodged, reaches a blood vessel of too small a calibre to allow it through, causes an occlusion, then breaks up, whereupon the occlusion disappears.
- 6.40 So, the brain cells downstream of the transient occlusion lose their oxygen supply temporarily, but are able to recover later, when the occlusion disappears. It is not possible to diagnose a transient ischaemic attack with absolute certainty until after the 24 hour period is up because, until then, an alternative diagnosis would be an evolving stroke. Once the symptoms are present, the patient needs to be observed, and the patients and relatives should be told what to look out for. The advice given to a patient would initially be the same as that given to someone thought to be experiencing an evolving stroke: see paragraph 6.33.
- 6.41 Dr Grenville told the Inquiry that a transient ischaemic attack is a major risk factor for developing a later completed stroke. There is no particular temporal association; the risk will continue to exist even after the transient incident has resolved.

## **Respiratory Conditions Causing Death**

- 6.42 Shipman frequently certified bronchopneumonia as a cause of death and, less commonly, lobar pneumonia, respiratory failure, chronic bronchitis and emphysema, chronic obstructive airways or pulmonary disease and other respiratory conditions.
- 6.43 Dr Grenville explained that pneumonia occurs when the air pockets (alveoli) which form the tissue of the lungs become infected and inflamed. When both the alveoli and the main airways of the lungs (the bronchi) are affected, the condition is known as bronchopneumonia. If just the bronchi are infected, the condition is called bronchitis.
- 6.44 Pneumonia usually arises in one of the five lobes of the lungs, but can spread from one to another. A patient with pneumonia may become rapidly ill over a period of a few hours – certainly not a few minutes – and usually develops a high temperature, alternate feelings of hot and cold, becomes shivery and shaky, and develops a cough, often productive of sputum which may be bloodstained. Sometimes, there is also pleuritic pain which occurs sharply on one side of the chest when the patient is breathing in deeply or coughing.
- 6.45 Antibiotics are usually effective in treating pneumonia, provided that it is diagnosed early. However, the condition can be dangerous, particularly in patients who are frail, due to pre-existing illness or extreme old age. Diagnosis is usually made on the basis of a history of an ill patient who has developed noisy, difficult, rattly breathing, and where a

doctor can hear abnormal breath sounds throughout the chest on using a stethoscope. Even where the condition is caught early and treated with antibiotics, severe cases may need admission to hospital for intravenous antibiotics and, sometimes, ventilation.

- 6.46 Dr Grenville explained that, if untreated, the patient's condition usually fluctuates to some extent, but is gradually progressive. There may be sudden resolution of the condition, or the patient may simply become exhausted and lapse into coma, and death may ensue. Dr Grenville said that this latter outcome should be extremely rare in modern medical practice with antibiotics. Pneumonia is, however, a common cause of death amongst patients suffering from terminal diseases and in elderly patients, especially during influenza outbreaks. Patients who are susceptible to death from pneumonia or bronchopneumonia are usually immobile and very weak, and do not have the strength to cough. Once an infection starts in the lungs it can spread rapidly and extensively into the alveoli and the bronchi. The patient's breathing becomes noisy and rattly, and there may be shortness of breath, although the patient may be so immobile that this is not evident.
- 6.47 In these circumstances, the condition can be treated by antibiotics administered orally or intravenously, and chest physiotherapy can assist in removing the infected secretions but, since such patients are already debilitated, the outlook is often very poor. The condition can also occur in patients who are unconscious, such as those who have had a stroke. Morphine or diamorphine should not be given for the treatment of the pneumonia itself; it would be dangerous to do so, because the patient's respiration will already be depressed. However, the patient may be suffering from a condition causing severe pain, and it may, therefore, be necessary to administer morphine or diamorphine to combat that pain. In such circumstances, it is important to balance the need to relieve pain against the unwanted effect of respiratory depression, which is more significant in a patient suffering from pneumonia than in one who is not. This balancing exercise is part of the problem of 'double effect', which is discussed further in Chapter Seven.
- 6.48 Dr Grenville told the Inquiry that patients dying of bronchopneumonia are usually weak and bed bound; they are obviously ill and become exhausted, often lapsing into unconsciousness; their respiration becomes increasingly rattly. Eventually, the respiratory effort decreases and their breathing becomes shallower until it ceases altogether. Frequently, the patient manifests Cheyne-Stokes respiration, whereby the breathing becomes shallow and appears to cease altogether and then, after a gap of seconds or minutes, respiration returns, shallowly at first and then deeper and stronger. Breathing may become quite rasping again and stertorous (heavy), before it again begins to tail off and become shallower and shallower and appears to stop again. This cycle of stopping and starting may be repeated many times until, eventually, the breathing does not restart, and the patient dies.
- 6.49 Dr Grenville observed that the fact that a patient was seriously unwell with pneumonia would be evident to a friend or relative who saw the patient, say, a few hours before his or her death.
- 6.50 Shipman sometimes certified the cause of death as respiratory failure (which merely means cessation of breathing) due to a variety of conditions, including chronic

bronchitis and emphysema. With emphysema, the lung tissue has been damaged and this results in reduced oxygen transfer into the blood. In order to secure sufficient oxygen for transfer into the bloodstream, the patient has to work harder and therefore becomes short of breath, particularly on exertion. Chronic bronchitis is characterised by a productive cough, which persists for long periods. Emphysema and chronic bronchitis are different conditions but, since they share common causes (for example smoking, exposure to certain dusts and fumes), they are often found together in the same person.

6.51 People with chronic bronchitis and emphysema begin to become more breathless on less exertion. In time, this becomes quite noticeable in that they find it difficult or even impossible to walk up slight hills, or even on the flat, without regular stops to catch their breath. As the disease becomes more serious, the patient finds it increasingly difficult to walk even a few metres without stopping. At that point, he or she may need a wheelchair to get out or may even become housebound. In very severe cases, the slightest exertion – such as getting up or even speaking – becomes too much. During this process, the amount of oxygen getting into the bloodstream becomes less and the patient can become chronically cyanosed with blue-tinged extremities and eventually blue lips and nose. Some patients manage to keep themselves oxygenated by breathing harder and they remain pink. The patient's condition can sometimes be improved by oxygen therapy.

6.52 Death which is associated with chronic bronchitis and emphysema usually occurs as a result of an acute infection (such as pneumonia or bronchopneumonia), although a few patients with very severe bronchitis and emphysema develop chronic respiratory failure, whereby their respiratory drive decreases over a period of time. If an acute complication supervenes, deterioration leading to death is likely to occur over a period of several days. The patient will become more short of breath than usual, will start to cough, will probably complain of pleuritic pain, will develop a high temperature and will be obviously ill.

6.53 When giving evidence about the death of Mrs Beatrice Toft, Dr Grenville described the course to be expected in the few patients with very severe chronic bronchitis and emphysema who develop chronic respiratory failure:

**' If she had died of respiratory failure, I would have expected her to be..bed-bound or chair-bound, significantly ill and probably needing nursing care by this time because she would not have been able to care for herself. Probably to become increasingly short of breath and then probably to have lapsed into unconsciousness because of hypoxia. Possibly to have exhibited Cheyne-Stokes respiration..It is not something I see frequently or, indeed, at all; it is a theoretical possibility. People who are this ill very often need to be in hospital anyway, to receive the care that needs to be given to them'.**

6.54 Dr Grenville went on to emphasise that it is more common with cases of severe bronchitis and emphysema for there to be a long, slow, gradual deterioration, ending with an acute event which may be respiratory or may be cardiac or may even be a stroke.

## Cancer

6.55 A patient dying of cancer usually declines gradually, stops going out, requires help with shopping and other household chores and finally with personal care. He or she becomes more and more ill, often requiring increasing amounts of analgesia and eventually taking to bed. The usual cause of death is exhaustion or coma. A sudden death is not typical, although it can occur, for example, as a result of a heart attack or stroke or as a result of secondary tumours (metastases) in the brain or subluxation of a cervical vertebra, as appears to have occurred in the case of Mrs Mary Ogden. In general, however, deterioration to the point of death is a slow process. When giving evidence about the death of Mr Harold Eddleston, Dr Grenville said:

**‘ ..one has to say, what is the mechanism of death, why would carcinoma of the lung cause him to be found dead, presumably fairly rapidly, sitting upright in a chair? It just does not fit’.**

6.56 In the case of Mr Samuel Mills, Dr Grenville said:

**‘ Even in someone who declines extremely rapidly in this sort of situation with a high cancer load, we are talking about a matter of a minimum of several days and possibly a week or two, even if it is rapid’.**

6.57 Shipman frequently diagnosed death as having been caused by carcinomatosis, that is widespread cancer throughout the body, which is often associated with cachexia, general wasting and bodily decline caused by the disease. It has not been uncommon to find that, whilst the patient had indeed suffered from cancer in one or more parts of the body, the disease has not been anything like so widespread as to justify Shipman’s description of it as ‘ carcinomatosis’; Mr Mills was an example of such a patient.

## The Presence of a General Practitioner at or shortly before a Patient’s Death

6.58 Dr Grenville described the circumstances in which a general practitioner may be present at the very time when his or her patient dies. First, this might occur if the doctor has received an emergency call to attend a patient who is, for example, suffering a heart attack. The usual procedure would be that, on arrival, the general practitioner would start treatment, arrange the patient’s admission to hospital and call an ambulance. If the patient collapsed, the doctor would undertake cardiopulmonary resuscitation; if that resuscitation were not successful, then the patient might die in the doctor’s presence before the arrival of the ambulance. Dr Grenville told the Inquiry that this had happened to him on two occasions in his 20 year career in general practice.

6.59 Another situation in which a general practitioner might be present at the death of a patient could occur when the patient is known to be terminally ill and the doctor is visiting frequently, possibly daily or even more often. Death does sometimes happen during the course of such a visit. According to Dr Grenville, this is not common and only happened to him about once every two and a half years, when he was in full-time practice. Dr Grenville’s practice does not operate personal patient lists, but each

partner has an official average list size of 1380. That figure is significantly less than the size of Shipman's patient list (2931 in 1992; 3046 by 1998) so that it can be inferred that Shipman may have been expected to experience this type of occurrence more frequently, perhaps as often as once a year.

- 6.60 Shipman, however, claimed to be present at the deaths of his patients with far greater frequency than this. During the period of six months preceding the police investigation in March 1998, the information recorded by Shipman on cremation forms and in patients' medical records disclosed that he had been present at the deaths of seven patients out of the 31 patients whose deaths he had certified during that time. There were no cases of terminal illness amongst those seven patients; they all died sudden deaths, the cause of which was certified as cerebrovascular accident, coronary thrombosis or left ventricular failure.
- 6.61 In addition, Shipman frequently claimed to have visited patients in their homes a short time before their deaths. Of the 31 patients mentioned above (excluding those at whose deaths he had been present), he claimed to have visited eight within four hours or less before their deaths. Other years show a similar pattern. Of the 15 patients whose deaths at home he certified in 1989, for example, he admitted having visited eight within a period of two hours or less before their deaths; a ninth patient died in his presence at the Donneybrook Surgery. In 1993, the figures for a visit within the same period were 12 out of 28; in the case of six of those deaths, he admitted being present at the time of death.
- 6.62 When giving evidence about the death of Mrs Edna Llewellyn, Dr Grenville observed that the coincidence of a doctor being called to attend a patient suffering an angina attack and that patient then suffering a heart attack virtually as the doctor arrived (as Shipman claimed had happened in that case) was such that one might expect it to happen once in a professional career. He made a similar observation in the case of Mrs Marjorie Waller, where Shipman claimed that she had died within a very short time of a visit by him. Yet Shipman would have us believe that this was happening to him – purely by chance – on a regular basis.
- 6.63 When death does occur in a doctor's presence, there is, Dr Grenville said, a clear need for a most detailed note. Apart from the general obligation to make such a note and the need to remember details which may have to be recorded on the MCCD and cremation Form B, or reported to the coroner, Dr Grenville observed:
- ' I would also have in mind the fact that anger is a normal part of the bereavement reaction and that it is unusual – so unusual – for a patient to die in my presence that the bereaved relatives may, at one stage or another in their bereavement reaction, seek to blame me and I would want to be able to show that I had acted reasonably and done everything that I could be expected to do'.**
- 6.64 By contrast, Shipman's notes were brief, sometimes non-existent. In the case of Mrs Kathleen Wagstaff, for example, at whose death he admitted having been present, his computerised record reads:

**' call 1500 arrive 1515 def ct (i.e. definite coronary thrombosis) collapse died 1520'.**

In the case of Mrs Irene Chapman, where he claimed that both he and his wife had been present at her death, he made no record at all of his visit (his second of the day), merely recording the fact and cause of her death on the outside of the envelope containing her medical records.

### **The Deceased's Position in Death**

6.65 Dr Grenville told the Inquiry that, in his experience, it is extremely uncommon for a deceased person to be found sitting in a chair, head on one side, appearing peaceful and asleep, as so many of Shipman's patients were found. He went on to say:

**' ..death being a process rather than an instantaneous event, the patient is usually able to do something just before death, even if it is only to clutch the chest if it is painful, or to try to get up. That of itself, if then death supervenes and the muscle tension disappears, that is likely to cause the patient to slump to one side or to fall from the chair or to slump forwards. In general, I would say that to be found dead, sitting up in a chair, relatively unsupported, would require the patient to have become unconscious in that state, for death to have supervened without anything happening to cause the patient to move.**

**Once movement has started to occur, the situation becomes physically unstable. The patient is likely to fall or to slump. It is only when the patient is sitting in a balanced, stable state and the tension in the muscle gradually disappears that they are likely to remain in that state, sitting peacefully, looking as if they are asleep'.**

6.66 In the course of his evidence, Dr Grenville related the views set out above to some of the causes of death commonly certified by Shipman.

6.67 Dr Grenville told the Inquiry that a patient suffering a fatal myocardial infarction is likely to have an interval of seconds, or one or two minutes, when he or she will be aware of impending disaster. Death is not an instantaneous process, whereby a person is active and alive one instant and is dead the next. The patient may be in severe pain and having difficulty breathing, but is likely to retain a certain amount of consciousness, enough perhaps to make an attempt to get help, to look for or reach for the telephone, to get up and go to the door with a view to shouting for help, or possibly to lie down. Dr Grenville said:

**' ...I do not think that sitting in a chair looking absolutely peaceful is consistent with death from a heart attack'.**

6.68 When giving evidence about the death of Mrs Winifred Arrowsmith, Dr Grenville said:

**' The mechanism of sudden death in coronary thrombosis is cardiac arrhythmia, usually ventricular fibrillation. The patient realises that something awful is happening. They either have the very severe pain**

**or, if the disrrhythmia occurs before the pain is established, they still feel that something is going wrong because their circulation ceases. They have this feeling of doom, they may feel dizzy, they may have the pain. They will try to seek help and most patients, in my experience, in this situation are found somewhere between the chair and the telephone or the chair and the bed or the chair and the door or the chair and the alarm cord or whatever. Most of them have attempted to do something about the fact that they feel that something dreadful is going wrong’.**

6.69 Dr Grenville went on to say that he is aware of occasions when patients have suffered catastrophic heart attacks while deeply asleep in bed; he has seen such deaths, maybe once every few years, in his own practice. He has never seen a patient who has died of a catastrophic heart attack while asleep in a chair. Dr Grenville did not entirely exclude the possibility that this might occur, but he said that it would require the patient to be very deeply asleep. In order to be able to sleep so deeply, he or she would have to be in an armchair with wings which supported the patient and prevented his or her head from slumping forwards. When talking about the position in which many of Shipman’s patients were found, Dr Grenville said:

**‘ ...I think the description that we have heard of patients sitting upright in a chair comfortably with their arms on the arm of the chair, head unsupported and perhaps just slightly to one side, it does not seem to ring true to me’.**

6.70 When acute left ventricular failure occurs, death can happen within two or three minutes of onset, although, in less severe cases, the fluid build-up in the lungs may occur rather more slowly. The patient is distressed, probably panic-stricken. The bloodstained foam is often evident. There may have been an attempt to loosen clothing, get to a window or relieve discomfort by sitting up or standing. Dr Grenville observed:

**‘ The idea of someone who has died of acute left ventricular failure simply sitting, looking entirely peaceful, is just not credible’.**

6.71 Even with death from chronic congestive heart failure, such a death would not be typical. Dr Grenville said, when giving evidence about the death of Mrs Fanny Nichols:

**‘ ...if she died of her congestive heart failure, there would have been some sort of agonal event; in other words, the heart might have decompensated and she might have gone into acute left ventricular failure on top of her existing congestive heart failure, or she might have had a heart attack (a myocardial infarction), due to the underlying ischaemic heart disease...neither of these would be consistent with finding her sitting peacefully in her chair’.**

However, when talking of the death of Mrs Olive Heginbotham, Dr Grenville said that he could not rule out the possibility that someone in the last stages of heart failure might prefer to sit down and might, therefore, be found in a sitting position.

- 6.72 Dr Grenville went on to describe the manner of death from a brain stem haemorrhage, which can cause loss of consciousness and death rapidly and without warning. Even then, Dr Grenville said there may be a second or two when the patient realises that all is not well, maybe enough time for a patient who is sitting down to make a convulsive movement or jerk forward. Death from an occlusive stroke, or a haemorrhagic stroke affecting parts of the brain other than the brain stem, is again, in his view, inconsistent with death in the manner and position typical of Shipman's patients. Dr Grenville observed:

**..almost having the appearance of being just switched off like a light switch while sitting quietly does not really accord with my understanding of mechanisms of the process of death'.**

- 6.73 Death from occlusive stroke is likely to occur after a period of increasing weakness, followed by a gradual slip into unconsciousness. When giving evidence about the death of Mrs Charlotte Bennison, Dr Grenville observed:

**' The sort of stroke that he (*Shipman*) is describing was a weakness in the right arm and the right leg, is a stroke occurring in the cerebro cortex of the left side of the brain, that is the higher part of the brain. That can certainly spread. The effects of it can spread and what tends to happen is that the paralysis tends to get more dense. The arm and leg become increasingly weak to the extent that they may not be able to be used at all.**

**Very often in this situation, the part of the brain controlling speech is affected and the patient becomes dysphasic, unable to get out the words that they know they want to say; they may well then slip into unconsciousness but it will not be a collapse into unconsciousness, it will be an increasing weakness and they will realise that something is going wrong and they may try to seek help and they may at least try to go to bed or something like that. The sort of stroke where someone might be found looking peaceful..is a brain stem haemorrhage where a catastrophic event happens very suddenly'.**

Dr Grenville said that the possibility of a person suffering an occlusive stroke, followed immediately by the type of stroke which would cause a sudden death, is very remote.

- 6.74 As to death from bronchopneumonia or lobar pneumonia, this is not, in Dr Grenville's view, consistent with finding a deceased person in a chair, looking peaceful and appearing to be asleep. Dr Grenville explained that this was because:

**' ..we are dealing with patients who are very often ill from other causes, they will be in bed, they will be being cared for, we know their history, they are ill patients. Such patients do not sit up in their chairs, in their ordinary outdoor clothes, and suddenly are found dead. That does not happen'.**

- 6.75 By contrast, the appearance of a deceased person sitting in a chair and appearing peacefully asleep would be entirely consistent with that person having become drowsy,



then unconscious, and finally having slipped into death as a result of the administration of a lethal dose of opiates.

## **The Collapsed Patient**

- 6.76 When a general practitioner is called to a patient who has collapsed, the first priority, according to Dr Grenville, is to check whether the patient is breathing and feel for a pulse. If pulse and respiration are present, the patient should be placed in the recovery position, so as to ensure that the airway is clear, and the doctor should then turn his or her attention to diagnosing and managing the condition which has caused the collapse.
- 6.77 If, on examination, there is no pulse or respiration, the doctor should assess the situation, in order to decide whether resuscitation is appropriate or not. Resuscitation would not be appropriate, for example, where there is obvious major trauma incompatible with life, or where the doctor can establish that pulse and respiration have been absent for more than a matter of minutes. This latter situation might occur if there were witnesses who gave a history of absence of pulse and respiration for a significant period, or if the doctor found that the patient was cold (other than in death by drowning or hypothermia), or if the doctor observed that rigor mortis had set in, or post-mortem lividity was present. All these would be indicators that respiration and pulse had been absent for so long that irreversible brain damage would have occurred, and the patient must be dead. If, however, it appears that the collapse is very recent, i.e. within the past three or four minutes, then Dr Grenville said that resuscitation should, in general terms, be attempted.
- 6.78 An exception to that general rule might arise in the case of an elderly person who was expected to die shortly in any event; then, Dr Grenville said that resuscitation may not be appropriate. However, a decision not to resuscitate on the grounds of age alone would not, in his view, be acceptable, and he told the Inquiry that he did not believe that his own policy towards the resuscitation of elderly people had changed over his 20 years in practice, save only that, with the improvement of medical technology, he has, if anything, become more likely to attempt resuscitation because there is a greater chance of ultimate success in saving the patient.
- 6.79 If a patient collapses in a general practitioner's presence, then the doctor will have the advantage of the knowledge gained by his previous observation of – and, possibly, communication with – the patient, and may well have some idea of the cause of the collapse. In the event that an examination reveals that pulse and respiration are absent, Dr Grenville said that cardiopulmonary resuscitation should always be attempted, unless the doctor is aware that the patient would not wish this to occur, either through knowledge of an advance directive signed by the patient, or from previous conversation with the patient. This statement contrasts with Shipman's practices; although he frequently claimed to be present when a patient collapsed, it was extremely rare for him to attempt resuscitation. There were occasions when he claimed to have attempted to resuscitate in circumstances where he had plainly not done so, but he did not make any such claim in every case, frequently telling the relatives later that resuscitation would have been inappropriate for one reason or another.

- 6.80 Dr Grenville explained that resuscitation, when attempted, is directed at keeping oxygenated blood flowing to the brain, and thus keeping the patient alive until further definitive treatment can be given. It involves external cardiac massage to keep some blood flowing through the vascular system, together with artificial respiration to ensure that the blood that is being kept flowing is oxygenated. Cardiopulmonary resuscitation itself is not likely to cause spontaneous restoration of the heartbeat and respiration; it is a supportive treatment until definitive treatment is available.
- 6.81 According to Dr Grenville, it is extremely difficult and tiring for one person (even a trained person such as a doctor) to work on the circulation and the airway at the same time. If there is someone present who, albeit untrained, is physically fit and willing to help, he or she can be shown how to perform external cardiac massage whilst the trained person concentrates on the airway. Such an arrangement has a greater chance of success than if the single person continues to administer resuscitation alone. If three people participate in the resuscitation process, the chances of its succeeding are again increased. In order for external cardiac massage to be effective, the patient needs to be lying on a hard surface. This is because the aim is to compress the heart between the anterior and posterior chest walls, and, if the patient is on a soft surface, pressure just pushes his or her body into the soft surface and the heart is not compressed. An item of clothing with buttons down the front would have to be removed in order for massage to be carried out and clothing would have to be disturbed in order to check that the patient was in cardiac arrest in the first place. These requirements are relevant when considering Shipman's claims that he attempted resuscitation on patients who were found lying on a bed or sitting in a chair with their clothing completely undisturbed.
- 6.82 If a general practitioner is confronted by a patient who has collapsed in his or her home, the doctor should attempt to get someone else to alert the emergency services, whilst he or she embarks upon resuscitation. If there is someone else in the house, or nearby, then that person can be given the task. Otherwise, the doctor may have to attempt a few cycles of cardiopulmonary resuscitation, make a telephone call, and then return to resuscitation. The latter course would obviously reduce the chances of successful resuscitation but, if there is no help at hand, may be the only course of action available; Dr Grenville has never found himself in that position.
- 6.83 Nowadays, ambulances are equipped with trained paramedics, defibrillators, endotracheal tubes and oxygen. A defibrillator is a machine that delivers an electric shock to the patient in such a way as to try to reorganise the electrical impulses of the heart which have become disorganised. It only works in a condition called ventricular fibrillation, not in circumstances where there is asystole, i.e. no electrical activity in the heart at all. An endotracheal tube is used to maintain the airway, which can easily become blocked.
- 6.84 Dr Grenville pointed out that, even before ambulances were equipped with trained paramedics and defibrillators, it was still important to summon an ambulance when a patient collapsed, since ambulance crews were trained in basic resuscitation techniques, and their arrival increased the chance of a successful resuscitation. Indeed, it was possible for two people inside the ambulance to maintain cardiopulmonary

resuscitation, whilst the third drove the ambulance to the hospital, where a defibrillator would be available.

- 6.85 According to Dr Grenville, cardiopulmonary resuscitation should be continued until spontaneous heartbeat and respiration are restored or until it is clear that irreversible brain damage has occurred.

## The Diagnosis of Death

- 6.86 Clearly, it is vitally important for a doctor who is told, or believes, that a patient has died, to make absolutely certain that this is the case. Dr Grenville pointed out that there are conditions – such as severe hypoglycaemia – which can mimic death. He observed:

**‘ You need to be very certain that the heart really has stopped, that it is not beating very, very slowly and very, very slightly, that the respiration really has stopped, that you are not missing very slow, very shallow respirations’.**

- 6.87 Dr Grenville went on to describe the steps which a doctor should take to ascertain whether death really has occurred. He conceded that the requirement to carry out all the steps that he described may vary with the circumstances. If a death has been expected, and there are people on hand who have observed the patient for a time before the doctor arrives, it may not be strictly necessary to follow every step, although Dr Grenville said that he would still make a thorough examination, because of the possibility that other people may be mistaken. If rigor mortis has set in, or lividity, the fact of death may be obvious.
- 6.88 In the absence of such obvious signs, however, a thorough examination should be carried out. First, the doctor should feel for a pulse at the wrist or, if a pulse cannot be detected there, at the large carotid artery in the neck. Dr Grenville himself would spend about 30 seconds feeling at each location, to ensure that he was not missing a very slow heartbeat. If he did not feel a pulse at the neck, and the patient was wearing a shirt or similar garment, he would unfasten the collar to gain access and ensure that he had correctly located where the pulse should be. The doctor should then observe the chest wall for respiration, again for at least 30 seconds. If no movement is visible, it is necessary to remove or loosen the upper clothing, so as to be able to view the chest itself. The doctor should also listen to the chest, using a stethoscope, again for a period of 30 seconds, possibly longer. The stethoscope should be applied to the skin, usually on the front of the body.
- 6.89 If the examinations described above have yielded negative results, the doctor will have become fairly certain that death has indeed occurred. The next step is to shine a bright torch into each eye to check the pupillary reaction. Once brain death occurs, the pupils become fixed and dilated, but care must be taken to ensure that there is no other reason (for example pupillary paralysis, caused by previous surgery) for the paralysis. The doctor should then look at the interior of each eye, using an ophthalmoscope to give a clear view of the blood vessels. Dr Grenville explained that, when blood stops flowing through these vessels, the column of blood breaks up and the vessel can be seen to

contain short lengths of blood, alternating with short lengths where the blood is absent; this phenomenon is known as 'cattle trucking'. It is difficult to observe and may be obscured, for example by cataracts, but, if seen to be present, it is a very significant pointer to the diagnosis of death. The final step is to apply a painful stimulus, usually by flexing forcibly the end knuckle of the finger, to ascertain whether any response is received; if the patient is deeply unconscious, he or she will probably respond with a withdrawal reflex. The whole of the examination described would take between three and four minutes, and it would be obvious to anyone looking on that it was being conducted.

- 6.90 If a doctor had seen a patient alive and that patient died unexpectedly a short time later – a situation in which Shipman frequently claimed to find himself – Dr Grenville said that all the tests described should be performed, in order to satisfy the doctor that the patient has indeed died. By contrast, Shipman rarely carried out any such examination. Sometimes, relatives told the Inquiry that he did not even approach nearer than a few feet from the body. If he did, he would usually touch the back of the neck, flick open an eyelid or briefly check the pulse at the wrist. Dr Grenville observed that all these examinations, alone or in combination, would be inadequate in order to diagnose the fact of death, whilst touching the back of the neck as Shipman frequently did (apparently to check for brain stem activity) was, according to Dr Grenville, 'simple charlatanism'.
- 6.91 It is relevant to mention here that, when paramedics from the Greater Manchester Ambulance Service diagnose a death, they are required to complete a form with tick boxes, confirming:
- that the patient has been in a collapsed condition with no signs of life for a period in excess of ten minutes and there has been no bystander cardiopulmonary resuscitation;
  - that there are no palpable pulses, carotid or femoral;
  - that there are no signs of spontaneous respiration;
  - that the pupils are fixed and dilated; and
  - that asystole has been seen and recorded on the defibrillator; the rhythm strip must be attached to the form when returned.

There is no similar requirement for a doctor who is called upon to confirm that a patient has died.

### **The Effect of Heat**

- 6.92 Once the circulation has completely ceased, cooling of the body starts. Dr Grenville explained that the rate at which cooling occurs depends on the ambient temperature, and on the presence or absence of insulating material such as clothing. As Dr Grenville observed:

**‘ A naked body in a cold environment cools very much more quickly than a fully clothed body in a warm environment, say, with the gas fire on’.**

- 6.93 Similarly, obese people cool less rapidly than very thin people, because their body fat itself acts as an insulating material. As a rough guide, Dr Grenville said that, in the absence of clear reasons for cooling to be delayed, he would expect the hands, certainly the fingers, to be cool to the touch within an hour or so of death.
- 6.94 In a significant number of cases where I have found that Shipman killed, the deceased person has been found in a room in which the fire, usually a gas fire, has been turned to an unusually high setting, making the room extremely warm. It is clear that Shipman was responsible for this, but why he did it is less clear. The effect of the increased heat would be to delay the process of cooling of the body after death. Increased heat would also, as Dr Grenville explained in the course of his evidence relating to the death of Mrs Charlotte Bennison, speed up the onset of rigor mortis and bring forward the time when rigor mortis wears off. Low temperature, on the other hand, could be expected to delay the onset of rigor mortis. It is clear that Shipman was aware of the effect of heat on the onset of rigor mortis, as he correctly explained to Mrs Nadya Williamson, the wife of Mrs Bennison’s nephew, why rigor mortis had set in earlier than might have been expected.
- 6.95 It seems likely that the high incidence of bodies found in overheated rooms resulted from efforts by Shipman to make it difficult for others accurately to estimate the time of death. Sometimes, the fact that the body was still warm when found might suggest that death had occurred more recently than was in fact the case, and might, therefore, serve to increase the apparent time interval between an earlier visit by Shipman and the death. On other occasions, the early onset of rigor mortis might lead people to believe that the death had occurred significantly earlier than was in fact the case. In any event, any attempt accurately to estimate the time of death would be made more difficult, if not impossible, by the presence of excessive heat.
- 6.96 The Inquiry legal team has investigated another possibility, namely, that heat might have the effect of speeding up the metabolism of morphine and that Shipman, knowing this, might have been attempting to minimise the chance of morphine being found in his victims’ bodies, should toxicological tests be ordered. Professor Kevin Park, Head of the Department of Pharmacology and Therapeutics at the University of Liverpool, has advised that, after death, hepatic metabolism cannot influence blood levels of morphine; keeping a deceased’s body in hot conditions is not, therefore, likely to speed up the metabolism of morphine. It is, of course, possible that Shipman mistakenly believed that it would have this effect, although the Inquiry has no positive evidence of this. On balance, it seems likely that his motive in leaving his victims in overheated rooms was to foil any attempts to assess accurately the time of death.

## **Estimating the Time of Death**

- 6.97 In many cases, Shipman purported on cremation Form B to estimate the time of death, sometimes claiming to be able to do so from the temperature of the body and, on other

occasions, specifying an exact time of death without giving any factual basis for his assertion. Dr Grenville emphasised that the timing of death is an extremely difficult and complex procedure, usually carried out by forensic pathologists. One such forensic pathologist, Professor Helen Whitwell, MBChB FRCPath DMJ(Path), registered medical practitioner, Professor of Forensic Pathology at the University of Sheffield and Consultant Pathologist to the Home Office, gave evidence to the Inquiry about three deaths after which there had been post-mortem examinations. She observed when giving evidence about the death of Mrs Pamela Mottram:

**‘...essentially the time of death is one of those huge mysteries of forensic pathology’.**

Professor Whitwell went on to say:

**‘...the general rule, even with most deaths, is the best evidence is when they were definitely last positively seen alive and then known when they were found dead (sic). There are lots of complicated equations and things that one can use, but they essentially are not of much use apart from very exceptional circumstances’.**

- 6.98 Dr Grenville said that he does not himself possess the skills necessary to estimate time of death and would not attempt to do so. He is, however, aware that it is mandatory to record the core temperature, usually by obtaining a rectal temperature. The ambient temperature must also be measured, and careful observations noted about the deceased’s clothing or covering and those signs which wax and wane after death, such as rigor mortis and post-mortem lividity. There is no evidence that Shipman ever obtained or recorded such information in cases where he estimated the time of death with apparent confidence, nor is there any evidence that he possessed the skills necessary to make such estimates of time.

### **The Patient who Refuses to Heed Medical Advice**

- 6.99 Dr Grenville was asked how a general practitioner should deal with a patient who has a serious medical condition but refuses admission to hospital, or other necessary treatment. This was a situation in which Shipman claimed frequently to find himself, often with a patient who had suffered signs suggestive of an evolving stroke or transient ischaemic attack, or who had suffered, or may have suffered, a heart attack, or who had a chest infection or bronchopneumonia. Shipman’s solution to this problem was, usually at least, to leave the patient at home, without arranging any immediate care, and without seeking the assistance of relatives to change the patient’s mind; he would then tell the patient ‘**tluk**’, i.e. ‘to let us (*the surgery*) know’ if he or she had a change of mind or had deteriorated.
- 6.100 By contrast, Dr Grenville said that it was ‘incredibly rare’ for a patient to refuse to take such advice. If the initial reaction is negative, the doctor must explain carefully the reasons for the advice given. In the face of a continued refusal to accept his advice, he said that he would ask the patient whether there was a relative, friend or neighbour to whom he could speak, in the hope that the patient would accept the joint advice of

himself and that other person. If he still met with no success, he would make a most detailed note of what had happened, and ask the patient to sign a declaration that he had advised the patient to go to hospital and explained the risks associated with failing to take that advice. The effect of requesting a signature is, he says, to make it clear to the patient that the doctor is serious, and also to protect the doctor in the event of a complaint or litigation in the future.

- 6.101 Dr Grenville said that he had not had to resort to obtaining a signature from a patient refusing to be admitted to hospital, but he had had to do so where a patient was refusing treatment which he definitely believed was in the patient's best interests. In the event that he was forced, contrary to his own judgement, to leave a patient at home rather than have him or her admitted to hospital, he said that he would want to try to arrange for the patient to be observed on a more or less continuous basis, whether by family, the district nursing service or Social Services. In an extreme case, the National Assistance Act 1948 could be used, although this takes time and is usually resorted to in the case of a person living in chronically poor conditions, rather than someone suffering a serious life-threatening illness.
- 6.102 In an extreme case, a doctor may have to override a patient's wishes. In the case of Mrs Mary Coutts, Dr Grenville said that, had she been suffering from bronchopneumonia which was plainly life-threatening, a reasonable doctor might have been justified in ignoring any weak protests that she might have raised about not going into hospital and in simply overriding her and getting her into hospital for treatment.
- 6.103 Most of Shipman's patients had been registered with him for years, had the utmost confidence in his medical abilities and trusted him implicitly. In reality, it is highly unlikely that they would have resisted his attempts to persuade them of the need for hospital admission, particularly if they were as ill as he described. Even those who were genuinely unwilling to be admitted, such as Mrs Elizabeth Battersby, would have been unlikely to maintain their opposition once their relatives were informed and lent their support to Shipman.

